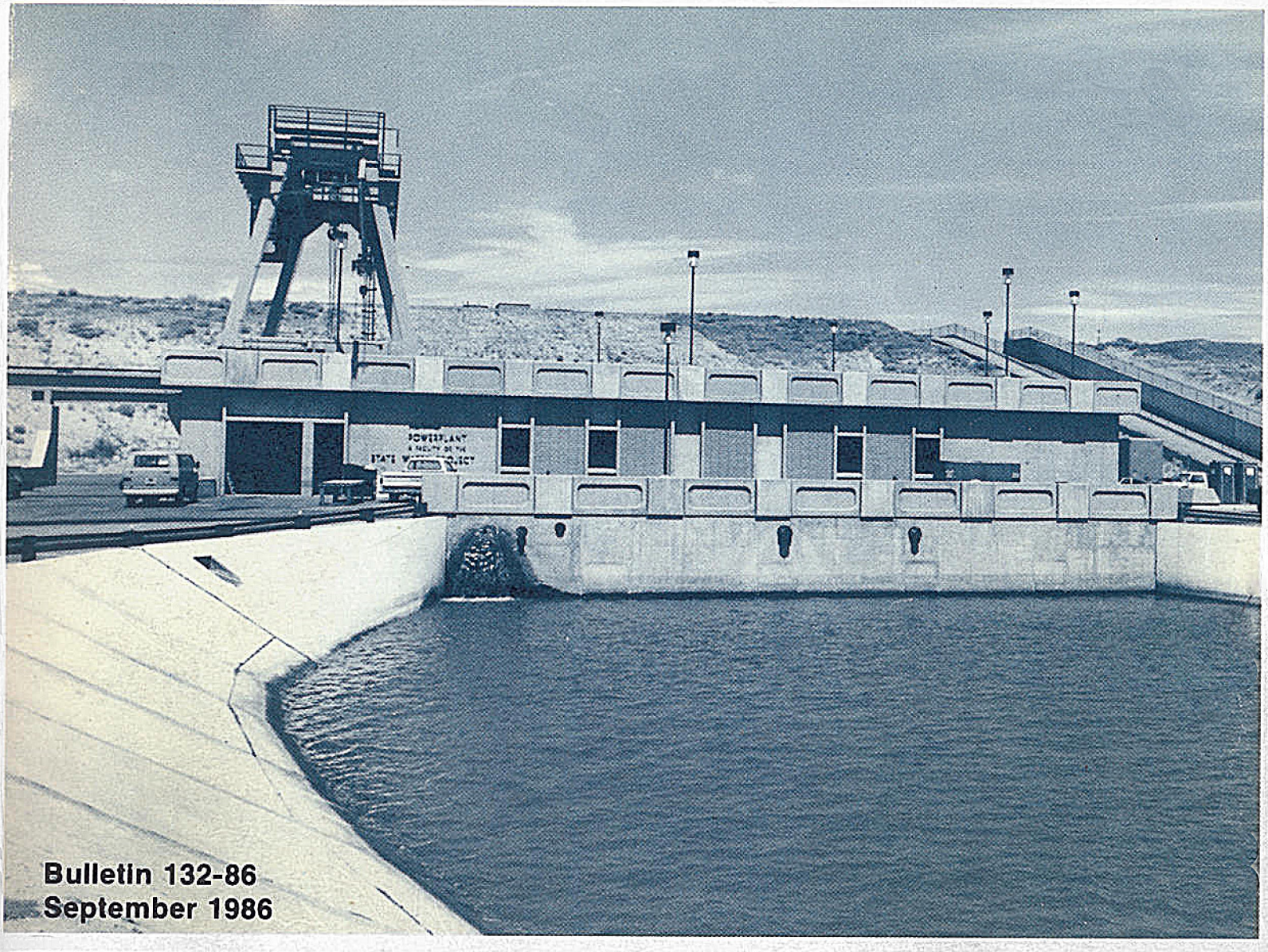


Bulletin 132-86
September 1986

State of California
The Resources Agency

Department of
Water Resources

Management of the California State Water Project

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Secretary for Resources
The Resources Agency

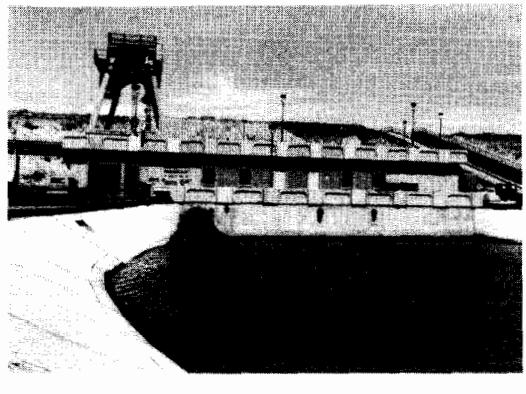
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ON THE COVER: The recently completed Alamo Powerplant began commercial operation on July 1, 1986. This 17-MW recovery facility, on the East Branch of the California Aqueduct, recovers energy formerly dissipated in the Cottonwood Chute.

Department of
Water Resources

Bulletin 132-86

Management of the California State Water Project

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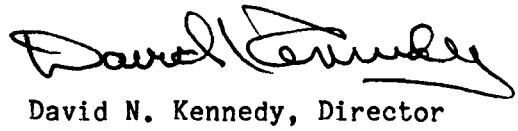
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The Mojave Aqueduct modifications consist of raising the aqueduct lining about 4 vertical feet along 53 miles of the East Branch of the California Aqueduct, between Alamo Powerplant and Pearblossom Pumping Plant. Construction work, like that shown above, began in July 1985.

FOREWORD

This edition of the Bulletin 132 series represents the twenty-fourth annual summary of the State Water Project's operation and management. Bulletin 132-86 reviews Project operations during calendar year 1985 and describes other management activities, emphasizing the period between July 1, 1985 and June 30, 1986. 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 (1987).



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

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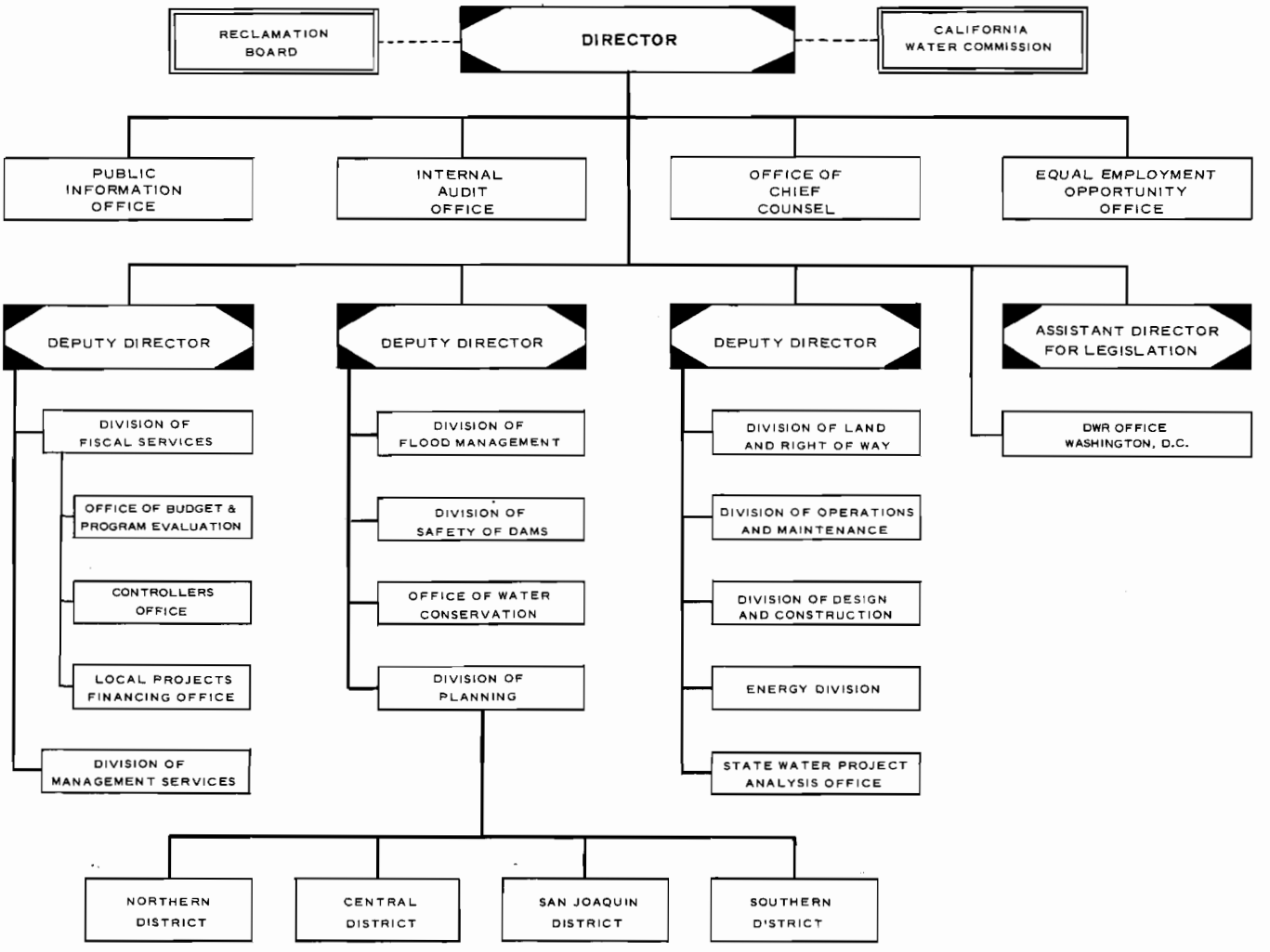
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The California Water Commission serves as a policy advisory body to the Director of Water Resources on all California water resources matters. The nine-member citizen commission provides a water resources forum for the people of the State, acts as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

ORGANIZATION OF THE DEPARTMENT OF WATER RESOURCES



ABBREVIATIONS

In general, the use of abbreviations in this bulletin follows the practice of spelling out a term in full at its first use in each chapter or major section, followed by the abbreviated form in parentheses. The following names and terms in common use throughout the bulletin, are not defined separately:

cfs	cubic feet per second
CVP	Central Valley Project
DWR	Department of Water Resources
EIR	Environmental Impact Report (State)
EIS	Environmental Impact Statement (Federal)
kW	kilowatt
kWh	kilowatthour
kV	kilovolt
MW	megawatt
MWDSC	The Metropolitan Water District of Southern California
OMP&R	operation, maintenance, power, and replacement
SWP	State Water Project
SWRCB	State Water Resources Control Board
USBR	United States Bureau of Reclamation

Chapter I

OVERVIEW OF THE STATE WATER PROJECT

The Bulletin 132 series has documented State Water Project (SWP) management for 24 years. The format of Bulletin 132-86 varies only slightly from previous reports; some tables have been revised and a figure, B-3, has been added. These changes should improve the bulletin's readability and usability in providing information about SWP services and water deliveries.

The first four chapters in Bulletin 132-86 deal with SWP history, 1985 operations, Project administration, and design and construction. Complete analyses of present and future water and power supplies appear in Chapters V and VI, respectively. Chapter VII outlines future costs and financing. The contractor profiles are in Chapter VIII. Appendix B, documenting computation of contractor water charges for 1987, forms the second half of this bulletin.

The State Water Project

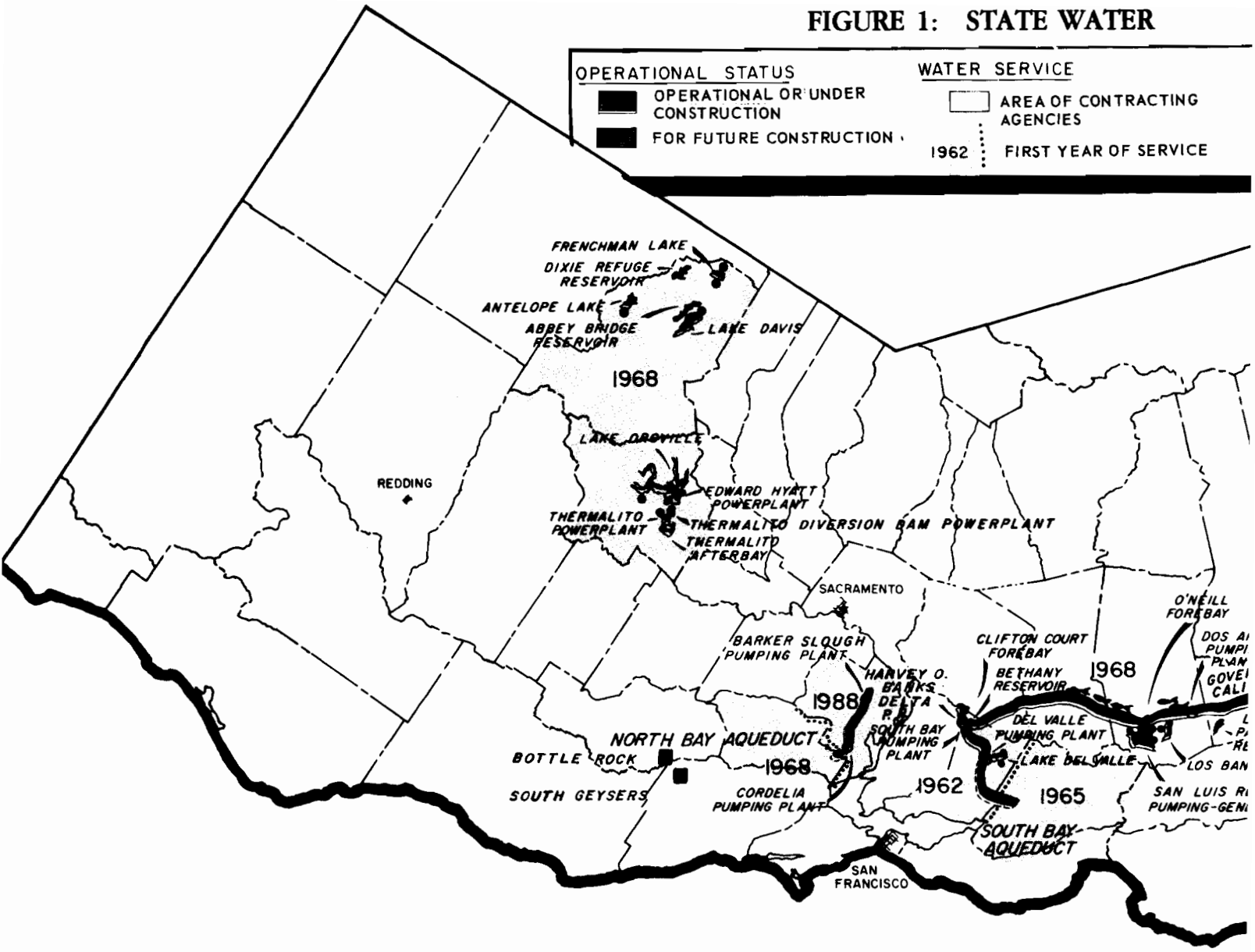
California is a land of contrasts. Within its boundaries are the highest and lowest elevations in the continental United States. The climate varies from subtropical to alpine, and regional rainfall ranges from less than 2 inches to more than 100 inches annually. Floods and droughts often occur, sometimes in the same year. Many large, heavily populated areas of the State are removed from abundant water supplies; conversely, areas of sparse population are often the locations of plentiful water supplies. The location of some of the State's most productive agricultural lands in arid or semiarid areas further illustrates California's geographical contrasts. Most of California's water problems result from these contrasts.

The need for water, and the ensuing challenges of storing and transporting it, gave rise to the SWP. More than 500 miles of water delivery canals, pipelines, and tunnels have been completed since the early 1960s. The SWP is one of the most ambitious water transfer systems ever constructed; furthermore, the road to SWP development has been as varied as the California terrain.

As early as 1919, the Marshall Plan, a blueprint for a statewide water conveyance system, was proposed for California. Although grandiose in design, the Marshall Plan was unable to muster large scale, statewide support and was rejected by the Legislature in 1926. Five years later, State Engineer Edward Hyatt completed a 10-year water development study, authorized by the Legislature. Hyatt's State Water Plan addressed the State's most critical water problems and provided for the exchange of water between the north and south portions of the Central Valley. In 1933, this plan evolved into the Central Valley Project (CVP). Because of the Depression, however, State funding for the CVP was not readily available, and the federal government took over the project.

Following World War II, the planning that eventually led to the SWP was stimulated by the unprecedented social and industrial development of California and the corresponding increase in the need for water. In 1951, State Engineer A. D. Edmonston presented to the Legislature a report that marked the beginning of the SWP. Edmonston's report outlined the Feather River Project, which included a multipurpose dam and reservoir on the Feather River near Oroville and an afterbay dam, both with power plants.

FIGURE 1: STATE WATER



DAMS AND RESERVOIRS

Name of Reservoir	Reservoirs[a] Capacity (acre-feet)	Surface Area (acres)	Shoreline (miles)	Dams Crest Elevation (feet)	Structural Height (feet)	Crest Length (feet)	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	1,070,000[b]	12,700	65	554	385	18,600	77,645,000
O'Neill Forebay	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	-	-
Totals	5,806,000	55,040	493			175,050	266,599,000

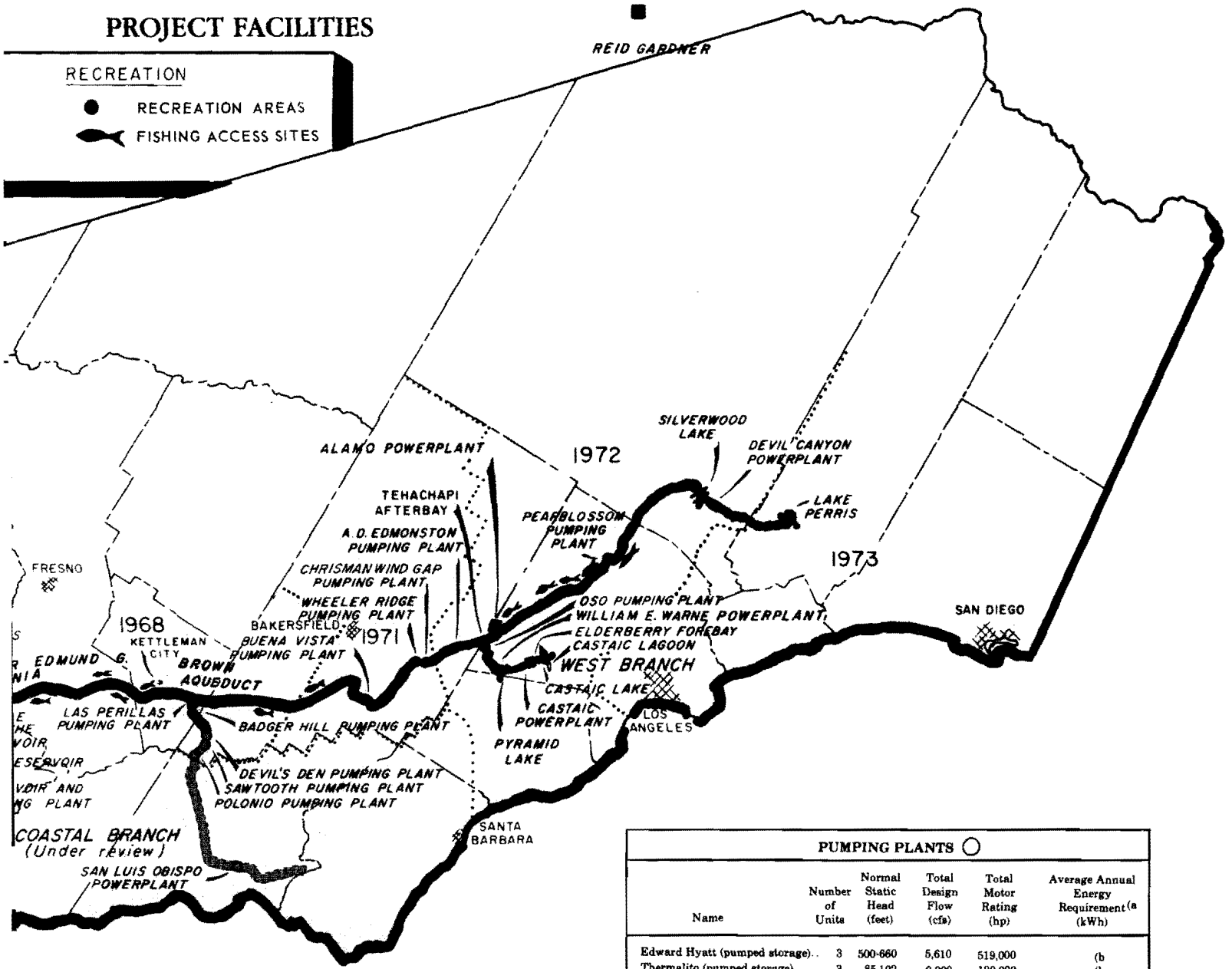
a) Reservoir data represent design elevation, generally spillway crest level. In most cases, maximum operational levels are set 1 or 2 feet lower.
b) SWP share of total storage of 2,040,000 acre-feet.

AQUEDUCTS

Name	Length (miles) Total	Canal	Pipeline	Tunnel	Channel and Reservoir
North Bay Aqueduct	27.4	0	27.4	0	0
South Bay Aqueduct	42.9	8.4	32.9	1.6	0
Subtotal	70.3	8.4	60.3	1.6	0
California Aqueduct (main line):					
Delta to O'Neill Forebay	68.4	67.0	0	0	1.4
O'Neill Forebay to Kettleman City	105.7	103.5	0	0	2.2
Kettleman City to A.D. Edmonston Pumping Plant	120.9	120.9	0	0	0
A.D. Edmonston Pumping Plant to Tehachapi Afterbay	10.6	0.2	2.5	7.9	0
Tehachapi Afterbay to Lake Perris	138.4	93.4	36.3	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)	96.2	14.8[a]	81.4	0	0
Subtotal, branches	128.1	23.9	87.8	7.2	9.2
Totals	642.4	417.3	188.9	20.5	15.7

a) Constructed

PROJECT FACILITIES



POWERPLANTS □

Name	Number of Units	Normal Static Head (feet)	Total Design Flow (cfs)	Total Generator Rating (kW)	Average Annual Energy Output (a (kWh)
Edward Hyatt	6	410-676	16,950	678,750	2,080,000,000
Thermalito	4	85-102	16,900	119,800	320,000,000
San Luis					
Total	8	99-327	13,200	424,000	
SWP Share				222,100	180,000,000
Alamo	1	138-144	1,640	17,000	110,000,000
Devil Canyon	2	1,368-1,433	1,200	119,700	770,000,000
W.E. Warne	4	719-739	3,100	157,000	960,000,000
Castaic					
Total	7	830-1,098	18,400	1,250,000	
SWP Share				214,000	1,600,000,000
San Luis Obispo (b	1	730	94	5,000	47,000,000
Thermalito Diversion Dam	1	70-77	600	3,000	17,000,000
Reid Gardner Unit No. 4					
Total	1			250,000	
SWP Share				169,500	1,280,000,000
Bottle Rock	1			55,000	360,000,000
South Geysers	1			55,000	360,000,000
Total, SWP Share					7,974,000,000

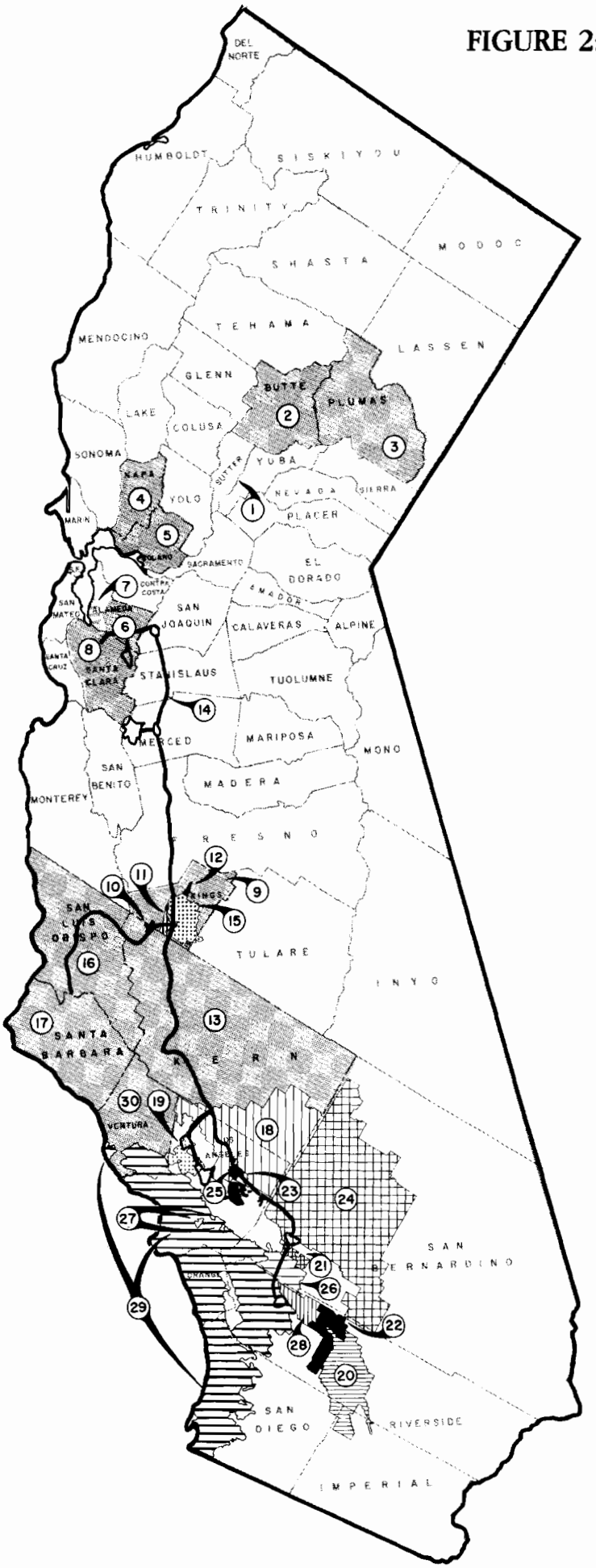
a) Under full development.
b) Tentative data for future facility.

PUMPING PLANTS ○

Name	Number of Units	Normal Static Head (feet)	Total Design Flow (cfs)	Total Motor Rating (hp)	Average Annual Energy Requirement (a (kWh)
Edward Hyatt (pumped storage)	3	500-660	5,610	519,000	(b
Thermalito (pumped storage)	3	85-102	9,000	120,000	(b
North Bay Aqueduct					
Barker Slough (c	9(d	120	154	4,800	12,000,000
Cordelia (c	11(d	100-380	119	5,600	21,000,000
South Bay Aqueduct					
South Bay	9	545-566	330	27,750	153,000,000
Del Valle	4	0-38	120	1,000	2,000,000
California Aqueduct					
H.O. Banks Delta	11	244	10,303	333,000	1,260,000,000
San Luis (pumped storage)					
Total	8	99-327	11,000	504,000	
SWP Share			5,760	264,000	255,000,000
Dos Amigos					
Total	6	113	13,200	240,000	
SWP Share			7,100	130,000	552,000,000
Buena Vista	10(d	205	5,049	144,500	694,000,000
Wheeler Ridge	9(d	233	4,598	150,000	784,000,000
Chrisman Wind Gap	9(d	518	4,410	330,000	1,660,000,000
A.D. Edmonston	14(d	1,926	4,095	1,120,000	5,660,000,000
Pearblossom	6	540	1,380	113,200	495,000,000
West Branch					
Oso	8	231	3,128	93,800	467,000,000
Coastal Branch					
Las Perillas	6	55	450	4,050	17,000,000
Badger Hill	6	151	450	11,750	44,000,000
Devil's Den (c	4	384	111	8,600	44,000,000
Sawtooth (c	4	300	111	7,000	35,000,000
Polonio (c	4	855	111	17,800	93,000,000
Total, SWP Share					12,248,000,000

a) Under full development.
b) Pumped storage capability used only under economically favorable conditions.
c) Tentative data for future facility.
d) Includes spare unit; data for spare unit is excluded from total design flow but included in total motor rating.

FIGURE 2: LONG-TERM



WATER SUPPLY CONTRACTING AGENCIES

Location No.	Contracting Agency	Total Cumulative Deliveries through 12/31/85 (acre-feet)(a	Maximum Annual Entitlement (acre-feet)	Total Payments through 12/31/85 (dollars)	Gross Area as of 7/1/85 (acres)	Assessed Valuation 1985-86 (dollars)(b	Estimated Population (7/1/85)
	UPPER FEATHER AREA						
1.	City of Yuba City	0	9,600	61,000	3,650	550,976,000	21,100
2.	County of Butte	4,557	27,500	348,000	1,069,000	4,445,148,000	160,970
3.	Plumas County Flood Control and Water Conservation District	5,406	2,700	436,000	1,644,000(c	1,197,777,000(c	18,500(c
	Subtotal	9,963	39,800	845,000	2,716,650	6,193,901,000	200,570
	NORTH BAY AREA						
4.	Napa County Flood Control and Water Conservation District	83,302	25,000	6,010,000	508,000	3,883,218,000	104,000
5.	Solano County Flood Control and Water Conservation District	0	42,000	20,660,000	575,000	7,998,000,000	275,200
	Subtotal	83,302	67,000	26,670,000	1,083,000	11,881,218,000	379,200
	SOUTH BAY AREA						
6.	Alameda County Flood Control and Water Conservation District, Zone 7	268,736	46,000	18,386,000	272,000	4,518,383,000	115,000
7.	Alameda County Water District	353,423	42,000	20,660,000	63,000	2,189,000,000	229,550
8.	Santa Clara Valley Water District	1,748,427	100,000	79,698,000	849,000	54,940,000,000	1,397,000
	Subtotal	2,370,586	188,000	118,744,000	1,184,000	61,647,383,000	1,740,550
	SAN JOAQUIN VALLEY AREA						
9.	County of Kings	34,200	4,000	812,000	893,300(d	2,266,773,000(d	84,900(d
10.	Devil's Den Water District	274,947	12,700	7,169,000	8,700	(e	50
11.	Dudley Ridge Water District	983,358	57,700	16,526,000	29,970	(e	50
12.	Empire West Side Irrigation District	61,796	3,000	1,054,000	7,400	(e	50
13.	Kern County Water Agency	12,549,535	1,153,400	325,991,000	5,161,000(f	30,197,536,000(f	480,600(f
14.	Oak Flat Water District	103,525	5,700	1,338,000	4,000	(e	50
15.	Tulare Lake Basin Water Storage District	2,003,183(g	118,500	29,927,000	189,200	(e	50
	Subtotal	16,010,544	1,355,000	382,817,000	6,293,570	32,464,309,000	565,750
	CENTRAL COASTAL AREA						
16.	San Luis Obispo County Flood Control and Water Conservation District	0	25,000	4,984,000	2,131,300	9,253,619,000	190,100
17.	Santa Barbara County Flood Control and Water Conservation District	0	45,486	8,914,000	1,756,900	13,734,978,000	334,600
	Subtotal	0	70,486	13,898,000	3,888,200	22,988,597,000	524,700
	SOUTHERN CALIFORNIA AREA						
18.	Antelope Valley-East Kern Water Agency	479,826	138,400	72,532,000	1,524,000	4,627,210,000	117,000
19.	Castaic Lake Water Agency	49,848	41,500	26,824,000	125,000	3,769,160,000	91,000
20.	Coachella Valley Water District	130,566	23,100	21,261,000	637,600	7,417,437,000	111,800
21.	Crestline-Lake Arrowhead Water Agency	14,308	5,800	4,837,000	55,100	912,268,000	13,200
22.	Desert Water Agency	204,300	38,100	34,398,000	208,800	3,859,309,000	63,700
23.	Littlerock Creek Irrigation District	4,839	2,300	1,189,000	43,300	62,827,000	1,900
24.	Mojave Water Agency	57,589	50,800	30,691,000	3,160,400	5,764,843,000	130,600
25.	Palmdale Water District	1,558	17,300	8,193,000	73,900	860,464,000	30,900
26.	San Bernardino Valley Municipal Water District	148,720	102,600	90,526,000	210,200	7,701,058,000	395,500
27.	San Gabriel Valley Municipal Water District	59,911	28,800	24,802,000	16,300	4,384,891,000	175,800
28.	San Gorgonio Pass Water Agency	0	17,300	12,877,000	140,600	853,231,000	39,300
29.	The Metropolitan Water District of Southern California	6,459,467	2,011,500	1,562,839,000	3,281,000(h	458,782,060,000(h	13,015,400(h
30.	Ventura County Flood Control District	0	20,000	10,094,000	1,179,500(i	23,264,999,000(i	600,200(i
	Subtotal	7,610,932	2,497,500	1,901,063,000	10,655,700	522,265,397,000	14,771,200
	TOTAL STATE WATER PROJECT	26,085,327	4,217,786	2,444,037,000	25,821,120(j	657,440,805,000(j	18,181,970(j
	NET TOTAL, STATE WATER PROJECT SERVICE AREA				24,502,204(k	641,214,025,000(k	17,869,371
	TOTAL, STATE OF CALIFORNIA				100,314,000	968,620,000,000	26,365,000
	PERCENT, NET SWP VS. TOTAL CALIFORNIA				24.4	66.2	67.8

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 to Napa County FC&WCD.
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) Total for all of Plumas County Flood Control and Water Conservation District, including Last Chance Creek Water District.
d) Total for all of Kings County, including the following contracting agencies: County of Kings, Dudley Ridge Water District, Empire West Side Irrigation District, nearly all of Tulare Lake Basin Water Storage District, and about 40 percent of Devil's Den Water District.
e) Assessed valuation not available on an agency area breakdown.
f) Total for all of 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.
g) Includes 2,706 acre-feet of emergency relief water transferred to Tulare Lake Basin Water Storage District from Kern County 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 of Ventura County, including the following contracting agencies: Ventura County Flood Control District and portions 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.

His proposal also included a Delta Cross Channel, an electric power transmission system, an aqueduct to transport water from the Sacramento-San Joaquin Delta to both Santa Clara and Alameda counties, and an aqueduct to transport water from the Delta to the San Joaquin Valley and Southern California. Later that year the Legislature authorized the Project, and gave the Division of Water Resources (reorganized as the Department of Water Resources in 1956) the authority to conduct future studies.

In 1959, the Legislature passed the Burns-Porter Act. This act provided the major financing for initial SWP facilities. The next year was a pivotal one for the SWP. In 1960, California's voters passed a $1.75 billion bond issue under the Burns-Porter Act; a water contracting program was initiated; and more than a decade of intense construction activity was launched.

The Burns-Porter Act also authorized unspecified additional future storage facilities, facilities to transfer water across the Sacramento-San Joaquin Delta, and facilities to remove drainage water from the San Joaquin Valley. Studies are continuing for most of these features, as described in Chapters III and V.

In 1962, SWP water deliveries began to the South San Francisco Bay and Plumas County areas. Kern County first received SWP deliveries in 1968 and finally, in 1972, water reached Southern California. The 1973 dedication of Lake Perris, southern terminus of the California Aqueduct, marked the end of initial SWP construction. Present and future SWP facilities are shown in Figure 1. Phase II construction of the North Bay Aqueduct, begun in 1984, is scheduled for completion in late 1987. Enlargement of the East Branch of the California Aqueduct was approved in 1986, and the first stage of construction is scheduled for completion in the early 1990s. The only remaining major conveyance facility awaiting construction is Phase II of the California Aqueduct's Coastal Branch.

SWP Service Areas

After the 1960 bond issue passed, the State began signing water supply contracts with public agencies. Thirty original long-term contracts are still in effect; a thirty-first contractor, Hacienda Water District, merged with the Tulare Lake Basin Water Storage District in 1981. The long-term contracts require the recipients of Project services to repay all reimbursable Project costs. SWP entitlements, as outlined in the contracts, will eventually total 4.2 million acre-feet per year.

Figure 2 shows the boundaries of the 30 public agencies that have contracts with the SWP. Together they constitute 24 percent of the State's area and contain nearly 68 percent of the State's population.

Six contractors have yet to receive water from SWP facilities; their contracts specify initial deliveries to be made in 1980 or thereafter. A seventh contractor, Palmdale Water District, began taking delivery of SWP supplies in 1985. Napa County Flood Control and Water Conservation District has received only non-Project water pumped and delivered through SWP facilities.

As Figure 2 indicates, the 30 agencies represent a wide variety of size, location, climate, and prosperity. To aid in understanding the diverse nature of the SWP service areas, previous bulletins have included profiles of long-term contracting agencies. Bulletin 132-86 continues the series of contractor profiles in Chapter VIII.

SWP Accomplishments

The SWP's primary purpose is to conserve water originating in areas of surplus and transport water to areas of need for agricultural and municipal and industrial use. Additional Project purposes include flood control, hydroelectric power generation, salinity control, recreation, and fish and wildlife enhancement.

Table 1 summarizes SWP water deliveries, recreation, and energy generation accomplishments through 1985. (Table 1 water delivery totals exceed those in Figure 2 because Table 1 includes service to all customers, while Figure 2 shows deliveries to long-term contractors only.)

Figures for flood control accomplishments are not reflected in Table 1; however, Oroville Dam alone prevented millions of dollars of property damage from floods in 1964, 1967-68, 1970, 1974, 1980, 1982-83, and 1986. The SWP also helped to reduce flooding in the Tulare Lake Basin during 1978, 1980, 1982-84, and 1986. The latter was achieved by diverting floodwater into the California Aqueduct through the Kern River Intertie, built by the Corps of Engineers in 1976.

SWP 1985 Highlights

- Alamo Powerplant began commercial operation on July 1, 1986. This 17-MW recovery facility, located on the East Branch of the California

TABLE 1: SWP ACCOMPLISHMENTS THROUGH 1985

Year	Water Delivered (Acre-Feet)							Recreation Supported (Recreation Days)(b	Hydro-electric Energy Generated (kilowatt-hours)(c
	Entitlement Water			Other Deliveries					
				Surplus					
	Municipal and Industrial Use	Agricultural Use	Total	Municipal and Industrial	Agricul-tural	Other Water(a	Total Delivery		
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	628,000,000
1969	34,434	158,586	193,020	0	72,397	18,829	284,246	1,554,800	2,614,000,000
1970	47,996	185,997	233,993	0	133,024	38,080	405,097	1,804,800	2,679,000,000
1971	85,286	272,054	357,340	2,400	293,619	44,127	697,486	2,085,900	3,302,000,000
1972	181,066	430,735	611,801	22,205	401,759	73,127	1,108,892	1,971,200	1,922,000,000
1973	293,824	400,564	694,388	3,161	293,255	43,666	1,034,470	2,502,000	3,298,000,000
1974	418,521	455,556	874,077	4,753	412,923	48,342	1,340,095	4,073,600	4,672,000,000
1975	641,621	582,369	1,223,990	21,043	601,859	67,170	1,914,062	4,189,300	3,159,000,000
1976	818,588	554,414	1,373,002	32,488	547,622	116,962	2,070,074	4,239,600	2,131,000,000
1977	280,919	293,236	574,155	0	0	390,176	964,331	3,951,900	958,000,000
1978	742,385	710,314	1,452,699	3,566	13,348	122,916	1,592,529	5,773,700	2,882,000,000
1979	690,659	969,237	1,659,896	66,081	582,308	189,396	2,497,681	5,298,700	2,485,000,000
1980	730,545	799,204	1,529,749	19,722	384,835	48,590	1,982,896	5,701,900	2,988,000,000
1981	1,057,273	852,289	1,909,562	12,000	896,428	283,849	3,101,839	6,017,800	3,358,000,000
1982	928,721(e	821,303	1,750,024	0	215,873	155,820(e	2,121,717	6,187,700	5,097,000,000
1983	483,499	701,370	1,184,869	0	13,019	188,596	1,386,484	5,838,200	5,419,000,000
1984	723,468(f	865,043	1,588,511	3,663	259,254	387,505(f	2,238,933	6,273,100	3,368,000,000
1985	998,138	1,002,915	2,001,053	9,638	292,372	414,566	2,717,629	6,639,800	3,227,000,000
Total(d	9,209,162	10,186,214	19,395,376	210,720	5,525,429	2,885,384	28,016,909	76,939,600	54,187,000,000

a) Includes preconsolidation repayment water, emergency relief water, exchange 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 water), recreation water, and demonstration ground water fill withdrawal.
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, and Castaic Powerplants.
d) In addition, SWP dams have prevented millions of dollars worth of flood damage.
e) Revised and corrected from Bulletin 132-85 to reflect 557 acre-feet of 1978 exchange water (MWDSC Basin) changed from other water to municipal and industrial use entitlement water.
f) Revised and corrected from Bulletin 132-85 to reflect 126 acre-feet of 1982 exchange water (MWDSC Basin) changed from other water to municipal and industrial use entitlement water.

Aqueduct, will recover energy formerly dissipated in the Cottonwood Chutes.

- The 1984-85 water year was a "dry" year as classified by the SWRCB's Decision 1485 criteria. Like the year before, 1984-85 began with above normal precipitation, but below normal amounts of rain and snowfall after January resulted in a total water year precipitation of only 83 percent of normal.

- Deliveries of SWP entitlement water topped the 2 million acre-foot mark in 1985. Entitlement water deliveries to long-term contractors totaled 2,001,053 acre-feet, the largest amount yet delivered by the SWP. This amount exceeds by about 100,000 acre-feet the initial fall 1984 requested deliveries and is about 26 percent higher than the previous year's entitlement deliveries.

- Surplus water deliveries totaled 302,010 acre-feet. This represents an increase of approximately 15 percent over 1984.

- For the second consecutive year, Decision 1485 requirements produced balanced water conditions in the Delta, as defined in the Coordinated Operation Agreement. The three periods of balanced water conditions during 1985 were: January 30 to February 7; February 17 to March 9; and April 12 to November 30. This was the sixth year, out of the last seven, in which balanced water conditions in the Delta were achieved.

- The Coordinated Operation Agreement for the CVP and SWP is currently undergoing congressional approval. The draft agreement negotiated by DWR and the USBR includes provisions for conveyance of CVP water through SWP facilities and for SWP purchases of CVP water on an interim basis. Public review of the draft EIS-EIR took place between September and November 1985; a final EIS-EIR was written and published in early 1986, incorporating testimony from the review period.

- Overall December 31, 1985 SWP reservoir storage was down by about 14 percent from 1984. Total reservoir storage was 3,644,000 acre-feet, down 589,000 acre-feet from the previous year. This was the lowest SWP storage since 1981. Lake Oroville, in November, dropped to the lowest storage level since the 1976-77 drought, but ended the year with storage of 2,098,000 acre-feet.

- San Luis Dam again experienced a crack in the roadway in the same place as the 1981 slide. The discontinuous crack, although longer than the 1984 crack, was narrower, which could indicate stabilization of the slide area. Surveillance of the San Luis Dam will continue.

- Units 10, 12, and 14 at the A. D. Edmonston Pumping Plant began operation, bringing the plant up to the full complement of 14 operational pumps. However, mechanical problems put Units 13 and 9 out of service, thereby delaying the scheduled outage of the west discharge line. At least six operational pumps were required to maintain pumping schedules.

- Almost 44,500 acre-feet were delivered via the connection built in 1984 from the First Los Angeles Aqueduct to the East Branch of the California Aqueduct. The connection supplied 984 acre-feet of water to SWP contractor Antelope Valley-East Kern Water Agency in January and February

1985, while the East Branch was out of service to facilitate work on the Alamo Powerplant. Later in the year, the Los Angeles Department of Water and Power delivered 43,500 acre-feet of its water via the connection while its San Francisquito Powerplant No. 1 was out of service.

- Bottle Rock Powerplant was shut down several weeks for maintenance and modifications to overcome problems with steam contamination, but returned to service August 1, 1985. However, the steam supplier experienced wellfield problems which created a steam supply reduction, resulting in the plant's inability to maintain full output.

- On March 11, 1986, MWDSC's Board of Directors voted to authorize the General Manager to execute a contract amendment covering the enlargement of the East Branch, and to request DWR to proceed with final design and construction. The amendment was signed on April 8, 1986. As of June 30, 1986, five of the other six contractors participating in the enlargement had executed contract amendments.

- Construction began on raising the lining of the Aqueduct's East Branch by four feet, between Alamo Powerplant and Pearblossom Pumping Plant. Final design work for enlarging Pearblossom Pumping Plant and other East Branch facilities has also started.

- DWR awarded the license to build a new fiber optics communications system for the SWP to MCI Telecommunications, Inc. in October 1985. The new system will provide increased capacity and reliability to the SWP. The estimated cost of $9 million will be offset by a $7.4 million right-of-way agreement, along the California Aqueduct, between DWR and MCI. Work began on the new system in 1986.

- Design is nearing completion for both the Cordelia and Barker Slough pumping plants. Of the five North Bay Aqueduct pipeline contracts: one is complete, two are under construction, and the two remaining contracts were awarded. Phase II of the North Bay Aqueduct is scheduled for completion in late 1987.

Chapter II

SWP OPERATIONS IN 1985

This chapter summarizes SWP water and power operations during the report period, as well as recreation and visitor use at SWP facilities and associated activities affecting fish and wildlife.

Water Operations

Water conditions, SWP reservoir and aqueduct operations, and SWP water quality during 1985 are covered in this section.

Water Conditions

Although total precipitation for the 1984-85 water year (October 1, 1984 through September 30, 1985) was below average, the year began with above normal amounts of precipitation. Some stations reported as much as 500 percent above average for November; during January, however, many stations recorded only 10 percent of that month's average. These fluctuations continued throughout the year, resulting in overall statewide average precipitation of 88 percent of normal (Figure 3).

The SWRCB's Water Rights Decision 1485 uses an index which is the sum of the computed unimpaired runoff of the four major Sacramento Valley river basins (the Sacramento, Feather, Yuba, and American rivers). DWR's May 1 forecast placed the index at 11,550,000 acre-feet for the 1984-85 water year. Actual unimpaired runoff in the four river basins was 10,989,000 acre-feet, about 5 percent less than the predicted amount. Both the forecast and the actual runoff fell within Decision 1485 criteria for a "dry" year.

Figure 4 shows cumulative unimpaired runoff to Lake Oroville and Shasta Lake during the 1984-85 water year. Unimpaired runoff to Lake Oroville was above average for the first two months of the water year, but by the end of December the runoff had slipped below average. The runoff continued well below average for the rest of the water year, resulting in a total umimpaired runoff of 58 percent of average.

Unimpaired runoff to Shasta Lake remained above average for the first quarter of the water year. In January, the cumulative runoff slipped below average and stayed below average through the water year for a total runoff of 70 percent of average.

For the second consecutive year, Decision 1485 requirements produced balanced water conditions in the Delta, as defined in the Coordinated Operation Agreement. This was the sixth year, out of the last seven, in which balanced water conditions were achieved. Balanced water conditions are proclaimed by DWR and the USBR when upstream reservoir storage withdrawals, plus other inflows, approximately equal the water supply needed to (1) satisfy Sacramento Valley and Sacramento-San Joaquin Delta in-basin and export needs, and (2) meet Delta water quality objectives.

In 1985, balanced water conditions were declared during three different periods:

- January 30 through February 7;
- February 17 through March 9; and
- April 12 through November 30.

During balanced water conditions, each Agency adjusts its reservoir storage

FIGURE 3: STATEWIDE PRECIPITATION 1984-85 WATER YEAR

(Precipitation in Percent of Normal)

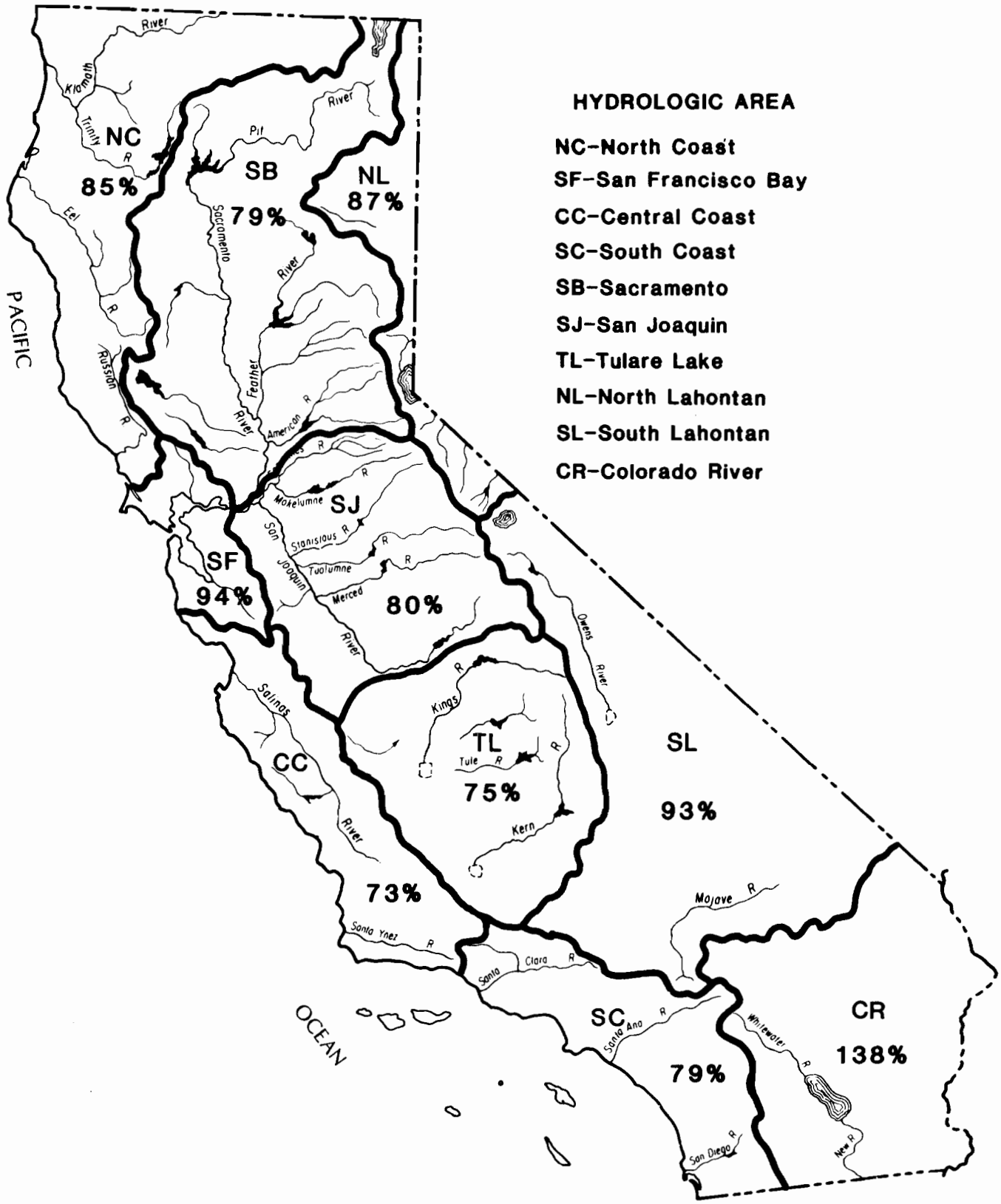


FIGURE 4: CUMULATIVE UNIMPAIRED RUNOFF TO LAKE OROVILLE AND SHASTA LAKE

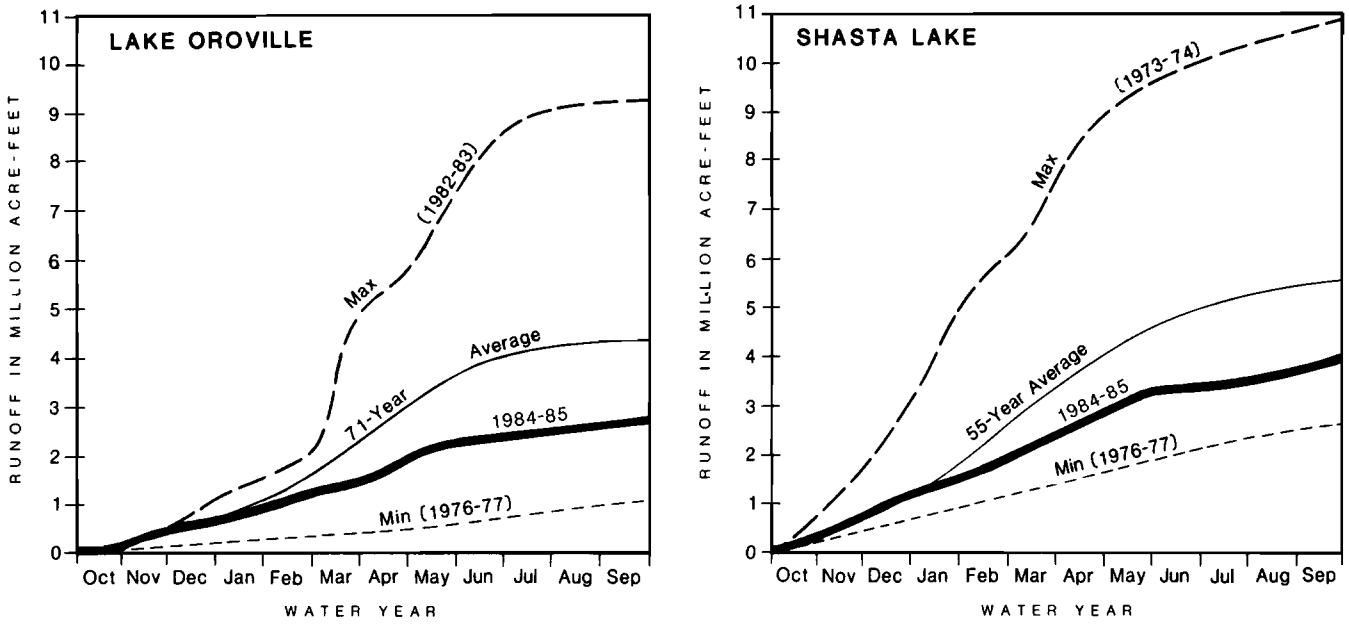
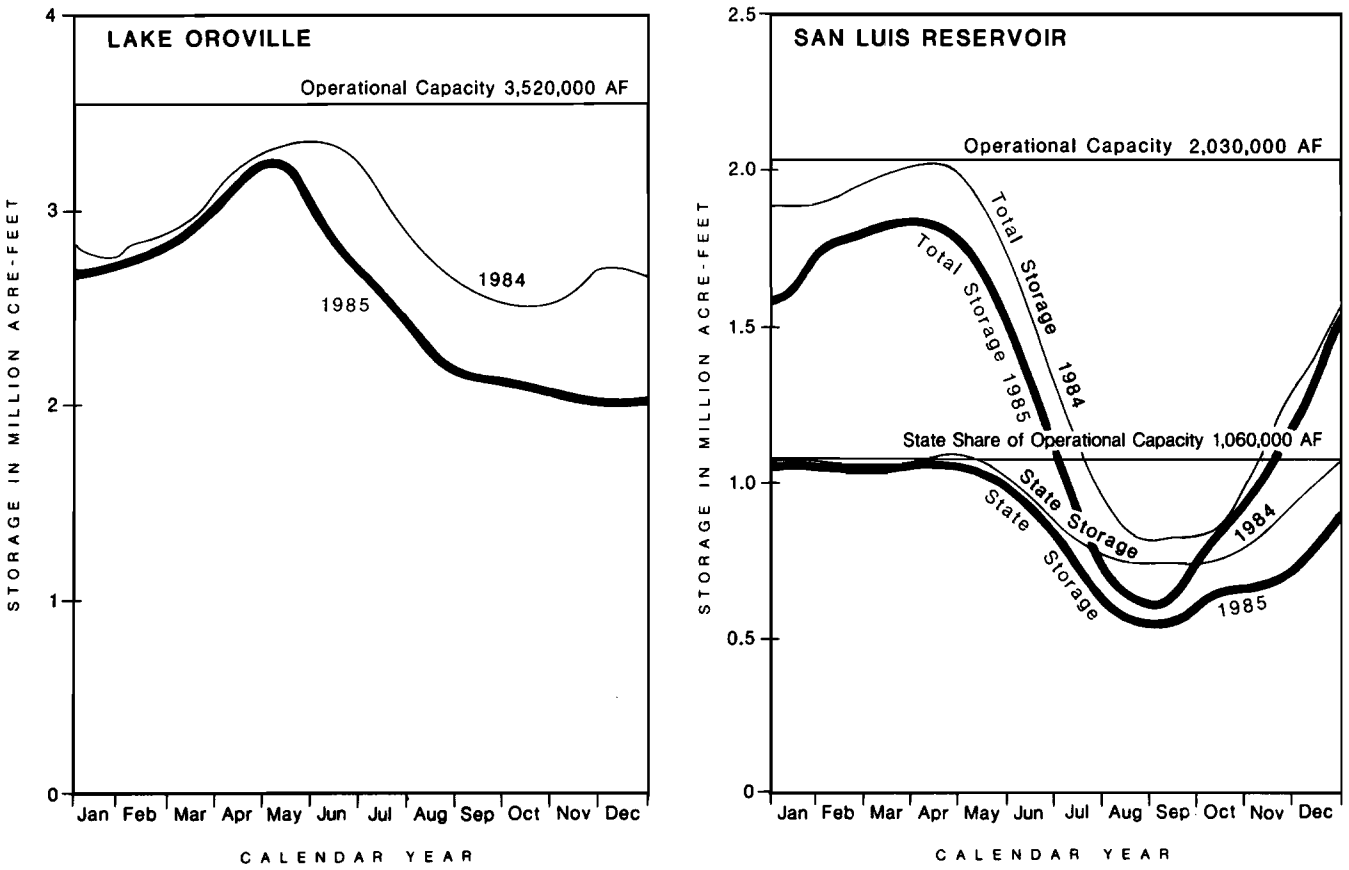


FIGURE 5: LAKE OROVILLE AND SAN LUIS RESERVOIR STORAGE



withdrawals and Delta exports to meet its share of in-basin uses and Delta outflow.

The draft Coordinated Operation Agreement between the USBR and DWR includes provisions for keeping account of water when an agency has released more water than its defined responsibility during periods of balanced water conditions. From November 1 through 14, DWR and the USBR agreed to suspend this accounting pursuant to Articles 6(h) and 6(i) of the draft agreement. These articles provide that whenever one party's available storage withdrawal or unstored water for export exceeds its export capability, the difference shall be available to the other party without affecting either party's future responsibilities.

Reservoir Operations

Lake Oroville and San Luis Reservoir are the major storage sites for SWP water supplies. Figure 5 compares the 1985 operations of these reservoirs with the previous year's operation. The filling of Lake Oroville roughly paralleled that during 1984 until late spring, when storage topped out at approximately 3,275,000 acre-feet, or 93 percent of normal maximum storage. At this point, storage proceeded to drop and continued dropping until November 23, 1985, when it reached a low of 1,989,000 acre-feet. This is the lowest storage in Lake Oroville since the 1976-77 drought. However, storage increased to 2,098,000 acre-feet by the end of the year.

San Luis Reservoir started the year at near capacity for State storage and at 78 percent of total storage. Total storage peaked on April 2 at 1,846,000 acre-feet. Drawdown was fairly gradual until the end of May, when federal demands could not be met through Delta pumping, resulting in a rapid drawdown of the federal share. State storage also was drawn down, but at a lesser rate. The minimum total storage of 578,000 acre-feet was reached at the end of August. Total San Luis Reservoir storage increased to 1,596,000 acre-feet (79 percent of maximum) by December 31, 1985.

As noted in previous bulletins, a recurring crack has appeared on the San Luis Dam roadway crest near the 1981 slide. This past year was no different. On July 31, 1985, the crest crack reappeared almost exactly a year after its previous occurrence. The initial discontinuous crack length was 135 feet and by August 22, had grown to 168 feet; the maximum width was 1/5 inch. The maximum width in 1984 was 3/4 inch, and the decrease in width could be an indication that the slide area is stabilizing. (See "Safety of SWP Facilities", Chapter IV.)

The 1985 operations of principal SWP reservoirs is summarized in Figure 6. Except for Lake Oroville, reservoir storage was near or above average at the end of the year. Earlier in the year, Lake Oroville reached its lowest level since the 1976-77 drought. Even though the end-of-year storage was an increase of more than 100,000 acre-feet over the minimum storage recorded, the amount was still at less than 60 percent full during a time of year when Lake Oroville is generally between 75 to 80 percent full.

The Division of Safety of Dams gave approval to operate Thermalito Afterbay from elevation 124.0 feet up to elevation 136.5 feet for one year, beginning August 13, 1985. The operating level of Thermalito Afterbay had been limited to a normal maximum of 128.0 feet and an absolute maximum of 131.0 feet since July 16, 1979, due to the recommendation of the Special Consulting Board for the Oroville Earthquake. The installed, temporary well point system was found to be operating as intended, with downstream

seepage pressures within acceptable limits.

Lake Del Valle storage is normally held to a maximum of 39,914 acre-feet between Memorial Day and Labor Day for recreation. In 1985, an additional 2,000 acre-feet of storage was approved during this period by the Corps of Engineers and the East Bay Park District, in response to a request from South Bay Aqueduct water contractors. The surcharge was used to alleviate water quality problems between August 2 and September 9, 1985, at which time normal seasonal drawdown began.

The following tabulation compares 1984 and 1985 year-end storage in the principal SWP reservoirs:

Reservoir & Operational Capacity (acre-feet)	Storage (acre-feet) 12/31/84	12/31/85
Lake Oroville 3,520,000	2,673,000	2,098,000
Lake Del Valle 40,000	26,000	25,000
San Luis Reservoir(a 1,062,000	1,061,000	907,000
Silverwood Lake 73,000	62,000	68,000
Lake Perris 127,000	124,000	115,000
Pyramid Lake 170,000	154,000	160,000
Castaic Lake 319,000	133,000	271,000
Total	4,233,000	3,644,000
Total Change	-589,000	

a) SWP Share

Aqueduct Operations

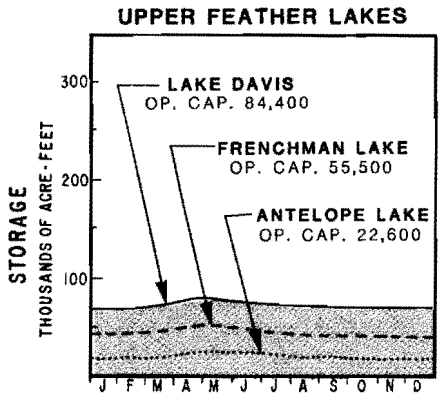
Figure 6 summarizes overall SWP operations in 1985, and shows the 1,519,000 acre-feet of CVP water that was conveyed through the San Luis Joint-Use Facilities to the federal San Luis service area. (DWR operates and maintains the joint-use facilities, the 102 miles of aqueduct between O'Neill Forebay and Kettleman City.)

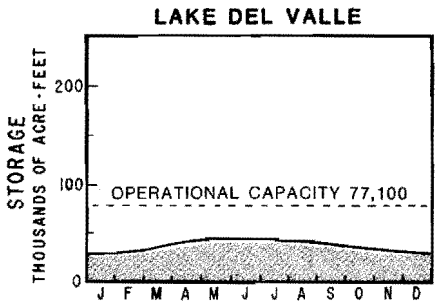
The South Bay Aqueduct was taken out of service from November 4-11 to repair the trashrack at the Dyer-Altamont check structure. During this period, there was limited service to South Bay Aqueduct water contractors from Lake Del Valle.

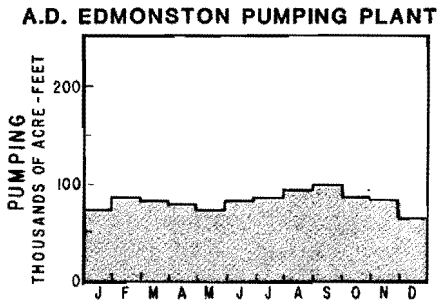
Several significant changes occurred at A. D. Edmonston Pumping Plant during 1985. Units 10, 12, and 14 began operation in January after the Division of Design and Construction gave its approval. This brought the plant up to the full complement of 14 operational pumps; however, Unit 13 had been out of service since 1982. (The even-numbered Units 2 through 14 are on the west discharge line, and odd-numbered Units 1 through 13 are on the east discharge line.) In July seal damage on Unit 9 effectively removed that unit from operation through the end of the year. This breakdown delayed the scheduled outage of the west discharge line until December, when Unit 13 came back into service, since at least six operational units were required to maintain pumping schedules.

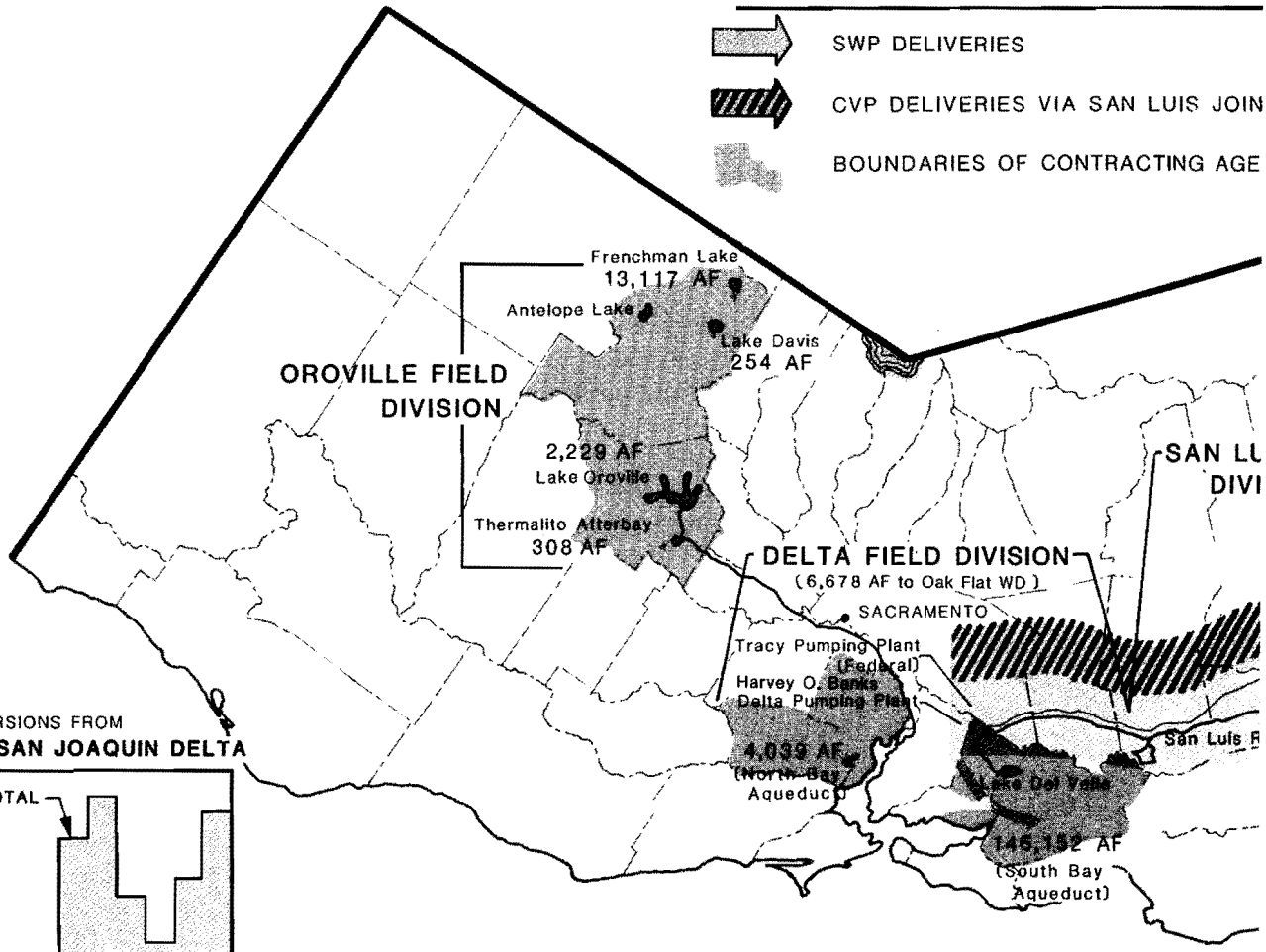
The connection between the First Los Angeles Aqueduct and the California Aqueduct, constructed in 1984 (Bulletin 132-85, page 47), was used on two occasions in 1985. The connection allows water to flow into the California Aqueduct from the First Los Angeles Aqueduct. During January, 984 acre-feet were delivered to the Antelope Valley-East Kern Water Agency via this connection while the East Branch was out of service for work on Alamo Powerplant. This water was returned to the Los Angeles Department of Water and Power (LADWP) via the MWDSC system, which is interconnected with LADWP's system. Because the replacement water had to pass through a

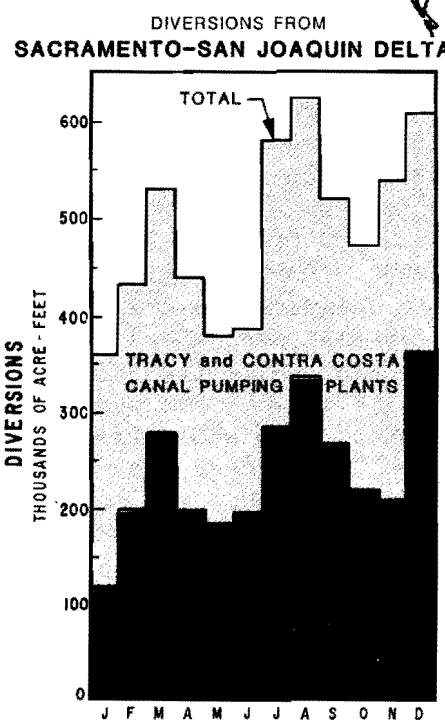
FIGURE 6: SUMMARY OF

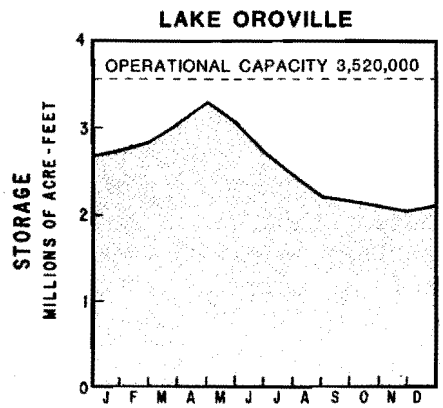


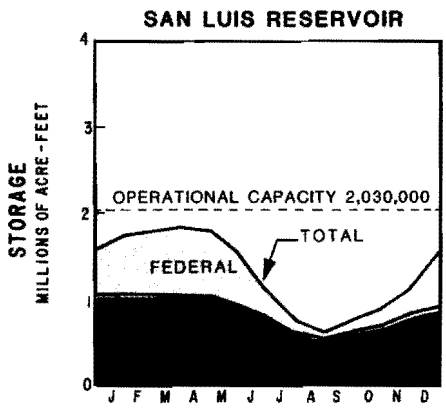




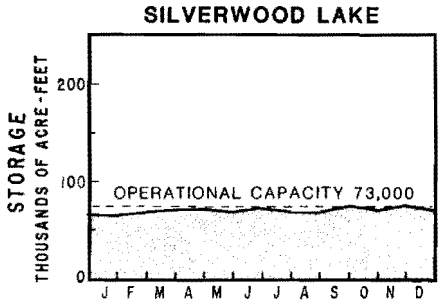


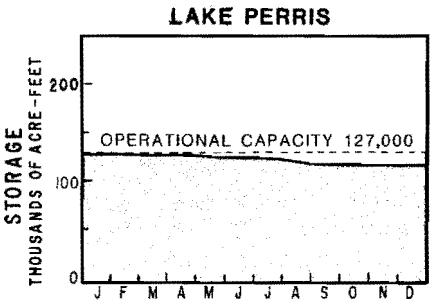




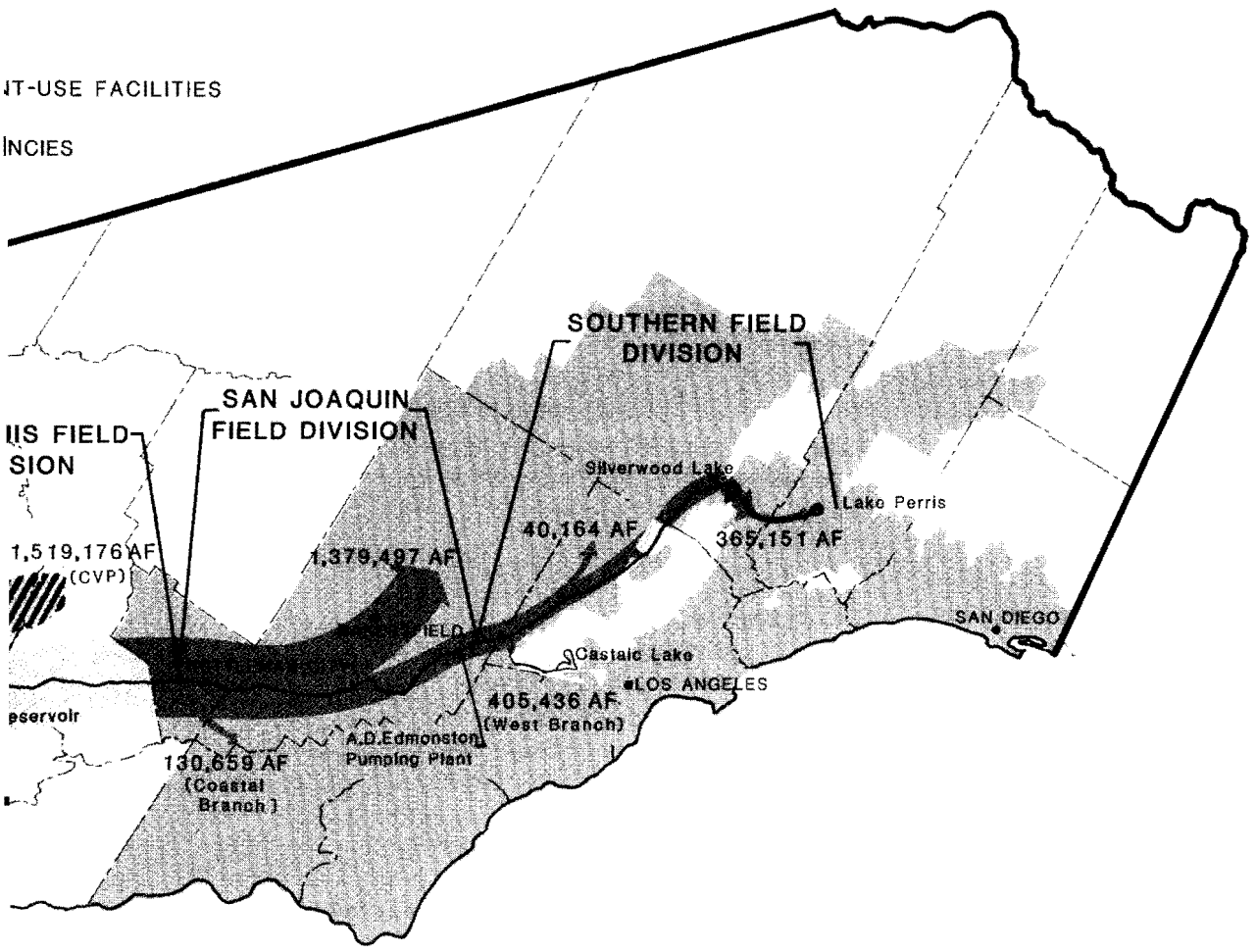


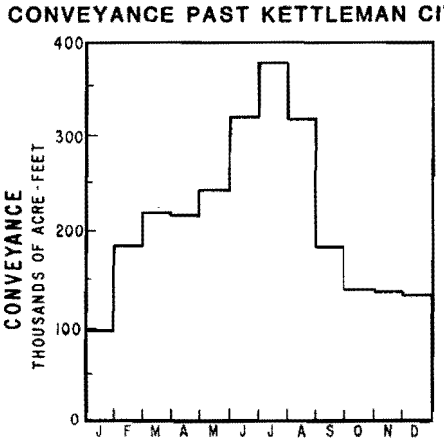
SWP OPERATIONS, 1985

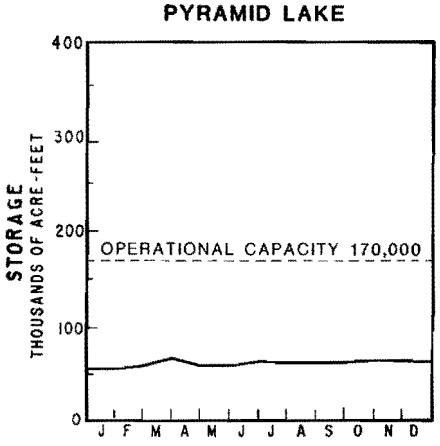


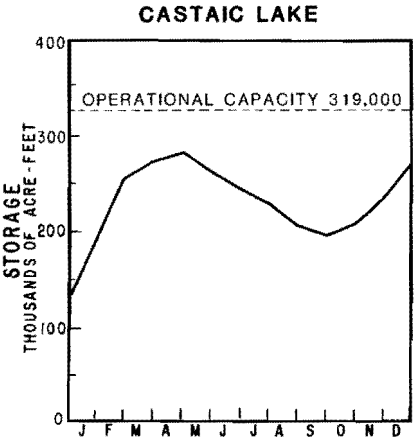


A PROJECT FACILITIES









MWDSC water treatment plant, DWR reimbursed MWDSC for treatment costs. DWR also supplied replacement energy to LADWP to compensate for generation foregone at its downstream power plants (about 980 kWh per acre-foot).

In late March, LADWP experienced an outage at its San Francisquito Powerplant No. 1. This reduced the amount of water available to the City of Los Angeles. To help offset this reduction (approximately 380 cfs), LADWP requested use of the connection during the outage. Between April 1 and July 1, 1985, about 43,500 acre-feet of LADWP water was delivered through the connection, and then through MWDSC's distribution system to LADWP's system. Long-term contracts covering the use of the connection are being negotiated by the three agencies.

Water Quality

Water quality standards, export limitations, and outflow requirements to protect beneficial uses in the Delta are set by the SWRCB's Decision 1485. This information, as well as a record of water quality monitoring in the Delta, appears annually in Appendix E to Bulletin 132. It is published separately under the title "Water Operations in the Sacramento-San Joaquin Delta."

The water year 1984-1985 was classified as "dry" under the Four Basin Index system, thus relaxing water quality standards under Decision 1485; all Decision 1485 standards were met in 1985 except the 14-day mean (14-dm) electrical conductivity (EC) standard of 0.45 milliSiemens per centimeter (mS/cm). The 14-dm EC was barely exceeded, at 0.46 mS/cm, for 4 days in mid-May at Emmaton on the Sacramento River.

The North Delta Water Agency contractual EC requirements at Emmaton were also exceeded in 1985. For 21 consecutive days, from November 12 through December 2, the maximum allowable 14-dm EC of 2.37 mS/cm was exceeded, reaching a high of 3.14 mS/cm on November 18. Delta outflow was increased in a successful effort to reduce EC values through the end of November. This effort was given further assistance by storm-induced higher outflows in early December.

Article 19 in SWP water supply contracts establishes water quality objectives, which are based upon the expected construction of an efficient cross-Delta transfer system. Some of these objectives were exceeded in 1985, due mostly to the lack of Delta facilities. During this dry year, water at the Delta Pumping Plant (at the head of the California Aqueduct) exceeded several Article 19 objectives, including percent sodium from July through December, chloride in November and December, and iron plus manganese in July and September. Monitoring sites farther down the Aqueduct showed similar water quality conditions.

Table 2 summarizes 1985 water quality conditions at key locations throughout the SWP system. The table also lists the monthly average water quality objectives set forth in Article 19 of the water supply contracts.

The Delta Outflow Index, a calculated value, is a relative measure of the net westerly flow of fresh water at Chipps Island near Pittsburg. Early in 1985, the Delta Outflow Index averaged slightly over 12,000 cfs, then declined gradually through the spring and summer months. The index measured 8,800 cfs in March, 6,900 cfs in April, and then was increased to 7,200 cfs in May to help reduce the salinity at Emmaton. The index continued to decline through the summer, reaching a low of just under 1,900 cfs in August. Delta outflows generally increased during the fall, and the index reached 8,400 cfs in December. At all times, Delta

TABLE 2: WATER QUALITY AT SELECTED STATIONS IN 1985

Station	Monthly Average	Concentrations (in parts per million unless otherwise noted)					
		Dissolved Solids	Total Hardness	Chlorides	Sulfates	Sodium(a (Percent)	Boron
Thermalito Afterbay	Minimum	49	32	1	2	17	0.0
Outlet to Feather River	Average	60	38	1	2	19	0.0
	Maximum	63	42	1	4	21	0.0
Sacramento-San Joaquin Delta	Minimum	183	76	37	28	44	0.1
Banks Delta Pumping Plant	Average	254	97	66	42	50	0.2
	Maximum	375	125	121	65	58	0.2
South Bay Aqueduct,	Minimum	167	80	25	26	37	0.1
Santa Clara Terminal Facility	Average	227	105	47	36	42	0.2
	Maximum	309	146	87	53	58	0.2
California Aqueduct:	Minimum	176	74	34	29	44	0.1
Entrance to O'Neill Forebay	Average	260	109	55	51	48	0.2
	Maximum	439	176	103	98	52	0.2
Outlet from O'Neill Forebay	Minimum	185	83	39	29	46	0.1
	Average	252	100	64	44	50	0.2
	Maximum	372	130	113	70	56	0.2
Near Kettleman City	Minimum	187	84	39	30	45	0.1
	Average	260	104	63	45	49	0.2
	Maximum	406	143	119	78	55	0.3
Coastal Branch near	Minimum	181	78	37	30	44	0.1
Devil's Den	Average	243	102	58	41	48	0.2
	Maximum	374	145	110	64	52	0.2
Near Buena Vista	Minimum	192	81	41	30	45	0.1
Pumping Plant	Average	263	106	64	47	49	0.2
	Maximum	426	148	125	92	56	0.2
At Tehachapi Afterbay	Minimum	171	78	32	29	43	0.1
	Average	223	99	53	40	48	0.2
	Maximum	327	131	97	68	54	0.3
At Pearblossom Pumping Plant	Minimum	156	68	25	23	46	0.1
	Average	227	91	55	38	50	0.2
	Maximum	366	116	110	65	57	0.4
Silverwood Lake, Outlet to	Minimum	157	72	26	25	40	0.1
San Bernardino Tunnel	Average	217	90	49	33	47	0.2
	Maximum	273	110	89	38	55	0.3
Lake Perris, Outlet from	Minimum	174	70	34	26	46	0.1
Santa Ana Pipeline	Average	197	77	39	33	49	0.2
	Maximum	221	82	43	37	52	0.3
Pyramid Lake, Entrance to	Minimum	208	92	28	37	37	0.2
Angeles Tunnel	Average	241	104	50	47	45	0.2
	Maximum	341	115	85	61	52	0.3
Castaic Lake, Outlet Tower	Minimum	238	121	29	62	31	0.2
	Average	267	136	37	78	37	0.3
	Maximum	305	162	52	99	43	0.3
Monthly Average Quality Objectives		440	180	110	110	50	0.6

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

outflow remained above the minimum needed to meet standards in Decision 1485, although the margins of compliance were not always large. Sacramento River flow at Rio Vista also remained above the minimum Decision 1485 levels.

Decision 1485 export limitations were met in 1985. The maximum permissible SWP export for June was increased from 3,000 cfs to 3,300 cfs by the SWRCB to compensate the Project for participating in the interagency controlled-flow study earlier in the spring.

The largest of the 1985 phytoplankton blooms in the Delta area occurred in the central Delta during mid-May. Chlorophyll levels approached 90 micrograms per liter (ug/l) at the peak of this bloom, which was composed almost entirely of the diatom melosira. Two later blooms in the central Delta were less concentrated, with chlorophyll levels reaching only 15-30 ug/l. The south Delta also experienced appreciable phytoplankton growth in 1985, but Suisun Bay algal growth was disappointing, producing only a single brief diatom bloom in early July, instead of the anticipated spring bloom.

During lower flow years, a rock barrier is installed across Old River at its confluence with the San Joaquin River. This is done to encourage upstream migration of salmon and steelhead by increasing fall flows in the lower San Joaquin River. The barrier was not used in 1985 because the Department of Fish and Game determined that all flows in the lower San Joaquin River would be sufficient to support salmon migration without the use of the Old River barrier.

Under the interagency Delta Health Aspects Monitoring Program, monthly water samples from the Delta and its various tributaries are analyzed for asbestos, sodium, pesticides, trihalomethanes, and other organic pollutants. Program results were published in May 1985, and the following conclusions were made:

- sodium concentrations in the Delta are generally below levels expected to cause health problems for anyone except those on severe sodium-restricted diets;
- no health threat exists to consumers from selenium levels found in Delta water supplies;
- although further monitoring of synthetic organic pollutants in Delta waters is needed, data collected so far indicate Delta water quality is good in this respect;
- fall 1984 samplings for targeted pesticides, those used most in lands that drain into the Delta, indicate these substances are not entering Delta waters in significant quantities; and
- San Joaquin River water is not currently a significant source of selenium to Delta water supplies, nor is this river higher in pesticide concentrations than other streams tributary to the Delta, such as the Sacramento River.

DWR continued routine monthly sampling of asbestos levels in California Aqueduct water during 1985. DWR's consultant, retained to evaluate the impact of asbestos on SWP water supplies, has completed identification of domestic water users downstream of the asbestos inflow source. Other studies, such as evaluating existing water treatment plants and estimating the cost of upgrading treatment facilities to achieve greater reductions in asbestos content, are largely complete. Monitoring of the treatment plants and data review are continuing.

Water Service

The following sections summarize 1985 water conveyance and deliveries via SWP facilities.

Total Water Conveyed

A total of 2,629,493 acre-feet of water was conveyed through SWP facilities in 1985. Table 3 summarizes total water conveyance for the 24 years of SWP operation, and shows the disposition of that water under the headings discussed in the following paragraphs.

Entitlement Water. The SWP water supply contracts, executed in the early 1960s, establish specific annual entitlement water amounts each long-term water contractor may request. The initial "Table A" schedules reflected each contractor's estimate of future water needs at the time the contracts were signed; some have subsequently been revised. Table B-4 in Appendix B presents complete 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 1962-85 period; actual entitlement deliveries by year are shown in Column (8).

DWR Is Helping To Alleviate Tom Paine Slough Problems

Water problems in Tom Paine Slough, in the South Delta, were exacerbated by the dry conditions during 1985. These dry conditions allowed for early planting and thereby promoted early diversions from the slough by South Delta agricultural users. At the same time, CVP and SWP diversions from the Delta were near maximum capacity, resulting in reduced water levels in the natural southern Delta channels. To reduce impacts on the southern Delta, SWP diversions to Clifton Court Forebay were limited to that portion of the tidal cycle with a minimal effect on the critical water levels.

SWP operations were not the only contributors to the Tom Paine water supply problems. Depth surveys of Tom Paine Slough and the natural channels leading to the control structure were conducted, and a diver inspected the inlet structure tide gates; investigations indicated that one of the two tide gates was operating incorrectly and that sedimentation restricted most of the channel. The local water district corrected the tide gate operation and DWR dredged a blockage in Tom Paine Slough. These corrective actions were effective until mid-July, when the agricultural water demands again exceeded the slough's diversion capability.

In late July, DWR installed both an 11-cfs pump and a 100-kW engine generator at the control structure to augment the water flow. This single pump was insufficient; two additional 11-cfs pumps and a 400-kW engine generator were installed and began operation on August 1. The three pumps were operated until September 5, 1985, when enough water entered Tom Paine Slough through normal tide gate action. The pumps and engine generator set were removed by mid-September.

Plans were developed for facilities or actions that would eliminate the need to install the pumps in 1986. Options include dredging a portion of Tom Paine Slough and installing a siphon at the control structure to eliminate future agricultural water supply problems.

TABLE 3: HISTORICAL SUMMARY OF ENTITLEMENTS,

Calendar Year	Annual Entitlements Under Long-Term Water Supply Contracts (Acre-Feet)(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(e
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	1,588,511(f
1985	3,760	1,250	145,800	1,031,749	21,138	1,852,149	3,055,846	2,001,053
Totals 1962-1985	31,170	5,250	2,296,438	10,462,174	52,660	15,463,801	28,311,493	19,395,376

a) From Table B-4.
b) Values include deliveries of SWP water to short-term contractors (Mustang Water District, 1970-1971; Tracy Golf and Country Club, 1974, 1979, and 1980; Green Valley Water District, 1974, 1975, 1978, 1979, 1980, and 1985; and Granite Construction Company, 1980).
c) Includes preconsolidation repayment water, 1977 emergency relief water, 1978 and 1982 exchange water, regulated delivery of local supply, non-SWP water delivered to Napa County FC&WCD through SWP facilities and conveyance of CVP water (including recreation water, fish and wildlife water, and Decision 1485 water).

In September of every year, each contractor furnishes an updated estimate of future requirements for SWP water. In the fall of 1984, 23 contractors requested delivery of 1,891,849 acre-feet of entitlement water in 1985 (including 29,140 acre-feet deferred from prior years). On January 4, 1985, DWR approved the initial schedule for 1985 water deliveries, based upon the 1985 rule curve criteria and the December 1, 1984, water supply forecast. The initial approval was for delivery of

DELIVERIES, AND WATER CONVEYED

Water Conveyed (Acre-Feet)							
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)	(16)
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
269,019	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	- 83,401	1,766	2,426,582	1979
404,557	46,459	1,980,765	0	- 30,453	2,131	1,952,443	1980
908,428	279,161	3,097,151	0	126,180	4,688	3,228,019	1981
215,873	154,886(e	2,120,783	0	136,555	4,646	2,261,984	1982
13,019	181,453	1,379,341	0	- 90,320	7,849	1,296,870	1983
262,917	380,591(f	2,232,019	0	- 1,690	7,040	2,237,369	1984
302,010	410,504	2,713,567	0	- 88,136	4,062	2,629,493	1985
5,736,149	2,840,052	27,971,577	1,833,697	102,485	49,876	29,957,635	Totals 1962-1985

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) diversions via the Kern River Intertie.

e) Revised and corrected from Bulletin 132-85 to reflect 557 acre-feet of 1978 exchange water (MWDSC Basin) changed from other water to municipal and industrial entitlement water.

f) Revised and corrected from Bulletin 132-85 to reflect 126 acre-feet of 1982 exchange water (MWDSC Basin) changed from other water to municipal and industrial entitlement water.

all requested 1985 entitlement water.

Actual entitlement water delivered in 1985 totaled 2,001,053 acre-feet to the 21 contractors accepting deliveries. (Two contractors took none of their scheduled water). Thirteen contractors took less entitlement water than initially requested, and four contractors took the amounts initially requested (their full Table A entitlements). The other four contractors, Antelope Valley-East Kern Water Agency (AVEKWA), Crestline-Lake

Arrowhead Water Agency (CLAWA), MWDSC, and San Gabriel Valley Municipal Water District (SGVMWD), increased their requested deliveries of entitlement water during the year. AVEKWA received 16 percent more than initially requested (5,235 acre-feet), CLAWA received 2 percent more (34 acre-feet), SGVMWD received 3 percent more (128 acre-feet), and MWDSC took delivery of almost 30 percent more (162,473 acre-feet).

Surplus Water. In September 1984, seven contractors submitted estimates indicating they could use a total of 383,995 acre-feet of surplus water during 1985. In December 1984, DWR committed to deliver the full amount of surplus water requested, based upon the initial 1985 rule curve analysis. Later, the approved surplus deliveries for October, November, and December were withdrawn due to dry weather conditions during the spring and summer months of 1985. Some contractors rescheduled the undelivered portions of their surplus water approved for delivery during January through September 1985 into October through February 1986.

Surplus water deliveries in 1985 totaled 302,010 acre-feet; six SWP contractors received 301,844 acre-feet and 166 acre-feet went to Green Valley Water District, a non-SWP contractor. Alameda County Water District requested, but did not take, surplus water in 1985. Dudley Ridge Water District, Kern County Water Agency, and Tulare Lake Basin Water Storage District received carry-over credits for 12,270 acre-feet of surplus water to be delivered in 1986.

Unscheduled Water. For 1985, no unscheduled water deliveries were made because enough surplus water was available as of January 1985 to satisfy all requests.

Other Water. Column (10) of Table 3 summarizes deliveries of several other types of water, as defined in the accompanying footnote. These are shown in more detail (for 1985) in Table 5, and described in the accompanying text later in this chapter under the heading "Total 1985 Water Deliveries."

Initial Fill Water. The quantities shown in Column (12) of Table 3 are the amounts used for initially filling aqueducts and reservoir storage space south of the Delta to maximum operational capacities. Initial filling began in 1962 with the first 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 quantities 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 and storable local inflow exceed storage additions plus replenishment of evaporation and seepage losses.

Recreation Water. Column (14) of Table 3 summarizes historic deliveries of "recreation water," which actually includes both water for use at SWP recreation facilities and water used for fish and wildlife mitigation and enhancement. In 1985, a total of 4,194 acre-feet was conveyed under this category, as follows:

- 1,910 acre-feet for public recreation facilities at Lake Del Valle, San Luis Reservoir, O'Neill Forebay, Silverwood, Pyramid, and Castaic lakes, and Lake Perris;

- 1,465 acre-feet released to maintain a trout fishery in Piru Creek, in accordance with a condition of the Federal Energy Regulatory Commission license for power development at Pyramid Lake;

- 334 acre-feet to replace water losses at Castaic Lagoon, an impoundment devoted entirely to recreation;

- 485 acre-feet conveyed to about 830 acres of wildlife mitigation lands located below O'Neill Forebay and at the Pilibos Wildlife Area (30 miles south of Los Banos).

Water Deliveries and Credits to Long-Term Contractors

Table 4 summarizes 1985 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.

Future Entitlement Delivery Credits (Makeup 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. In 1977, as a result of the drought, quantities of initially-scheduled water were reduced. Through these reductions, 21 long-term contractors gained credits for future delivery totaling 457,066 acre-feet. These credits for undelivered entitlement water under Articles 12(d) and 14(b) have been reduced by delivery of "makeup" water over the years; now only 10 contractors have remaining rights. No makeup water was delivered in 1985. As shown in Column (7) of Table 4, 128,116 acre-feet of credits for future deliveries remained available as of January 1, 1986 - 123,329 acre-feet under Article 12(d) and 4,787 acre-feet under Article 14(b).

Future Entitlement Delivery Credits (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. At the time of delivery, the sum of current annual entitlement, plus "wet-weather" water cannot, however, exceed a contractor's maximum annual entitlement.

Oak Flat Water District took delivery of its remaining 540 acre-feet of wet weather water in 1985. The District acquired the credit under Article 45 in 1982 and 1983. Tulare Lake Basin Water Storage District took 72,951 acre-feet of wet-weather water during 1985.

Also during 1985, two South Bay Aqueduct contractors acquired an additional 23,823 acre-feet of wet-weather credits under Article 7 of their water supply contracts. As of January 1, 1986, three contractors had credits totaling 273,759 acre-feet acquired under the wet-weather provisions of their contracts.

Future Entitlement 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. Oak Flat Water District made such an increase in 1972, and has retained its reduction credit of 2,466 acre-feet through 1985, as shown in Column (12) of Table 4.

TABLE 4: SUMMARY OF 1985 DELIVERIES AND CREDITS

Long-Term Water Supply Contractor	Water Deliveries in 1985 (acre-feet)						Future Entitlement Credits (acre-feet)					
	Entitlement Water Deliveries						Future Entitlement Delivery Credit as of January 1, 1986					Future Entitlement Reduction Credit Articles 7 or 45 (12)
	1985 Entitlement (1)	Entitlement Deferred from Prior Year (2)	Total Entitlement (1+2=3) (3)	Surplus Water Deliveries (4)	Other Water Deliveries (5)	Total Deliveries (3+4+5=6) (6)	Make-Up Water Per Articles 12(d) or 14(b) (7)	Wet Weather Water Per Articles 7 or 45 (8)	Carry-Over Water Per Ltr.Agrmnts. Dated 10/1/79 (9)	1985 Carry-Over Entitlement (10)	Total Delivery Credit (7+8+9) (11)	
UPPER FEATHER RIVER AREA												
County of Butte	308	-	308	-	-	308	-	-	-		-	-
Plumas County FC&WCD	254	-	254	-	-	254	-	-	-		-	-
SOUTH BAY AREA												
Alameda County FC&WCD, Zn 7	15,072	-	15,072	-	-	15,072	2,438	84,996	-		87,434	-
Alameda County WD	19,016	-	19,016	-	-	19,016	2,220	134,655	-		136,875	-
Santa Clara Valley WD	88,000	-	88,000	9,638	4,300(a	101,938	-	-	-		-	
SAN JOAQUIN VALLEY AREA												
County of Kings	3,400	-	3,400	-	-	3,400	-	0	-		0	-
Devil's Den WD	12,099	-	12,099	6,095	-	18,194	-	0	0	601	0	-
Dudley Ridge WD	46,251	-	46,251	7,636	8,122(c	62,009	-	-	-	949	-	-
Empire West Side ID	2,200	2,997(b	5,197	-	-	5,197	-	-	0	800	0	-
Green Valley WD(d	-	-	-	166	-	166	-	-	-		-	-
Kern County WA	888,896	-	888,896	180,824	14,029(e	1,083,749	-	-	-	26,104	-	-
Oak Flat WD	4,893	540(f	5,433	764	-	6,197	-	0	-	7	0	2,466
Tulare Lake Basin WSD	36,840	72,951	109,791	96,887	5,602(g	206,678	-	54,108	-	8,709	54,108	-
SOUTHERN CALIFORNIA AREA												
Antelope Valley-East Kern WA	37,064	-	37,064	-	-	37,064	14,841(h	-	-		14,841	-
Castaic Lake WA	12,401	-	12,401	-	-	12,401	500	-	-		500	-
Coachella Valley WD	16,989	-	16,989	-	-	16,989	-	-	-		-	-
Crestline-Lake Arrowhead WA	1,422	-	1,422	-	-	1,558	151	-	-		151	-
Desert WA	27,000	-	27,000	-	-	27,000	-	-	-		-	-
Littlerock Creek ID	0	-	0	-	-	0	438	-	-		438	-
Mojave WA	-	-	-	-	-	-	20	-	-		20	-
Palmdale WD	1,558	-	1,558	-	-	1,558	-	-	-		-	-
San Bernardino Valley MWD	7,390	-	7,390	-	-	7,390	4,269	-	-		4,269	-
San Gabriel Valley WD	5,028	-	5,028	-	-	5,028	1,000	-	-		1,000	-
The Metropolitan Water District of Southern California	698,484(i	-	698,484	-	0	698,484	102,239	-	-		102,239	-
Subtotal	1,924,565	76,488	2,001,053	302,010	26,451	2,329,514	128,116	273,759	0	37,170	401,875	2,466
NORTH BAY AREA												
Napa County FC&WCD(j	4,039	-	4,039	-	-	4,039	-	-	-		-	-
TOTAL ALL AREAS	1,928,604	76,488	2,005,092(k	302,010	26,451	2,333,553	128,116	273,759	0	37,170	401,875	2,466

a) CVP exchange water.
b) Carry-over storage of entitlement water under letter agreements dated October 1, 1979, with Devil's Den Water District and Empire West Side Irrigation District (EWSID). EWSID took 2,997 acre-feet during 1985, and was assessed an additional 3 acre-feet for its proportionate share of evaporation losses in Lake Oroville. As of January 1, 1986, neither contractor had storage credits available to them.
c) Includes 1982 exchange water; 1,821 acre-feet from Lake Oroville storage and 1,301 acre-feet of MWDSC exchange water. This also includes 5,000 acre-feet of 1978 MWDSC exchange water.
d) January and February 1985 delivery of surplus water to a non-long term contractor from unregulated flows in the Delta.
e) Includes 5,471 acre-feet of 1977 emergency relief water, and 8,588 acre-feet of 1978 exchange water, including 2,706 acre-feet of 1977 emergency relief water and 2,896 acre-feet of 1978 exchange water transferred to Tulare Lake Basin Water Storage District.
f) Article 45 wet-weather water.
g) 1977 emergency relief and 1978 exchange water transferred from KCWA (not included in totals).
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). Credits shown in this column for all other contractors are under Article 12(d) of their water supply contracts.
i) Includes 14,859 acre-feet of 1978 and 1982 exchange waters stored in MWDSC's ground water basin for Dudley Ridge Water District and Kern County Water Agency and recaptured by MWDSC in 1985.
j) Non-SWP water delivered to Napa County FC&WCD through SWP facilities; included here to match treatment in Appendix B.
k) Equals Table B5-B total for 1985 (plus 13,558 acre-feet of 1978 ground water exchange and 1,301 acre-feet of 1982 ground water exchange to MWDSC).

Future Entitlement Delivery Credits (Carry-Over Water). Both Empire West Side Irrigation District (EWSID) and Devil's Den Water District (DDWD) have reached their maximum annual entitlements. Therefore, EWSID is no longer able to exercise the delivery provisions of Article 45, while DDWD had not amended the wet-weather provisions into its contract prior to reaching maximum annual entitlement. EWSID and DDWD do, however, have temporary "carry-over" storage rights in either Lake Oroville or San Luis Reservoir under letter agreements executed on October 1, 1979.

At EWSID's request, a total of 3,000 acre-feet of undelivered 1984 entitlement water was stored in Lake Oroville as shown in Column (9) of Table 4 in Bulletin 132-85. During 1985, 2,997 acre-feet of this water was delivered to EWSID. EWSID was assessed 3 acre-feet for its proportionate share of evaporation losses at Lake Oroville. No carriage water losses were assessed on deliveries of this water, as no additional releases were needed above those required for export deliveries, fish mitigation, and power generation at the time this water was transported across the Delta to Clifton Court Forebay.

Future Entitlement Delivery Credits (1985 Carry-Over Water). During spring 1985, the lack of sufficient rainfall prompted fears of a possible drought similar to that experienced during 1976-77. In accordance with rule curve procedures requiring a minimum carry-over storage, DWR canceled scheduled surplus water deliveries, approved as of May 31, 1985, for October through December 1985. Precipitation continued to be below-normal during the fall of 1985, and DWR imposed deficiencies on the 1986 agriculture entitlement requests.

The precipitation that fell during late 1985 delayed the harvesting of crops and the application of pre-irrigation water from the contractors' remaining 1985 deliveries. Agreements executed in December allowed the carry over of 37,170 acre-feet of 1985 agricultural entitlement water and 12,270 acre-feet of 1985 agricultural surplus water for use during January and February 1986. Column (10) of Table 4 shows the delivery credits for entitlement water under these agreements. Surplus water carry-over credits were as follows:

	Acre-Feet
Dudley Ridge Water District	172
Kern County Water Agency	2,935
Tulare Lake Basin Water Storage District	9,163
Total	12,270

The agreements provided that the contractors receive delivery of this water on or before February 28, 1986. Carry-over surplus water was not to be delivered unless the contractor took the full approved amount of the 1985 carry-over entitlement and a minimum of 2 percent of the approved 1986 entitlement in January and 3 percent in February.

Also, both agreements provided for contractor payment of any identified cost increase that would otherwise be experienced by other SWP contractors or DWR as a result of activities under these agreements. All entitlement and surplus water carried over from 1985 was delivered during January and February of 1986.

Total 1985 Water Deliveries

During 1985, the SWP provided water service to 38 agencies. These included 22 long-term water contractors and 16 other agencies. Monthly deliveries to each of the 38 agencies, shown in Table 5, are summarized as follows:

- 2,001,053 acre-feet of 1985 entitlement water to 21 long-term contractors, including 14,859 acre-feet recaptured by MWDSC from its

ground water system in exchange for water stored in 1978 and 1982 for Dudley Ridge Water District and Kern County Water Agency. Only ten contractors took their full contract entitlement. The twenty-second contractor, Napa County Flood Control and Water Conservation District, only received non-Project water delivered through SWP facilities;

- 73,491 acre-feet of entitlement water to two long-term contractors deferred from 1983 under the wet-weather provisions (Article 45 of their contracts);
- 2,997 acre-feet of entitlement water from carry-over storage to one long-term contractor;
- 301,844 acre-feet of surplus water to six long-term contractors;
- 166 acre-feet of surplus water to one noncontractor;
- 5,471 acre-feet of 1977 emergency relief water to one long-term contractor;
- 13,558 acre-feet of 1978 exchange water to three long-term contractors;
- 3,122 acre-feet of 1982 exchange water to one long-term contractor;
- 25,320 acre-feet of regulated local supply to two long-term contractors and two noncontractors;
- 4,300 acre-feet of federal water transported to two long-term contractors;
- 4,039 acre-feet of non-Project water to one long-term contractor;
- 159,658 acre-feet of CVP water transported to nine Cross Valley Canal contractors and to four annual contractors in the San Joaquin Valley; and
- 195,036 acre-feet of CVP water conveyed to O'Neill Forebay to replace curtailed CVP pumping during May and June in accordance with SWRCB Decision 1485.

Table 5 shows monthly deliveries of each type of water conveyed in 1985, 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.

1977 Emergency Relief Water. At the end of 1977, the SWP had 95,176 acre-feet of water in storage for emergency relief of drought conditions. In 1978, when it became apparent that the 1976-77 drought was over, the stored water was sold. Two non-SWP contractors, (Green Valley Water District and Tracy Golf and Country Club) purchased a total of 650 acre-feet and took delivery of the water in 1978 and 1979.

Kern County Water Agency (KCWA) purchased the remaining 94,526 acre-feet of stored water for delivery before December 31, 1983. At KCWA's request, the agreement was amended to extend the delivery deadline to December 31, 1986. On January 1, 1985, the balance was 13,421 acre-feet and during 1985 KCWA took delivery of 2,765 acre-feet of this water and transferred 2,706 acre-feet to Tulare Lake Basin Water Storage District (TLBWSD). Thus, the total delivery of KCWA's 1977 emergency relief water during 1985 was 5,471 acre-feet, leaving a balance of 7,950 acre-feet as of January 1, 1986.

1978 Exchange Water. As described in Bulletin 132-84 (page 46), DWR acquired 30,000 acre-feet of water in 1978 through an exchange agreement with

MWDSC. Under subsequent agreements that water was sold; KCWA purchased 25,000 acre-feet and Dudley Ridge Water District (DRWD) purchased the remaining 5,000 acre-feet.

The original agreement required use of the 1978 exchange water prior to March 31, 1983. Under additional agreements, the delivery deadline was extended to July 31, 1986. During 1985, DRWD took delivery of all 5,000 acre-feet of its 1978 exchange water. KCWA took delivery of 5,662 acre-feet of its 1978 exchange water during 1985, and transferred an additional 2,896 acre-feet to TLBWSD. As of January 1986, KCWA had a balance of 15,885 acre-feet of undelivered 1978 exchange water.

1982 Exchange Water. Under the 1982 exchange agreements described in Chapter III, Dudley Ridge Water District (DRWD) took delivery of all 3,122 acre-feet of its 1982 exchange water during 1985. DRWD took 1,821 acre-feet stored in Lake Oroville, and 1,301 acre-feet stored in a MWDSC ground water basin. To complete the exchange, MWDSC was billed for the 1,307 acre-feet of 1982 exchange water at the variable OMP&R rate charged at the time the water was stored.

Regulated Delivery of Local Supply. SWP facilities are also used to transport non-Project water for long-term SWP contractors and for other agencies under various agreements to honor local water rights. Some of this water simply passes through SWP transportation facilities; some is stored in SWP reservoirs for release later in the year, under agreements by which the water right holders pay storage fees. In 1985, a total of 25,320 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 (NCFC&WCD). Pending completion of Phase II of the North Bay Aqueduct, NCFC&WCD receives interim water from the USBR's Solano Project, transported by Solano Irrigation District to Reach 3B of the North Bay Aqueduct. From there the water is pumped through interim pumping facilities near Cordelia and transported through SWP facilities to the terminus. During 1985, NCFC&WCD received 4,039 acre-feet of Solano Project water.

Preconsolidation Repayment Water. DWR entered into two contracts during 1964 to obtain water to preconsolidate land within the right of way of the California Aqueduct. This water was to be paid back upon request after the Aqueduct began service. The contracts, which have changed hands over the years, are currently held by Shell California Production, Inc. (Shell), and the J. G. Boswell Company (Boswell). The original contracts expired December 31, 1984. As described in Chapter III, agreements were completed in 1985 to extend the period for return of preconsolidation water through December 31, 1994. No preconsolidation repayment water was requested in 1985. The remaining balances are 23,689 acre-feet to Shell and 14,170 acre-feet to Boswell.

Conveyance and Transportation of CVP Water. During 1985, four arrangements for conveying CVP water through SWP facilities were in effect. In each arrangement the USBR provided the electrical energy required for moving the water through the Banks Delta Pumping Plant and, if needed, the Dos Amigos Pumping Plant.

- An August 30, 1985 exchange agreement between DWR and the USBR provided for DWR to transport up to 12,800 acre-feet of CVP water to O'Neill Forebay in exchange for 12,000 acre-feet of CVP water delivered to Santa Clara Valley Water District (SCVWD). DWR ultimately transported 4,587 acre-

TABLE 5: MONTHLY

(in 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	0
	County of Butte:							
2.	Entitlement Water	0	21	151	60	7	26	11
	Last Chance Creek Water District:							
3.	Regulated Delivery of Local Supply	0	0	0	0	3,120	3,656	3,094
	Plumas County Flood Control and Water Conservation District:							
4.	Entitlement Water	0	0	1	1	57	58	58
	Thermalito Irrigation District:							
5.	Regulated Delivery of Local Supply	83	79	86	173	291	331	350
6.	AREA TOTAL	83	100	238	234	3,475	4,071	3,513
	NORTH BAY AREA							
	Napa County Flood Control and Water Conservation District:							
7.	Non-SWP Water via SWP Facilities	665	345	147	222	271	283	287
	Solano County Flood Control and Water Conservation District:							
8.	Entitlement Water	0	0	0	0	0	0	0
9.	AREA TOTAL	665	345	147	222	271	283	287
	SOUTH BAY AREA							
	Alameda County Flood Control and Water Conservation District, Zone 7:							
10.	Entitlement Water	259	2	6	571	990	2,372	2,932
11.	Regulated Delivery of Local Supply	672	1,039	1,208	1,228	1,223	325	0
12.	Agency Total	931	1,041	1,214	1,799	2,213	2,697	2,932
	Alameda County Water District:							
13.	Entitlement Water	698	91	0	611	768	2,468	3,763
14.	Regulated Delivery of Local Supply	730	878	738	0	525	402	0
15.	Agency Total	1,428	969	738	611	1,293	2,870	3,763
	Santa Clara Valley Water District							
16.	Entitlement Water	4,400	4,400	5,765	8,386	9,580	9,680	9,425
17.	Surplus Water	3,394	2,728	2,551	480	0	485	0
18.	Central Valley Project Exchange Water	0	0	0	0	0	0	0
19.	Agency Total	7,794	7,128	8,316	8,866	9,580	10,165	9,425
20.	Recreation/Fish and Wildlife Water	4	4	4	7	13	19	29
21.	AREA TOTAL	10,157	9,142	10,272	11,283	13,099	15,751	16,149
	SAN JOAQUIN VALLEY AREA SWP Water							
	County of Kings:							
22.	Entitlement Water	340	340	340	340	0	340	340
	Devil's Den Water District:							
23.	Entitlement Water	254	381	762	1,016	1,270	2,032	2,286
24.	Surplus Water	769	2,100	253	728	822	307	925
25.	Agency Total	1,023	2,481	1,015	1,744	2,092	2,339	3,211
	Dudley Ridge Water District:							
26.	Entitlement Water	944	1,416	2,832	2,799	6,285	8,496	8,496
27.	Surplus Water	594	391	104	0	1,864	212	3,466
28.	1978 Exchange Water	0	0	700	250	800	1,000	1,000
29.	1982 Exchange Water (Oroville Storage)	0	0	0	0	0	599	1,022
30.	1982 Exchange Water (MWDSC Basin)	0	0	0	0	500	801	0
31.	Agency Total	1,538	1,807	3,636	3,049	9,449	11,108	13,984
	Empire West Side Irrigation District:							
32.	Entitlement Water	0	0	0	526	120	403	711
33.	Carry-over Water	277	1,189	782	749	0	0	0
34.	Agency Total	277	1,189	782	1,275	120	403	711

WATER DELIVERIES IN 1985

(in acre-feet)

Month						1985 Contract Entitlement	1985 Entitlement Not Delivered	Net Cumulative (a Entitlement Not Delivered Through		Line No.
AUG	SEP	OCT	NOV	DEC	TOTAL			1984	1985	
0	0	0	0	0	0	1,700	1,700	1,600	3,300	1.
0	25	0	0	7	308	1,200	892	11,851	12,743	2.
2,108	670	370	99	0	13,117					3.
55	15	9	0	0	254	860	606	4,558	5,164	4.
335	181	166	73	81	2,229					5.
2,498	891	545	172	88	15,908	3,760	3,198	18,009	21,207	6.
286	287	275	352	619	4,039					7.
0	0	0	0	0	0	1,250	1,250	1,100	2,350	8.
286	287	275	352	619	4,039	1,250	1,250	1,100	2,350	9.
2,482	2,082	1,860	652	864	15,072	27,000	11,928	121,533	133,461	10.
93	89	59	422	343	6,701					11.
2,575	2,171	1,919	1,074	1,207	21,773					12.
3,916	2,946	984	921	1,850	19,016	30,800	11,784	221,359	233,143	13.
0	0	0	0	0	3,273					14.
3,916	2,946	984	921	1,850	22,289					15.
9,521	9,224	7,765	6,237	3,617	88,000	88,000	0	40,782	40,782	16.
0	0	0	0	0	9,638					17.
0	250	3,013	506	531	4,300					18.
9,521	9,474	10,778	6,743	4,148	101,938					19.
21	18	25	4	4	152					20.
16,033	14,609	13,706	8,742	7,209	146,152	145,800	23,712	383,674	407,386	21.
340	340	340	0	340	3,400	3,400	0	0	0	22.
2,793	523	6	307	469	12,099	12,700	601 (b	128 (c	729	23.
191	0	0	0	0	6,095					24.
2,984	523	6	307	469	18,194					25.
8,496	2,154	1,196	1,886	1,251	46,251	47,200	949 (b	0	949	26.
1,005	0	0	0	0	7,636					27.
0	250	700	0	300	5,000					28.
0	0	200	0	0	1,821					29.
0	0	0	0	0	1,301					30.
9,501	2,404	2,096	1,886	1,551	62,009					31.
430	10	0	0	0	2,200	3,000	800 (b	12,390 (c	10,193	32.
0	0	0	0	0	2,997					33.
430	10	0	0	0	5,197					34.

TABLE 5: MONTHLY WATER

(in acre-feet)

Line No.	Contracting Agency and Type of Service	Month JAN	FEB	MAR	APR	MAY	JUN	JUL
	Kern County Water Agency:							
35.	Entitlement Water	13,587	31,137	54,900	74,937	92,374	141,974	166,150
36.	Surplus Water	0	36,898	38,597	8,653	18,770	25,890	51,868
37.	1977 Emergency Relief Water	0	124	0	0	1,000	1,641	0
38.	1977 Emergency Relief Transferred to TLBWSD	0	0	0	0	0	0	0
39.	1978 Exchange Water	0	0	0	1,000	1,000	1,596	2,000
40.	1978 Exchange Water Transferred to TLBWSD	0	0	0	0	0	0	0
41.	Agency Total	13,587	68,159	93,497	84,590	113,144	171,101	220,018
	Oak Flat Water District:							
42.	Entitlement Water	0	114	326	772	1,052	898	883
43.	Article 45(e) Wet Weather Water	0	0	0	0	180	180	180
44.	Surplus Water	0	0	476	288	0	0	0
45.	Agency Total	0	114	802	1,060	1,232	1,078	1,063
	Tulare Lake Basin Water Storage District:							
46.	Entitlement Water	2,370	0	0	0	0	519	21,330
47.	Article 45(e) Wet Weather Water	0	3,555	7,110	9,480	11,850	18,441	0
48.	Surplus Water	2,480	12,897	8,112	6,648	9,175	13,298	10,439
49.	Water Transferred from KCWA	0	0	0	0	0	0	0
50.	Agency Total (excludes transferred water)	4,850	16,452	15,222	16,128	21,025	32,258	31,769
51.	Recreation/Fish and Wildlife Water	7	15	40	33	63	88	47
	Green Valley Water District:							
52.	Surplus Water	55	111	0	0	0	0	0
53.	AREA SUBTOTAL (SWP Water)	21,677	90,668	115,334	108,219	147,125	218,715	271,143
	SAN JOAQUIN VALLEY AREA							
	CVP Water							
	Green Valley Water District							
54.	Conveying CVP Water--Annual Contract	0	0	324	227	24	301	658
	Musco Olive Products, Inc.:							
55.	Conveying CVP Water--Annual Contract	3	1	1	4	0	4	1
	Tracy Golf and Country Club:							
56.	Conveying CVP Water--Annual Contract	0	21	14	43	54	80	62
	U. S. Fish and Wildlife Service:							
57.	Conveying CVP Water--Annual Contract	0	0	0	0	0	0	0
	U. S. Bureau of Reclamation:							
58.	Conveying CVP Water--Cross Valley Canal	208	0	10,566	21,365	14,814	14,410	10,674
59.	Conveying CVP Water--Decision 1485	1,446	0	26,154	0	0	0	97,523
60.	Conveying CVP Water--California Department of Fish and Game	0	0	0	0	0	0	0
61.	Conveying CVP Water--Recreation/U.S. Fish and Wildlife Service	4	13	34	28	51	70	46
62.	AREA SUBTOTAL (CVP Water)	1,661	35	37,093	21,667	14,943	14,865	108,964
63.	AREA SUBTOTAL (SWP Water)	21,677	90,668	115,334	108,219	147,125	218,715	271,143
64.	AREA TOTAL (CVP Plus SWP Water)	23,338	90,703	152,427	129,886	162,068	233,580	380,107
	CENTRAL COASTAL AREA							
	San Luis Obispo County Flood Control and Water Conservation District:							
65.	Entitlement Water	0	0	0	0	0	0	0
	Santa Barbara County Flood Control and Water Conservation District:							
66.	Entitlement Water	0	0	0	0	0	0	0
67.	AREA TOTAL	0	0	0	0	0	0	0
	SOUTHERN CALIFORNIA AREA							
	Antelope Valley-East Kern Water Agency:							
68.	Entitlement Water	779	748	2,116	3,594	4,819	5,203	5,966
	Castaic Lake Water Agency:							
69.	Entitlement Water	889	855	976	939	936	948	1,303
	Coachella Valley Water District:							
70.	Entitlement Water	0	1,415	1,557	1,557	1,557	1,557	1,557

DELIVERIES IN 1985 *(continued)*

(in acre-feet)

Month						1985 Contract Entitlement	1985 Entitlement Not Delivered	Net Cumulative (a Entitlement Not Delivered Through		Line No.
AUG	SEP	OCT	NOV	DEC	TOTAL			1984	1985	
161,905	49,487	37,638	32,783	32,024	888,896	915,000	26,104 (b	239,293 (c	265,397	35.
148	0	0	0	0	180,824					36.
0	0	0	0	0	2,765					37.
0	0	0	0	2,706	2,706					38.
66	0	0	0	0	5,662					39.
0	0	0	1,669	1,227	2,896					40.
162,119	49,487	37,638	34,452	35,957	1,083,749					41.
590	105	130	23	0	4,893	4,900	7 (b	1,180 (c	647	42.
0	0	0	0	0	540					43.
0	0	0	0	0	764					44.
590	105	130	23	0	6,197					45.
12,621	0	0	0	0	36,840	45,549	8,709 (b	127,059	62,817	46.
8,709	10,665	3,141	0	0	72,951					47.
3,204	9,769	0	5,679	15,186	96,887					48.
0	0	0	1,669	3,933	5,602					49.
24,534	20,434	3,141	5,679	15,186	206,678					50.
83	26	49	26	18	495					51.
0	0	0	0	0	166					52.
200,581	73,329	43,400	42,373	53,521	1,386,085	1,031,749	37,170	380,050	340,732	53.
614	18	9	0	0	2,175					54.
0	1	2	1	0	18					55.
72	49	45	15	8	463					56.
0	0	1,266	1,834	0	3,100					57.
21,936	8,436	6,395	6,880	9,804	125,488					58.
69,913	0	0	0	0	195,036					59.
0	0	0	14,382	13,618	28,000					60.
68	24	40	24	12	414					61.
92,603	8,528	7,757	23,136	23,442	354,694					62.
200,581	73,329	43,400	42,373	53,521	1,386,085	1,031,749	37,170	380,050	340,732	63.
293,184	81,857	51,157	65,509	76,963	1,740,779	1,031,749	37,170	380,050	340,732	64.
0	0	0	0	0	0	7,500	7,500	11,500	19,000	65.
0	0	0	0	0	0	13,638	13,638	20,022 (d	33,660	66.
0	0	0	0	0	0	21,138	21,138	31,522	52,660	67.
5,827	3,960	2,168	994	890	37,064	40,000	2,936	251,490	254,426	68.
1,316	1,223	1,154	938	924	12,401	29,100	16,699	141,689	158,388	69.
1,557	1,557	1,557	1,557	1,561	16,989	16,989	0	5,200	5,200	70.

TABLE 5: MONTHLY WATER

(in acre-feet)

Line No.	Contracting Agency and Type of Service	Month						
		JAN	FEB	MAR	APR	MAY	JUN	JUL
	Crestline-Lake Arrowhead Water Agency:							
71.	Entitlement Water	99	93	81	75	103	134	163
	Desert Water Agency:							
72.	Entitlement Water	0	2,250	2,475	2,475	2,475	2,475	2,475
	Littlerock Creek Irrigation District:							
73.	Entitlement Water	0	0	0	0	0	0	0
	Mojave Water Agency:							
74.	Entitlement Water	0	0	0	0	0	0	0
	Palmdale Water District:							
75.	Entitlement Water	2	9	15	28	42	45	50
	San Bernardino Valley Municipal Water District:							
76.	Entitlement Water	238	373	104	5	5	382	1,923
	San Gabriel Valley Municipal Water District:							
77.	Entitlement Water	0	0	0	66	0	0	0
	San Gorgonio Pass Water Agency:							
78.	Entitlement Water	0	0	0	0	0	0	0
	The Metropolitan Water District of Southern California:							
79.	Entitlement Water	7,478	9,291	42,816	58,460	80,270	75,892	96,200
80.	1978 Ground Water Exchange	0	0	700	1,250	1,800	2,596	3,000
81.	1982 Ground Water Exchange	0	0	0	0	500	801	0
82.	Agency Total	7,478	9,291	43,516	59,710	82,570	79,289	99,200
	Ventura County Flood Control District:							
83.	Entitlement Water	0	0	0	0	0	0	0
84.	Recreation/Fish and Wildlife Water	100	142	162	210	146	255	397
85.	AREA TOTAL	9,585	15,176	51,002	68,659	92,653	90,288	113,034
	ALL AGENCIES							
86.	Entitlement Water (1985)	32,337	52,936	115,223	157,218	202,710	255,902	326,022
87.	Deliveries Under Wet Weather Provisions	0	3,555	7,110	9,480	12,030	18,621	180
88.	Carry-over Water	277	1,189	782	749	0	0	0
89.	1978 Ground Water Exchange	0	0	700	1,250	1,800	2,596	3,000
90.	1982 Ground Water Exchange	0	0	0	0	500	801	0
91.	SUBTOTAL (Entitlement Water Delivered)	32,614	57,680	123,815	168,697	217,040	277,920	329,202
92.	Surplus Water	7,292	55,125	50,093	16,797	30,631	40,192	66,698
93.	1977 Emergency Relief Water	0	124	0	0	1,000	1,641	0
94.	1978 Exchange Water	0	0	700	1,250	1,800	2,596	3,000
95.	1982 Exchange Water	0	0	0	0	500	1,400	1,022
96.	Central Valley Project Exchange Water	0	0	0	0	0	0	0
97.	1977 Emergency Relief Transferred to TLBWSD	0	0	0	0	0	0	0
98.	1978 Exchange Water Transferred to TLBWSD	0	0	0	0	0	0	0
99.	Recreation/Fish and Wildlife Water	111	161	206	250	222	362	473
100.	SUBTOTAL (SWP WATER)	40,017	113,090	174,814	186,994	251,193	324,111	400,395
101.	Regulated Delivery of Local Supply	1,485	1,996	2,032	1,401	5,159	4,714	3,444
102.	Non-SWP Water to Napa County FC&WCD	665	345	147	222	271	283	287
103.	Conveying CVP Water--Annual Contracts	3	22	339	274	78	385	721
104.	Conveying CVP Water--Cross Valley Canal	208	0	10,566	21,365	14,814	14,410	10,674
105.	Conveying CVP Water--Decision 1485	1,446	0	26,154	0	0	0	97,523
106.	Conveying CVP Water--California Department of Fish and Game	0	0	0	0	0	0	0
107.	Conveying CVP Water--Recreation/Fish and Wildlife Water	4	13	34	28	51	70	46
108.	TOTAL WATER	43,828	115,466	214,086	210,284	271,566	343,973	513,090

a) This column includes entitlement not delivered, deferred or otherwise, whether or not the water contractor has received any remuneration.
b) This amount was delivered as carry-over entitlement water in January/February 1986.
c) Corrected from Bulletin 132-85 to compensate for entitlements not delivered prior to 1971, and which were omitted inadvertently in earlier bulletins.

DELIVERIES IN 1985 *(continued)* (in acre-feet)

Month						1985 Contract Entitlement	1985 Entitlement Not Delivered	Net Cumulative (a Entitlement Not Delivered Through		Line No.
AUG	SEP	OCT	NOV	DEC	TOTAL			1984	1985	
180	143	130	110	111	1,422	4,350	2,928	17,220	20,148	71.
2,475	2,475	2,475	2,475	2,475	27,000	27,000	0	8,000	8,000	72.
0	0	0	0	0	0	1,730	1,730	7,699	9,429	73.
0	0	0	0	0	0	39,000	39,000	231,994	270,994	74.
343	292	285	295	152	1,558	14,180	12,622	110,820	123,442	75.
2,085	1,436	506	297	36	7,390	81,500	74,110	587,847	661,957	76.
0	0	1,183	2,101	1,678	5,028	21,800	16,772	138,639	155,411	77.
0	0	0	0	0	0	11,800	11,800	44,000	55,800	78.
97,096	80,727	67,135	45,865	22,395	683,625	1,558,700	860,216	4,972,149 (e	5,832,365	79.
66	250	700	1,669	1,527	13,558					80.
0	0	0	0	0	1,301					81.
97,162	80,977	67,835	47,534	23,922	698,484					82.
0	0	0	0	0	0	6,000	6,000	15,000	21,000	83.
905	527	459	69	43	3,415					84.
111,850	92,590	77,752	56,370	31,792	810,751	1,852,149	1,044,813	6,531,747	7,576,560	85.
314,028	158,724	126,521	97,441	70,644	1,909,706	3,055,846	1,131,281	7,346,102	8,400,895	86.
8,709	10,665	3,141	0	0	73,491					87.
0	0	0	0	0	2,997					88.
66	250	700	1,669	1,527	13,558					89.
0	0	0	0	0	1,301					90.
322,803	169,639	130,362	99,110	72,171	2,001,053					91.
4,548	9,769	0	5,679	15,186	302,010					92.
0	0	0	0	0	2,765					93.
66	250	700	0	300	10,662					94.
0	0	200	0	0	3,122					95.
0	250	3,013	506	531	4,300					96.
0	0	0	0	2,706	2,706					97.
0	0	0	1,669	1,227	2,896					98.
1,009	571	533	99	65	4,062					99.
328,426	180,479	134,808	107,063	92,186	2,333,576					100.
2,536	940	595	594	424	25,320					101.
286	287	275	352	619	4,039					102.
686	68	1,322	1,850	8	5,756					103.
21,936	8,436	6,395	6,880	9,804	125,488					104.
69,913	0	0	0	0	195,036					105.
0	0	0	14,382	13,618	28,000					106.
68	24	40	24	12	414					107.
423,851	190,234	143,435	131,145	116,671	2,717,629	3,055,846	1,131,281	7,346,102	8,400,895	108.

d) Revised and corrected from Bulletin 132-85 to reflect Amendment 9 (August 31,1981) which changed Table A entitlements.

e) Revised and corrected from Bulletin 132-85 to reflect a total of 683 acre-feet of 1978 and 1982 Exchange Water (MWDSC basin) recaptured in 1982 and 1984.

feet to O'Neill Forebay in exchange for 4,300 acre-feet delivered to SCVWD. DWR transported more water than it received because the SWP transportation service charge is slightly less than the USBR's charge for the water. The water to SCVWD was used as a supplement to, not as a substitute for, SWP water. SCVWD paid for energy required to transport this water through the South Bay Pumping Plant (at the rates charged for pumping SWP surplus water).

- The USBR and DWR have three-party contracts with nine local agencies; the contracts provide for transportation of CVP water through SWP facilities to KCWA's Cross Valley Canal through 1995. Another contract between DWR and the USBR provides that the USBR will furnish the electrical energy needed for pumping the CVP water at the Banks Delta Pumping Plant for these nine Cross Valley Canal contractors. DWR's charges under the nine contracts are for use of SWP facilities to transport water from the Delta to O'Neill Forebay and from Reach 8C, the first repayment reach beyond the joint-use facilities, to the Cross Valley Canal in Reach 12E.

  The SWP began transportation service for the Cross Valley Canal contractors in 1976; during 1985, 125,488 acre-feet of water was transported. Article 4(b) of the three-party contracts allows the contractors to request deliveries greater than what is provided in the contracts if additional supplies of water and delivery capacity are available. During 1985, DWR conveyed 38,102 acre-feet to Pixley Irrigation District, which exceeds its contractual limit by 7,000 acre-feet. Part of the water delivered to the Cross Valley Canal (39,105 acre-feet) was released from the State's



The California Aqueduct winds its way through a patchwork of California agricultural land.

share of San Luis Reservoir storage in accordance with April 24, 1985 letter agreements between DWR and three Cross Valley Canal contractors. The deliveries from storage were made during May, June, and July, when there was insufficient conveyance capacity available for transporting CVP water. This was due to curtailment of SWP pumping from the Delta in accordance with the SWRCB's Decision 1485. The USBR returned the water released from storage to the State later in the year.

- Under the annual conveyance agreement executed February 20, 1985, DWR conveyed water to four USBR annual contractors. On August 9, 1985, this agreement was extended through February 28, 1986 (with new transportation service rates set for 1986). A total of 2,656 acre-feet was conveyed to Green Valley Water District, Musco Olive Products, Inc., and Tracy Golf and Country Club in 1985. This agreement was amended on October 11, 1985, to convey 3,100 acre-feet during November and December from O'Neill Forebay to Reach 10A for the U. S. Fish and Wildlife Service. The water was transported by Buena Vista Water Storage District to the Kern National Wildlife Refuge.

  As part of this annual contract, the USBR agreed to provide its share of water to meet Delta water quality requirements and to curtail its Delta exports in accordance with Decision 1485. This agreement also provides that the SWP would furnish conveyance capacity from the Delta to replace the May and June curtailment of CVP pumping. (Decision 1485 curtails both CVP and SWP pumping from the Delta during May, June, and July to protect striped bass, but the July curtailment does not restrict existing CVP pumping capability.) A total of 195,036 acre-feet of CVP water was conveyed in 1985 of which 27,600 acre-feet were to replace capacity foregone during May and June 1984, and 167,436 acre-feet during May and June 1985.

- An agreement executed October 24, 1985, provided for the transporting of 28,000 acre-feet of CVP water from the Delta to O'Neill Forebay for the Department of Fish and Game/U. S. Fish and Wildlife Service for wildlife habitat purposes in the Grasslands area. This water, delivered in November and December 1985, is shown in Table 5, separate from the 3,100 acre-feet mentioned in the preceding description.

Power Operations

DWR began operation as a bulk power agency in April 1983. As such, DWR operates a mix of owned, contracted, and purchased power resources to meet SWP needs via contracted transmission capacity. This was DWR's second full year as a bulk power agency.

Energy Use

Table 6 summarizes monthly SWP energy use at SWP plants during 1985. Total energy use and losses for the year were 5.52 billion kWh, approximately 52 percent more than what was used in 1984. This increased energy use reflected increased water deliveries to SWP contractors. Total SWP water deliveries in 1985 increased about 22 percent over 1984; deliveries to Southern California (which require the greatest amount of energy) increased by nearly 44 percent. SWP energy use was nearly evenly distributed between the two major power service areas: Pacific Gas and Electric Company (PGandE) and Southern California Edison Company (SCE). About 2.68 billion kWh were

TABLE 6: MONTHLY

(in millions of kilowatthours)

ITEM	MONTH						
	JAN	FEB	MAR	APR	MAY	JUN	JUL
ENERGY USED BY SWP PUMPING AND POWER PLANTS							
Hyatt-Thermalito Pumpback and Station Service	0.51	0.47	0.53	24.10	0.56	0.26	5.30
North Bay Interim Pumping Plant	0.38	0.21	0.07	0.12	0.15	0.16	0.16
South Bay Pumping Plant	8.33	9.16	12.17	12.30	12.92	13.54	14.73
Del Valle Pumping Plant	0.01	0.10	0.25	0.21	0.15	0.01	0.01
Harvey O. Banks Delta Pumping Plant	28.16	60.61	64.27	56.88	55.11	58.41	55.44
San Luis Pumping-Generating Plant (SWP Share)	1.06	0.31	1.22	3.86	0.14	0.18	7.66
Dos Amigos Pumping Plant (SWP Share)	12.95	25.21	26.28	26.35	30.38	41.96	49.15
Buena Vista Pumping Plant	18.59	23.55	25.88	23.37	23.49	28.67	31.23
Wheeler Ridge Pumping Plant	21.10	24.46	24.82	24.72	23.43	25.85	28.24
Chrisman Wind Gap Pumping Plant	47.11	55.04	54.42	52.89	49.03	53.96	58.97
A. D. Edmonston Pumping Plant	167.24	194.87	190.94	183.40	169.06	186.09	201.35
Pearblossom Pumping Plant	0.57	8.14	18.15	28.46	33.88	34.71	34.05
Devil Canyon Powerplant (Station Service)	0.10	0.02	0.00	0.00	0.00	0.00	0.00
Oso Pumping Plant	20.46	19.92	15.06	13.52	9.08	10.42	8.58
William E. Warne Powerplant (Station Service)	0.03	0.02	0.06	0.05	0.05	0.03	0.02
Las Perillas Pumping Plant (SWP Share)	0.30	0.56	0.62	1.02	1.43	1.72	1.98
Badger Hill Pumping Plant	0.95	1.45	1.59	2.77	3.96	4.66	5.25
Subtotal	327.85	424.10	436.33	454.02	412.82	460.63	502.12
System Losses and Unaccounted for Energy	15.45	12.97	16.69	17.07	6.58	0.87	5.29
Total	343.30	437.07	453.02	471.09	419.40	461.50	507.41
SWP ENERGY SOURCES							
Hyatt-Thermalito Powerplants	81.48	98.75	93.45	123.00	285.39	285.71	264.98
San Luis Pumping-Generating Plant (SWP Share)	0.00	-.01	-.01	6.41	16.97	35.51	44.45
Devil Canyon Powerplant	2.59	7.84	24.22	47.67	60.96	56.63	65.42
William E. Warne Powerplant	41.47	40.73	30.84	27.87	19.19	20.68	18.69
Castaic Powerplant (SWP Share)	65.95	66.96	49.72	41.71	30.62	31.44	29.71
Bottle Rock Powerplant	-.21	0.55	9.84	22.37	23.32	-.18	-.39
Reid Gardner Unit No. 4	156.04	157.30	128.99	150.03	170.97	160.56	169.30
Pine Flat Powerplant	-.07	14.06	25.35	25.96	51.51	111.70	92.08
TERA Power Corporation	-.01	0.29	0.92	1.31	2.15	1.63	1.92
MWDSC Hydroelectric Plants (Exchange Energy)	7.00	5.13	12.81	18.74	19.64	18.71	17.81
Power Exchange Delivered to SCE	-42.14	-49.47	-67.28	-121.09	-195.35	-186.73	-181.78
Power Exchange Received from SCE	197.59	234.53	283.20	229.26	183.48	192.08	194.87
Energy Exchange Pacific Gas and Electric Company	0.00	0.00	0.00	0.00	4.00	0.00	0.00
Energy Exchange Southern California Edison Company	0.00	0.00	0.00	0.00	0.00	0.00	-8.63
Energy Exchange Salt River Project	0.00	0.00	0.00	0.00	0.00	-1.28	-7.20
SCE-SBVMWD Exchange	0.00	0.00	0.00	0.00	-.10	-.14	-.16
USBR 1982 Exchange Return	0.00	2.30	4.90	0.57	3.45	0.00	0.00
USBR Schedule Excess	0.31	0.10	0.33	0.08	0.12	0.04	0.00
LADWP Delivery Due to East Branch Outage	0.00	0.00	-4.02	0.00	0.00	0.00	0.00
Purchases							
British Columbia Hydro Power Authority	0.00	0.00	5.54	0.00	3.17	15.15	44.21
Bonneville Power Authority	27.90	54.95	3.15	0.00	203.97	51.84	0.00
Idaho Power Company	0.00	0.00	0.00	0.00	0.00	1.86	0.00
Montana Power Company	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Portland General Electric Company	74.40	67.20	74.40	70.88	0.00	111.00	120.33
Pacific Power and Light Company	116.18	78.98	112.09	141.95	9.14	22.19	2.72
Seattle City Light	0.00	0.00	0.00	0.00	0.00	1.26	0.18
Salt River Project	0.00	0.00	5.64	0.00	0.00	0.00	0.00
Washington Water Power Company	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	728.48	780.19	794.08	786.72	892.60	929.66	868.51
Less Sales	385.18	343.12	341.06	315.63	473.20	468.16	361.10
Total	343.30	437.07	453.02	471.09	419.40	461.50	507.41

used by SWP plants in PGandE's service area, compared with 2.73 billion kWh used in SCE's service area.

Under various water conveyance contracts and exchange agreements (described earlier in this chapter), some CVP water is pumped through SWP facilities at Banks Delta, Dos Amigos, San Luis, and Las Perillas pumping plants. The USBR furnishes the energy for this use of SWP pumping

POWER OPERATIONS IN 1985

(in millions of kilowatthours)

MONTH						ITEM
AUG	SEP	OCT	NOV	DEC	TOTAL	
						ENERGY USED BY SWP PUMPING AND POWER PLANTS
11.11	6.46	3.87	4.80	7.12	65.09	Hyatt-Thermalito Pumpback and Station Service
0.16	0.16	0.15	0.20	0.34	2.26	North Bay Interim Pumping Plant
12.74	8.18	10.75	3.98	4.36	123.16	South Bay Pumping Plant
0.00	0.01	0.01	0.01	0.01	0.78	Del Valle Pumping Plant
63.21	74.72	59.71	57.45	99.68	733.65	Harvey O. Banks Delta Pumping Plant
9.28	20.04	14.89	18.41	65.84	142.89	San Luis Pumping-Generating Plant (SWP Share)
41.40	23.04	18.34	17.52	17.64	330.22	Dos Amigos Pumping Plant (SWP Share)
30.15	26.19	22.91	21.80	17.27	293.10	Buena Vista Pumping Plant
28.73	29.37	26.16	25.08	19.80	301.76	Wheeler Ridge Pumping Plant
61.71	65.15	57.13	55.62	43.03	654.06	Chrisman Wind Gap Pumping Plant
213.64	229.21	200.08	196.53	150.35	2,282.76	A. D. Edmonston Pumping Plant
37.65	32.83	19.52	20.91	12.02	280.89	Pearblossom Pumping Plant
0.00	0.00	0.00	0.00	0.00	0.12	Devil Canyon Powerplant (Station Service)
8.66	13.02	15.42	15.00	13.27	162.41	Oso Pumping Plant
0.03	0.01	0.00	0.02	0.00	0.32	William E. Warne Powerplant (Station Service)
1.10	0.42	0.37	0.17	0.30	9.99	Las Perillas Pumping Plant (SWP Share)
2.99	1.08	0.97	0.49	0.75	26.91	Badger Hill Pumping Plant
522.56	529.89	450.28	437.99	451.78	5,410.37	Subtotal
8.88	3.40	3.70	9.37	10.11	110.38	System Losses and Unaccounted for Energy
531.44	533.29	453.98	447.36	461.89	5,520.75	Total
						SWP ENERGY SOURCES
190.87	71.53	104.62	75.68	40.33	1,715.79	Hyatt-Thermalito Powerplants
18.44	0.38	0.12	0.80	0.00	123.06	San Luis Pumping-Generating Plant (SWP Share)
64.46	50.46	37.26	35.88	24.78	478.17	Devil Canyon Powerplant
17.46	27.39	33.27	31.58	30.49	339.66	William E. Warne Powerplant
31.37	50.76	66.01	56.45	49.91	570.61	Castaic Powerplant (SWP Share)
33.34	22.03	29.83	30.91	28.17	199.58	Bottle Rock Powerplant
166.62	158.70	104.09	121.67	165.87	1,810.14	Reid Gardner Unit No. 4
20.98	-.20	-.07	0.00	0.00	341.30	Pine Flat Powerplant
1.94	1.39	0.91	0.11	0.01	12.57	TERA Power Corporation
17.33	16.68	16.77	15.65	10.32	176.59	MWDSC Hydroelectric Plants (Exchange Energy)
-166.44	-100.65	-90.20	-75.30	-54.79	-1,331.22	Power Exchange Delivered to SCE
305.18	246.28	236.33	214.67	216.53	2,734.00	Power Exchange Received from SCE
0.00	0.00	36.70	37.00	39.40	117.10	Energy Exchange Pacific Gas and Electric Company
0.00	-2.87	5.51	12.03	9.49	15.53	Energy Exchange Southern California Edison Company
-4.20	0.00	29.79	0.00	0.00	17.11	Energy Exchange Salt River Project
-.15	-.15	-.19	-.15	-.13	-1.17	SCE-SBVMWD Exchange
1.29	0.35	0.00	0.00	0.00	12.86	USBR 1982 Exchange Return
0.04	0.04	0.00	0.00	0.00	1.06	USBR Schedule Excess
0.00	0.00	0.00	0.00	0.00	-4.02	LADWP Delivery Due to East Branch Outage
						Purchases
10.25	0.00	0.00	0.00	1.95	80.27	British Columbia Hydro Power Authority
0.00	0.00	3.86	145.52	16.90	508.09	Bonneville Power Authority
2.85	2.30	0.00	0.00	0.00	7.01	Idaho Power Company
1.22	0.30	0.00	0.00	2.05	3.57	Montana Power Company
175.54	180.95	16.38	6.23	7.40	904.71	Portland General Electric Company
11.33	21.53	83.38	6.52	0.00	606.01	Pacific Power and Light Company
0.00	0.00	2.10	0.00	0.00	3.54	Seattle City Light
0.00	0.00	4.99	4.84	0.00	15.47	Salt River Project
0.00	0.00	0.00	0.00	0.65	0.65	Washington Water Power Company
899.72	747.20	721.46	720.09	589.33	9,458.04	Subtotal
368.28	213.91	267.48	272.73	127.44	3,937.29	Less Sales
531.44	533.29	453.98	447.36	461.89	5,520.75	Total

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 the San Luis Pumping-Generating Plant.

Energy Sources

Table 6 also shows the monthly sources of SWP energy during 1985. The output of the Hyatt-Thermalito complex in 1985 was 1.72 billion kWh, about 35 percent below last year's output and well below estimated average annual output of 2.38 billion kWh.

Energy generation at the SWP power recovery plants (San Luis, Devil Canyon, Warne, and Castaic) totaled about 1.51 billion kWh, more than double last year's amount. The combined output of the recovery plants and the Hyatt-Thermalito facilities was sufficient to meet about 58 percent of SWP energy requirements in 1985.

Other SWP hydroelectric power resources are obtained under contract with the Kings River Conservation District (KRCD) and MWDSC. The KRCD contract provides DWR with all of the output of the 165-MW Pine Flat Powerplant. The plant furnished 0.34 billion kWh to the SWP in 1985. 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 SCE and the Los Angeles Department of Water and Power (LADWP) to facilitate transmission of energy from the MWDSC plants to the SWP.

Under the 1979 DWR-SCE Power Contract, in effect since April 1983, part of the Hyatt-Thermalito generation and all of the output of Devil Canyon Powerplant are delivered to SCE. The energy is generally delivered during on-peak periods and a greater amount of energy is returned during off-peak periods. Table 6 shows both the monthly quantities of energy delivered and returned under this contract. The net gain to the SWP during 1985 was 1.40 billion kWh.

Reid Gardner Unit No. 4 supplied 1.81 billion kWh in 1985, making it the largest single source of SWP energy for

TABLE 6A: RECONCILIATION OF ENERGY USE IN 1985 FOR SWP AND

(in millions of kilowatthours)

ITEM	MONTH						
	JAN	FEB	MARR	APR	MAY	JUN	JUL
Harvey O. Banks Delta Pumping Plant							
Energy Metered at Pumping Plant	35.43	60.61	83.63	58.95	55.11	58.41	84.41
Less Energy Scheduled by USBR for CVP Pumping	−7.27	0.00	−19.36	−2.07	0.00	0.00	−28.97
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	28.16	60.61	64.27	56.88	55.11	58.41	55.44
Dos Amigos Pumping Plant							
Energy Metered at Pumping Plant	19.60	39.10	41.49	41.69	52.54	75.21	87.95
Less Energy Scheduled by USBR for CVP Pumping	−6.62	−13.86	−15.21	−15.34	−22.16	−33.25	−38.80
Less Energy Scheduled by USBR for Station Service	−0.03	− 0.03	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	12.95	25.21	26.28	26.35	30.38	41.96	49.15
San Luis Pumping Plant							
Energy Metered at Pumping Plant	65.23	22.95	21.42	5.73	0.25	0.26	7.77
Less Energy Scheduled by USBR for CVP Pumping	−64.36	−22.31	−20.25	−1.73	0.00	0.00	0.00
Less Energy Scheduled by USBR for Station Service	−0.12	−0.40	−0.25	−0.18	−0.11	−0.08	−0.11
Plus Excess Daily Energy Scheduled by USBR	0.31	0.07	0.30	0.04	0.00	0.00	0.00
Energy Used for SWP Pumping	1.06	0.31	1.22	3.86	0.14	0.18	7.66
Las Perillas Pumping Plant							
Energy Metered at Pumping Plant	0.37	0.56	0.62	1.02	1.43	1.72	1.98
Less Energy Scheduled by USBR for CVP Pumping	−0.07	0.00	0.00	0.00	0.00	0.00	0.00
Energy Used for SWP Pumping	0.30	0.56	0.62	1.02	1.43	1.72	1.98
San Luis Generation Plant							
Energy Metered at Generation Plant	0.00	3.92	1.76	17.43	63.18	95.03	79.37
Less Energy Scheduled by USBR for CVP Use	0.00	−3.96	−1.80	−11.06	−46.33	−59.56	−34.92
Plus Excess Daily Energy Scheduled by USBR	0.00	0.03	0.03	0.04	0.12	0.04	0.00
SWP Share of Energy Generated	0.00	-.01	-.01	6.41	16.97	35.51	44.45

the year. This includes the return of 12 million kWh of energy banked with the Nevada Power Company in 1983 during initial start-up of this coal-fired unit. The balance of the banked energy due DWR was about 30 million kWh as of December 31, 1985.

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 145 50-kW wind turbines were operational at the end of 1985; over 12 million kWh of wind-generated energy was delivered to DWR during the year, double last year's output.

Power Purchases and Power Service Costs

Power purchases and transmission service costs during 1985 are summarized in Table 7. DWR purchased 2.87 billion kWh of energy from 13 utilities for $71.5 million. Transmission, capacity, losses, and dispatching services amounted to $38.6 million. Other costs associated with the operation and management of SWP power resources not in Table 7 include:

- o debt service and OM&R costs of $8.4 million associated with the output of Pine Flat Powerplant;
- o OM&R and fuel costs of $49.4 million associated with Reid Gardner Unit No. 4; and
- o debt service and OM&R costs associated with other SWP-owned generation facilities.

Power Sales

When three major long-term power related contracts terminated on March 31, 1983, DWR began operating as a bulk power distributor under new short-term power purchase and sales contracts, and longer term power and transmission contracts with utilities in Arizona, California, Canada, Idaho, Montana, Nevada, Oregon, Texas, and Washington. With the existing SWP resources and new short-term power purchase contracts with the Northwest

CVP PUMPING AT SWP PLANTS AND JOINT-USE FACILITIES

(in millions of kilowatthours)

MONTH						ITEM
AUG	SEP	OCT	NOV	DEC	TOTAL	
						Harvey O. Banks Delta Pumping Plant
100.48	79.17	66.03	62.11	109.02	853.36	Energy Metered at Pumping Plant
-37.27	- 4.45	- 6.32	- 4.66	- 9.34	-119.71	Less Energy Scheduled by USBR for CVP Pumping
0.00	0.00	0.00	0.00	0.00	0.00	Plus Excess Daily Energy Scheduled by USBR
63.21	74.72	59.71	57.45	99.68	733.65	Energy Used for SWP Pumping
						Dos Amigos Pumping Plant
65.83	29.16	22.02	21.07	21.29	516.95	Energy Metered at Pumping Plant
-24.43	- 6.12	- 3.68	- 3.55	- 3.49	-186.51	Less Energy Scheduled by USBR for CVP Pumping
0.00	0.00	0.00	0.00	- 0.16	- 0.22	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
41.40	23.04	18.34	17.52	17.64	330.22	Energy Used for SWP Pumping
						San Luis Pumping Plant
10.89	44.40	46.94	74.65	144.42	444.91	Energy Metered at Pumping Plant
- 1.53	-24.13	-31.85	-56.03	- 78.50	- 300.69	Less Energy Scheduled by USBR for CVP Pumping
- 0.08	- 0.27	- 0.20	- 0.21	- 0.08	- 2.09	Less Energy Scheduled by USBR for Station Service
0.00	0.04	0.00	0.00	0.00	0.76	Plus Excess Daily Energy Scheduled by USBR
9.28	20.04	14.89	18.41	65.84	142.89	Energy Used for SWP Pumping
						Las Perillas Pumping Plant
1.17	0.42	0.37	0.20	0.30	10.16	Energy Metered at Pumping Plant
-0.07	0.00	0.00	-0.03	0.00	- 0.17	Less Energy Scheduled by USBR for CVP Pumping
1.10	0.42	0.37	0.17	0.30	9.99	Energy Used for SWP Pumping
						San Luis Generation Plant
27.73	0.38	0.12	0.80	0.00	289.72	Energy Metered at Generation Plant
- 9.33	0.00	0.00	0.00	0.00	-166.96	Less Energy Scheduled by USBR for CVP Use
0.04	0.00	0.00	0.00	0.00	0.30	Plus Excess Daily Energy Scheduled by USBR
18.44	0.38	0.12	0.80	0.00	123.06	SWP Share of Energy Generated

TABLE 7: SWP POWER AND TRANSMISSION SERVICE PURCHASES IN 1985

Supplier	Services Provided	Invoice Amount
Bonneville Power Authority	Firm and nonfirm energy	$ 10,771,501
British Columbia Hydro Power Authority	Nonfirm energy	2,495,356
El Paso Electric Company	Filing fees	50
Idaho Power Company	Nonfirm energy	197,475
Kings River Conservation District	Hydroelectric energy	2,634,580
Los Angeles Department of Water and Power	Transmission and dispatching	102,336
MCR Geothermal Corporation	Geothermal steam	8,196,173
Montana Power Company	Nonfirm energy	109,030
Nevada Power Company	Transmission	981,478
Pacific Gas and Electric Company, Southern California Edison Company, San Diego Gas and Electric Company	EHV transmission	1,500,000
Pacific Power and Light Company	Firm capacity and energy, transmission and losses on third party systems	20,071,097
Pacific Power and Light Company	Transmission	12,761,125
Portland General Electric Company	Firm capacity, firm and nonfirm energy	24,585,265
Salt River Project Agricultural Improvement and Power District	Energy	353,237
Seattle City Light	Nonfirm energy	97,740
Southern California Edison Company	Transmission and dispatching	13,517,338
TERA Power Corporation	Wind energy	1,130,964
The Metropolitan Water District of Southern California	Hydroelectric energy	9,380,599
Washington Water Power Company	Nonfirm energy	21,944
Western Area Power Administration	Interconnection transmission	1,134,000
Total		$110,041,288

utilities, the SWP is ensured of more than enough energy and capacity to meet future SWP needs. DWR entered into power sales contracts to sell any excess capacity and energy, within the limit of SWP's contractual transmission capabilities, at Malin, Tesla, Vincent, Sylmar, and El Dorado substations.

During 1985, DWR sold this excess capacity and energy on a daily basis to utilities at current market rates. The decision to sell the power, or to wait for a more opportune time, took into consideration projected SWP operations and changes in the power market as well as energy losses, transmission costs, and dispatching costs. DWR's computerized accounting system quickly monitors the status of the power purchases and sales operation.

Table 8 summarizes power related sales by DWR. Total energy sold in 1985 was 3.94 billion kWh for a revenue of $123.1 million from 14 utilities. Other power related revenues were for peaking capacity payments from Nevada Power Company and peaking capacity foregone payments from LADWP for a combined revenue of $3.2 million.

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 El Dorado-Mead were exercised in order to make energy

TABLE 8: SWP POWER SALES IN 1985

Purchaser	Kilowatthours	Amount of Sale
City of Anaheim	188,217,000	$ 5,814,172
City of Burbank	184,034,000	5,732,262
City of Glendale	171,711,000	5,434,480
City of Pasadena	229,278,000	7,279,008
City of Riverside	107,626,000	3,322,937
City of Santa Clara	169,705,000	5,622,305
City of Vernon	87,808,000	2,960,936
Los Angeles Department of Water and Power	38,762,000	3,914,659(a
Nevada Power Company	195,024,000	7,717,142
Northern California Power Agency	183,513,000	6,262,990
Pacific Gas and Electric Company	1,908,078,000	57,199,084
Salt River Project Agricultural Improvement and Power District	31,375,000	899,400
San Diego Gas and Electric Company	174,996,000	6,033,811
Southern California Edison Company	267,197,000	8,125,970
Total	3,937,324,000(b	$126,319,156(b

a) Includes $2,727,808 for peaking capacity foregone.
b) In addition to this amount, there was $37,630 in revenue for delivery of 1,174,000 kWh of energy to SCE under the DWR-SCE Generation Replacement Agreement. DWR made this energy delivery to SCE pursuant to the 1982 DWR-San Bernardino Valley Municipal Water District (SBVMWD) Energy Purchase Agreement to replace generation lost by SCE because of water diversions SBVMWD made from the Santa Ana River and Mill Creek.

sales to utilities in Arizona, Nevada, and Southern California.

Because of construction delays, PGandE extended the completion date for the Table Mountain reinforcement project from January 1985 to mid 1986. All equipment has been installed but has not yet been accepted for commercial operation. The delay in increasing the 500-kV transmission capacity from Table Mountain to Tesla substations caused DWR to extend its present transmission contract with the Western Area Power Administration (WAPA). WAPA provides a parallel transmission path from Table Mountain Substation to the Tracy Substation, at which point the transmission path is linked to PGandE's line. Using this parallel transmission path allowed the output from the Hyatt-Thermalito power complex to bypass the power bottleneck between Table Mountain and Tesla substations, resulting in little curtailment of the Hyatt-Thermalito power complex during 1985.

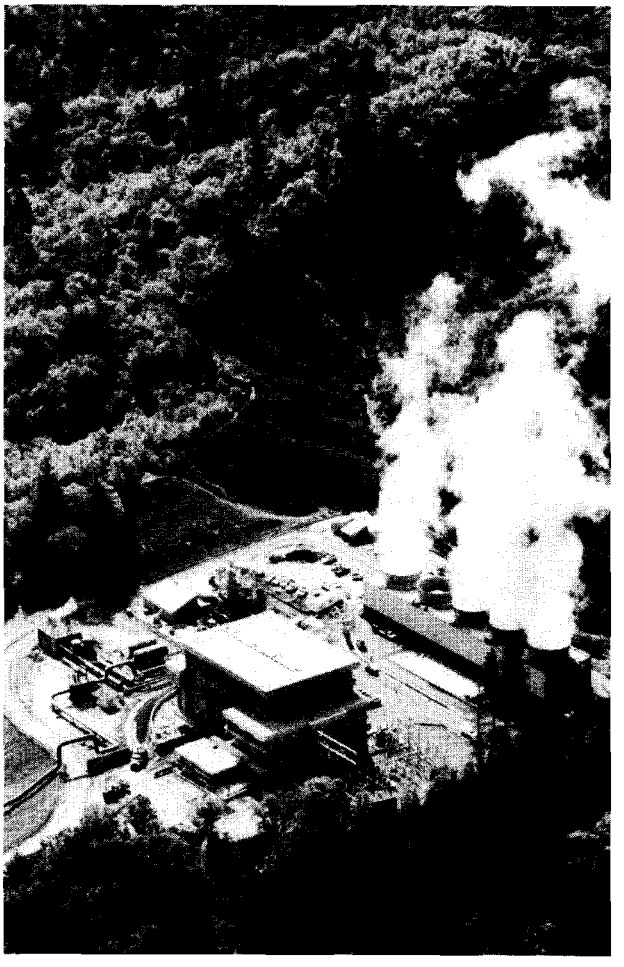
Bottle Rock Powerplant Back On Line After Reconditioning

Shortly after Bottle Rock Powerplant began commercial operation in February 1985, problems developed with the first-stage nozzle pressure and sluggish movement of the main stop valves, swing check valves, and control valves. The unit was taken out of service on April 14, 1985 to free the sticking valves; it was taken out of service again on May 21, when nozzle pressure increased and valve tests demonstrated sluggish operation. The second shutdown revealed extremely heavy deposits of scale on the turbine's rotating and stationary blading and scale buildup on the valve stems. The deposit was primarily an iron oxide compound, although silica, arsenic, boron, and some types of chlorides were also found.

Inspection revealed damage to the rotor and blading due to the deposits and to missing seal strips. The seal strips and the scale, as it formed and broke apart, also eroded the blading. Although the turbine rotor and blading needed major reconditioning, the unit was reassembled with the other damaged components and without the seal strips.

While the plant was out of service, the steam supplier installed a water injection nozzle in the steam line near the point of steam delivery to the plant. Tests indicated that an injection rate of 30 to 35 gallons per minute reduced iron and other compounds to acceptable levels for turbine operation. The water injection also reduced steam contaminant levels enough to retard scale buildup on the turbine blades.

The unit returned to service on August 1, 1985. About two weeks later, the steam supplier experienced wellfield problems that reduced the steam supply and limited the plant's output. The unit was taken out of service on March 29, 1986 for inspection and reconditioning. Deposits had been reduced to acceptable levels and the unit was reassembled with the new spare rotor. During the outage, the steam supplier completed repairs to the steam field and added automatic controls to the water injection system. The unit returned to service in June 1986.



Bottle Rock Powerplant is back after being out of service for maintenance and reconditioning.

Recreation and Visitor Facilities

As summarized in Table 9, approximately 6.6 million recreation days of use were recorded at SWP facilities in 1985. This use includes camping, boating, fishing, swimming, bicycling, and other recreational activities, and represents a slight increase from 1984.

Most SWP recreation and visitor use was concentrated at the major reservoirs, where well-developed facilities exist to accommodate public use. More than half of the total SWP recreation use in 1985 occurred at the four major reservoirs in Southern California.

The Los Angeles County Department of Parks and Recreation, operator of Castaic Lake recreation facilities, completed the master plan for development of future sites at the lake. Construction of these proposed facilities should begin in 1986.

At Pyramid Lake, the 92-unit Los Alamos Campground and the 25-unit Hardluck Campground were both completed and opened for public use during 1985. The U. S. Forest Service completed construction of picnic units and shade ramadas on Spanish Point and at Emigrant Landing. Several new vault-type toilets replaced the old portable chemical units at various boat-in sites around the lake; more improvements at these boat-in sites are scheduled for 1986.

Table 9 includes recreation use figures at fishing access sites and recreation developments along the California Aqueduct. Figure 7 shows the location of these facilities. There are 17 developed fishing access sites along the Aqueduct. Modifications of the East Branch of the Aqueduct in Southern California have necessitated temporary closure of about 40 miles of the 174-mile long bikeway (67 miles between Bethany Reservoir and O'Neill Forebay and 107 miles in the Antelope Valley area), reducing the length of the Southern California reach to 67 miles.

FIGURE 7: AQUEDUCT RECREATION DEVELOPMENTS

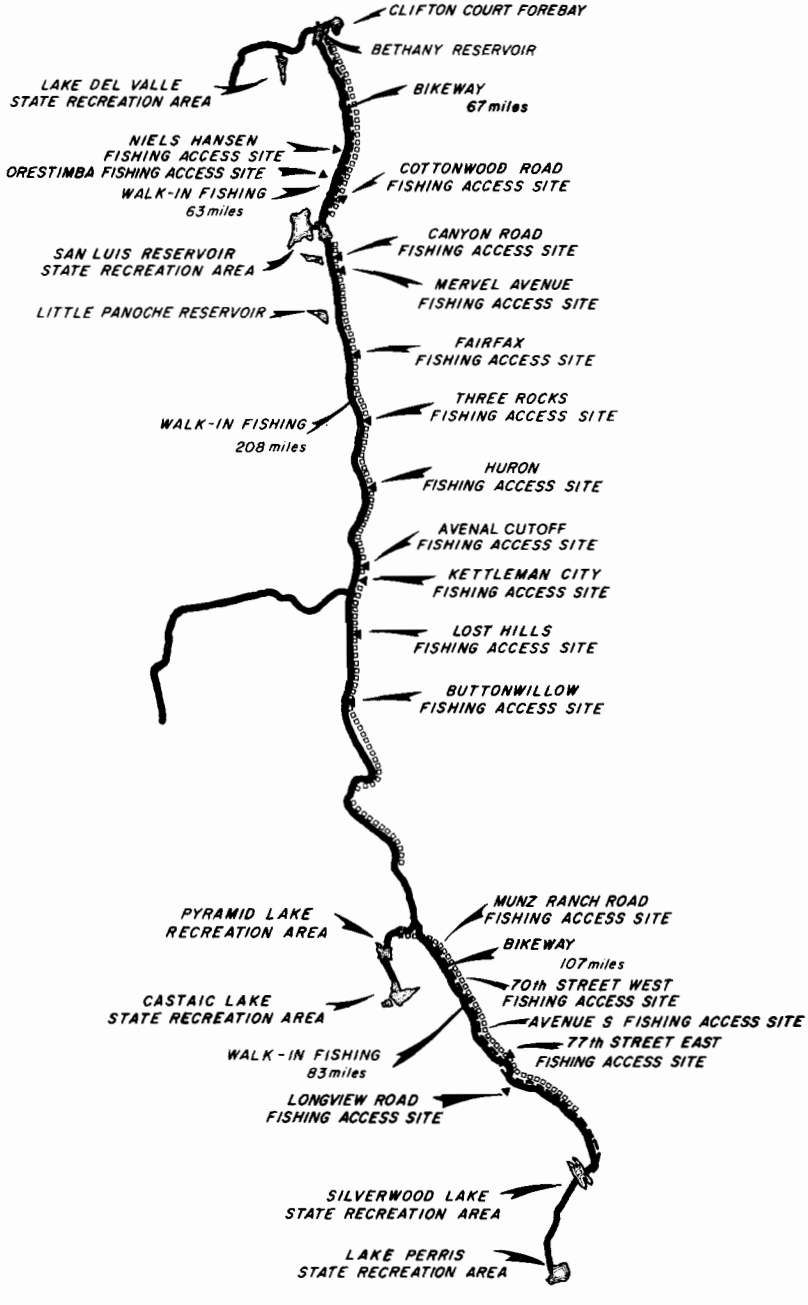


TABLE 9: RECREATION USE AT SWP FACILITIES IN 1985

Facility	1985 Use in Recreation Days	Facility	1985 Use in Recreation Days
Oroville Field Division		San Luis Division	
Frenchman Lake	288,812	San Luis Reservoir	282,122
Antelope Lake	159,100	O'Neill Forebay	412,030
Lake Davis	340,752	Los Banos Reservoir	77,081
Lake Oroville and Thermalito Forebay	624,368	Fishing Access Sites	
Thermalito Afterbay	41,000	Canyon Road	1,587
Oroville Wildlife Area	105,500	Mervel Avenue	1,673
Total	1,559,532	Fairfax	1,203
		Three Rocks	112
Delta Field Division		Huron	3,023
Lake Del Valle	428,101	Avenal Cutoff	1,613
Clifton Court Forebay	---	California Aqueduct	
Bethany Reservoir	52,010	Walk-In Fishing	15,216
Fishing Access Sites		Wildlife Areas	13,100
Niels Hansen	334	Total	808,760
Orestimba	1,089		
Cottonwood Road	336	Southern Field Division	
California Aqueduct		Silverwood Lake	587,510
Walk-In Fishing	14,593	Lake Perris	1,969,594
Bikeway	302	Pyramid Lake	286,200
White Slough Wildlife Area	7,302	Castaic Lake	902,597
Total	504,067	Fishing Access Sites	
		77th Street East	771
San Joaquin Field Division		Longview Road	136
Fishing Access Sites		California Aqueduct	
Kettleman City	3,443	Walk-In Fishing	4,906
Lost Hills	3,330	Bikeway	1,659
Buttonwillow	3,045	Total	3,753,373
California Aqueduct			
Walk-In Fishing	4,253	GRAND TOTAL, SWP	6,639,803
Total	14,071		

Other bikeway sections will be temporarily closed over the next 5 to 7 years as enlargment of the East Branch progresses.

In addition to the regular recreation use, 452,000 visitor days of use occurred at SWP visitor centers during 1985. This includes people entering visitor centers, stopping at overlooks, and participating in guided tours of the SWP facilities.

Fish and Wildlife Activities

The Department of Fish and Game continued its fish planting activities at the SWP facilities during 1985. Table 10 summarizes fish plantings at each location. Total plantings of catchable trout were similar to those of 1984, but fingerling plantings more than tripled.

The Feather River and Thermalito Hatcheries produced a total of 14,800,000 fish. Of the Chinook salmon produced, 4,970,000 were fingerlings; 6,940,000 were planted as advanced fingerlings; and 2,090,000 were planted as yearlings. A total of 390,000 fingerling steelhead were planted as well as 410,000 yearling steelhead.

TABLE 10: FISH PLANTED AT SWP FACILITIES IN 1985

Location	Trout		Channel Catfish	Chinook Salmon	Total
	Catchable	Fingerling			
Frenchman Lake	23,200	515,500			538,700
Antelope Lake	43,000		400(a		43,400
Lake Davis	75,500	487,200			562,700
Lake Oroville	40,200(b	31,200		197,700	269,100
Thermalito Forebay	58,400				58,400
Lake Del Valle	36,500				36,500
Los Banos Detention Reservoir	10,500				10,500
Silverwood Lake	211,200	65,300	9,300		285,800
Lake Perris	161,700	51,000	46,000(a,b		258,700
Pyramid Lake	158,400		8,800		167,200
Castaic Lake	219,800		33,000(b		252,800
Castaic Lagoon	52,700		5,000		57,700
California Aqueduct			28,000		28,000
Total	1,091,100	1,150,200	130,500	197,700	2,569,500

a) Includes catchable and broodstock catfish.
b) Includes catchable and subcatchable fish.



A fishing derby at Castaic Lake attracts anglers of all ages.

Chapter III
SWP ADMINISTRATION ACTIVITIES

Along with construction and operation activities, substantial administrative and related efforts are necessary to manage the SWP. This chapter summarizes the principal administrative activities during the past year.

Water Contracts Management

Contract Amendments

Each of the 30 long-term water supply contracts has been amended repeatedly, some as many as 21 times. A list of amendments for each contract, and the general subject of each, is shown in Table 11. Revisions to Table A (Annual Entitlements), not in the form of a numbered amendment, are not included in Table 11. Amendments executed by June 30, 1986, which were not included in Bulletin 132-85, are as follows:

- On November 15, 1985, Solano County Flood Control and Water Conservation District executed Amendment No. 10, which provided for additional capacity in Cordelia Pumping Plant to deliver a portion of Solano's water. The amendment also provided for inclusion of additional capacity in the North Bay Aqueduct for (1) excess peaking, and (2) conveyance of Project and non-Project water for the City of Vallejo. (See "North Bay Aqueduct" heading later in this chapter and Figure B-3 and accompanying discussion in Appendix B.)

- On February 11, 1986, Napa County Flood Control and Water Conservation District executed Amendment No. 12, which revised North Bay Aqueduct repayment reaches and proportionate use factors to complement Amendment No. 10 to the Solano contract. Amendment No. 12 also revised Napa's Table A entitlements to reflect the projected operation date for the North Bay Aqueduct.

- The amendment regarding the enlargement of the East Branch of the California Aqueduct was executed by MWDSC on April 8, 1986. This amendment was subsequently executed in June 1986 by Antelope Valley-East Kern Water Agency, Coachella Valley Water District, Desert Water Agency, Palmdale Water District, and Mojave Water Agency. (See the full discussion of East Branch Enlargement later in this chapter.) Of the participating contractors, only San Bernardino Valley Municipal Water District has yet to sign the amendment.

Several contract amendments have been forwarded for signature over the years (one as early as 1971), but have yet to be signed by the related contractors. These inactive amendments are listed and briefly described in Bulletin 132-85 (page 43).

Relinquished Aqueduct Capacity and Entitlement

The sale of 17 cfs of Aqueduct capacity and associated 12,214 acre-feet of entitlement water, relinquished by Santa Barbara County Flood Control and Water Conservation District (SBCFC&WCD), is still unresolved. In October 1985, DWR wrote to all the SWP contractors and provided the costs associated with the repayment of past charges and payment of continuing charges for the relinquished capacity and associated entitlement water. Payment of these costs, to reimburse SBCFC&WCD, is a necessary condition of the sale. The contractors were asked

TABLE 11: WATER SUPPLY CONTRACT AMENDMENTS AS OF JUNE 30, 1986

Contracting Agency	Minimum Project Yield Increased	Supplemental Conservation Facilities Costs Delayed			Project Interest Rate Modified	Surcharge and Surcharge Credit Provisions						"Wet Weather" Provisions Added	Surplus Water Provisions		Turnout Construction by Agency	Peaking Service		Annual Entitlements Revised	Excess Capacity Purchased	Article 38 Revised	Repayment Period and Contract Term Revised	Special Conditions	Contract Issues Resolved (a)	Enlargement of the East Branch Aqueduct
		1970	1971	1972 until Construction		Added	Revised	Moratorium Declared: Through 1969	Moratorium Declared: 1970	Moratorium Declared: 1971	Deleted		Added	Revised		Increased	Decreased							
FEATHER RIVER AREA																								
City of Yuba City	1	2	2	2	2		1							1				1,4			3		5	
County of Butte	1	3	3	3	3		1	2		4	5			1				6,8			7		9	
Plumas County Flood Control and Water Conservation District	1	3	5	6	3		1	2	4	7	8			10						9	11		12	
NORTH BAY AREA																								
Napa County Flood Control and Water Conservation District	1	3	4	5	3		1				6			1				8,9 10,12			7	1,2, 12	11	
Solano County Flood Control and Water Conservation District	1	2	3P	3P, 11	2		1							1,5		1		6,7,11	10		6	6,10	9	
SOUTH BAY AREA																								
Alameda County Flood Control and Water Conservation District-Zone 7	2	6	8	9	6	2		5	7	10	11	1		2,12	3			1,4			13	1	14	
Alameda County Water District	1	4	5	7	4	1		3		8	9	S	1	11,12	2					10	15	1,6	14	
Santa Clara Valley Water District	2	6	8	10	6	2		5	7	11	12	1	1	2,14, 15,17	3			1,4		13	16	1,9	18	
SAN JOAQUIN VALLEY AREA																								
County of Kings		2	3	4	2			1		5	6	S	S	8						7	9		10	
Devil's Den Water District	1	5	7	8	5			4	6	9	10			1,12, 13,15				1,3		11	14	2	16	
Dudley Ridge Water District	1	6	8	9	6			5	7	10	11			1,13, 14,16				1,2 3,4		12	15		17	
Empire West Side Irrigation District	1	4	6	7	4			3	5	8	9	S		1,11, 12,14				2		10	13		15	
Kern County Water Agency	1	4	6	8	4			3	5	9	10			1,12, 14,16				1,2 18		11	15	7,13	17	
Oak Flat Water District		3	5	6	3			2	4	7	9	S	S	11, 12,14	1			8		10	13		15	
Tulare Lake Basin Water Storage District	2	5	6	7	5			4		8	10	S		2,13, 14,17				1,3,9 12,19 20,21		11	15	16	18	
CENTRAL COASTAL AREA																								
San Luis Obispo County Flood Control and Water Conservation District	2	3	4	5	3	1	2				6		1	2,8						7	9		10	
Santa Barbara County Flood Control and Water Conservation District	2	3	4	5	3	1	2				6		1	2,7				2,9			8		10	
SOUTHERN CALIFORNIA AREA																								
Antelope Valley-East Kern Water Agency	1	5	6	7	5	1					8		1	10		3	2	1,14	4	9	12	2,3 4	13	15
Castaic Lake Water Agency	2	4	5	6	4	1	2				7		1	2,10		2		2,3,9		8	11		12	
Coachella Valley Water District	2	3	4	5	3	1	2				6		1	2,8				2		7	9		10	11
Crestline-Lake Arrowhead Water Agency	2	5	6	7	5	1	2				8		1	2,11	4	3		2,10		9	12		13	
Desert Water Agency	2	3	4	5	3	1	2				6		1	2,8				2		7	9		10	11
Littlerock Creek Irrigation District	2	3	4	5	3	1	2				6		1	2,7				2			8		9	
Mojave Water Agency	2	4	5	6	4	1	2				7		1	2			3	2,10 12		8	9	3	11	13
Palmdale Water District	2	3	4	5	3	1	2				6		1	2,8				2		7	9		10	11
San Bernardino Valley Municipal Water District	2	4	5	6	4	1	2				7		1	2				1,2, 3,9		8	10		11	
San Gabriel Valley Municipal Water District	2	4	5	6	4	1	2				7		1	2,10		2		2,9	3	8	11		12	
San Gorgonio Pass Water Agency	2	4	5	6	4	1	2				7		1	2		2					8	2,3	9	
The Metropolitan Water District of Southern California	1	9	10	11	9	1					13		1	16				1, 3, 8V, 15	2,6 7	14	17	(b	18	19
Ventura County Flood Control District	1	2	3	4	2		1				5			1,7						6	8		9	

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

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) MWDSC special conditions are covered by Amendment Nos. 2, 3, 4, 5, 7, 8V, and 12.

to submit new offers, or modify previous offers, due to concerns expressed by several agricultural contractors regarding repayment matters.

DWR received offers from Castaic Lake Water Agency, Coachella Valley Water District, Desert Water Agency, Dudley Ridge Water District, Empire West Side Irrigation District, Kern County Water Agency, MWDSC, and Tulare Lake Basin Water Storage District. Despite these offers, sale and reallocation of the capacity and entitlement water have been postponed while a number of contractors reevaluate potential transfers of entitlement water. A new twist in the situation occurred in April 1986, when SBCFC&WCD indicated an interest in reacquiring some or all of the entitlement and capacity.

Preconsolidation Water Agreements

In 1964, DWR contracted with two San Joaquin Valley water districts to supply water for construction of the California Aqueduct. The original contracts provided that DWR deliver specified quantities of water to the contractors by December 31, 1984. By the end of 1984, the successors to the original contractors (Shell California Production, Inc. and J. G. Boswell Company), had taken delivery of all but 23,689 acre-feet and 14,710 acre-feet of preconsolidation repayment water, respectively.

Negotiations commenced during 1984, and agreements were executed during 1985, providing for delivery of the remaining preconsolidation repayment water through December 31, 1994. The agreements provide that deliveries will be subject to (1) a use-of-facilities charge for water delivered from storage at the equivalent unit capital and minimum rate applicable in the year of delivery for the facility used, and (2) pumping charges at the prevailing surplus water rate.

Preconsolidation repayment water will generally be delivered upon request when (1) there are unregulated flows in the Delta, (2) entitlement deliveries can be met, and (3) delivery capacity is available. Deliveries can also be made from storage when surplus water is available in excess of surplus deliveries requested by the long-term contractors. The use-of-facilities charge is not applicable when repayment water deliveries are made from unregulated flows in the Delta.

1982 Exchange Agreements

Bulletin 132-84 (pages 46-47) describes the 1982 exchange and storage agreements under which Devil's Den Water District (DDWD), Dudley Ridge Water District (DRWD), and Kern County Water Agency (KCWA) obtained rights to water stored in MWDSC ground water basins and Lake Oroville as follows:

	(acre-feet)		
	MWDSC Basins	Lake Oroville	Total
DDWD	126	559	685
DRWD	1,301	1,821	3,122
KCWA	9,494	46,393	55,887
Totals	10,921	48,773	59,694

(A total of 60,000 acre-feet of exchange water was made available under the 1982 agreements; Oak Flat Water District took delivery of 306 acre-feet in 1982, leaving the stored balance shown in the preceding tabulation.)

The storage agreements provide that DWR deliver the water stored by MWDSC to the participating contractors while reducing MWDSC's entitlement deliveries by a like amount (MWDSC withdraws this portion of its entitlement from ground water). The water stored in Lake Oroville is available upon request, subject to certain limitations.

DDWD took delivery of all of its

685 acre-feet of 1982 exchange water in 1984, and DRWD took delivery of its 3,122 acre-feet in 1985. KCWA did not take any of its 1982 exchange water by the December 31, 1985 limit set by the original agreements; instead, KCWA, DWR, and MWDSC executed agreements extending the return period through July 31, 1986 for the MWDSC water, and December 31, 1986 for the water in Lake Oroville.

Bulletin 132-84 also described provisions of the 1982 exchange agreement under which 60,000 acre-feet of water was made available to the CVP. The USBR was to pay for this water by furnishing energy to the SWP on or after April 1, 1983. The energy was to be used to pump 200,000 acre-feet of water that the USBR owed to the SWP under other agreements.

Pursuant to the agreement, on August 1, 1983, the USBR began to return water and energy to the SWP. However, on August 16, 1983, DWR asked the USBR to stop the return as provided in the agreement, and to consider deferring the return. DWR requested this action because it was not receiving the necessary value for the energy to return the dollar amount owed the SWP. The USBR agreed to the request and stopped the return after August 20, 1983.

DWR and the USBR agreed on a procedure for extending the time for USBR repayment of the approximate $2.4 million balance owed (plus interest calculated at the State's Surplus Money Investment Fund rate). Generally, repayment of the 200,000 acre-feet of water and associated energy took place when the energy was worth at least 28 mills per kWh to DWR. The USBR returned 52,484 acre-feet to the SWP in 1983, and 144,555 acre-feet in 1984. During 1985, the final 29,550 acre-feet and associated energy was returned.

The total amount of water returned by the USBR over the life of the exchange was 226,589 acre-feet, which was more than the 200,000 acre-feet originally borrowed by the USBR because of the accrual of interest and operational adjustments. DWR received 98,825,000 kWh of energy, valued at $3,002,136.

Agricultural Economic Problems

The widespread economic depression within the agricultural community has affected some SWP contractors who use Project water for agricultural production. During the latter half of 1985, DWR learned that two member units of the Kern County Water Agency (KCWA) might not be able to pay their shares of KCWA's SWP charges after 1986. However, the Agency has been able to meet its repayment obligations.

The two member units want to reduce, by about 71,000 acre-feet per year, the amount of SWP water they currently contract for from KCWA; they also want to be relieved of further payment obligations for that water. These same water subcontractors are willing to sell or transfer their water entitlements if (1) the purchaser agrees to buy the land within the member unit to which the water is allocated, (2) the purchaser agrees to assume the member unit's financial obligations that go with the land, and (3) the purchaser agrees to take over the SWP water costs.

The SWP contractors, recognizing a need to protect the financial integrity of the Project, formed a committee to consider the issue and possible alternative solutions. DWR agreed with the request to participate in the committee discussions. Among the possible solutions under discussion were exchanges among other agricultural users within KCWA, or permanent water transfers to municipal or industrial users; however, no clear-cut solutions were developed during the meetings.

Concurrent with the committee meetings, Kern County officials were discussing whether water presently used in the County should be allowed to be transferred out of the County. In February 1986, KCWA's directors distributed a draft issue paper outlining the Agency's position as follows:

- Project water in excess of current member units' needs should be first transferred to other member units, water districts, or entities that need the water within Kern County. This should happen before reductions in Agency entitlement or transfers out of the County are considered. KCWA will consider all favorable programs for the transfer, reallocation, and use of the entitlement water within the County.

- More funds may be required to maintain SWP entitlement water payments than are provided to KCWA by member-unit rates and Zone of Benefit collections. If this occurs, KCWA should conduct an advisory election to determine whether Kern County taxpayers would support additional Zone of Benefit assessments as an alternative to reducing Agency entitlement or transferring water out of the County.

- Another option available to KCWA is to defer some of its entitlement as a way of reducing its financial obligations and preserving the water for future use in Kern County. This alternative could be used by KCWA if the amount of SWP water in excess of member units' current needs cannot be transferred within the County, and if the costs exceed the financial ability of the Agency and member units.

- Finally, KCWA may consider transfer of water out of the County or permanent reduction of Agency entitlement if it is determined that some of the SWP entitlement cannot be retained within the County because of (1) the inability by both the Agency and the member units to meet payments for such water, and (2) the deferment of water costs within the Project financial structure would unduly increase costs to all member units.

North Bay Aqueduct

When final design of the North Bay Aqueduct began in December 1982, the plan called for pumping a maximum of 113 cfs at a diversion point on Cache Slough. This capacity was based upon conveying all of Napa's maximum annual entitlement of 25,000 acre-feet and 36,400 acre-feet of Solano's 42,000-acre-foot maximum entitlement. The remaining 5,600 acre-feet of Solano's entitlement was to have been diverted directly from the Delta via the City of Vallejo's existing pumping plant near the proposed SWP diversion point on Cache Slough.

In September 1984, DWR selected a new North Bay Aqueduct intake location on Barker Slough, about 3 miles southwest of the previous pumping plant site on Cache Slough. This change resulted from a study that showed substantial improvement in the quality of the water source and a reduction of about 2 miles of pipeline length. The City of Vallejo then began considering purchase of capacity in the SWP pumping plant, with a separate discharge line to connect to the existing Vallejo pipeline that passes about 4,000 feet north of the Barker Slough Pumping Plant site. After several months of negotiations and analysis of alternatives, the City of Vallejo elected instead to abandon its aging pumping and pipeline facilities and to transport its water through the North Bay Aqueduct.

Vallejo's water right permit provides for diversion of up to 31.52 cfs of non-Project water from the Delta, and its share of Solano's SWP entitlement is 10.21 cfs; capacity to convey all of this water was added to the North Bay Aqueduct under Amendment No. 10 to Solano's SWP contract. The amendment provides that the capacity and annual delivery quantity of non-Project water be included in the derivation of proportionate use factors for distribution of capital and minimum OMP&R costs. Furthermore, Solano must make advance payment of the $3,926,200 incremental capital cost of the capacity necessary to convey non-Project water. Power for pumping non-Project water will be purchased from PGandE by the City of Vallejo.

Solano's 1963 water supply contract provides for delivery "to a turnout in the vicinity of the Cordelia Pumping Plant." In December 1984, the City of Benicia requested a turnout near Green Valley Road, about 3,000 feet west of Cordelia Pumping Plant. DWR's studies showed a separate discharge line for Benicia would save both capital and operating costs, compared to supplying Benicia's turnout via the Napa discharge line. As final design began, Benicia elected to relocate its point of delivery to the boundary of the State right of way at Cordelia Pumping Plant. The City of Vallejo chose a similar plan for its deliveries. As a result, Cordelia Pumping Plant will have three separate sets of pumps (each pumping against a different static head) and separate discharge lines serving Napa and the two Solano member units, Benicia and Vallejo. Amendment No. 10 to Solano's contract reflects this arrangement by creating a new repayment reach consisting of Solano's share of Cordelia Forebay and Pumping Plant and the discharge lines through the Benicia and Vallejo turnouts (see Figure B-3 in Appendix B).

In March 1985, at the instigation of the Cities of Fairfield and Vacaville, Solano requested that 20 cfs of excess peaking capacity be added between Barker Slough and the Fairfield/Vacaville turnout. Amendment No. 10 provides for the necessary enlargement of the pipeline and construction of an additional bay for a tenth pumping unit at Barker Slough Pumping Plant. (DWR must procure and install the tenth pump upon Solano's future request.) Solano is to make advance payment of $385,000 to cover the incremental capital cost of the excess peaking capacity. This amount does not include the tenth pump, but does reflect a minor change in the location of the Fairfield/Vacaville turnout subsequent to the execution of Amendment No. 10.

Prior to the changes described in the preceding paragraphs, Phase II of the North Bay Aqueduct pipeline was to have had an inside diameter of 63 inches from Barker Slough to Cordelia Forebay (21 miles). The final design includes 10.3 miles of 72-inch pipe from Barker Slough to the Fairfield/Vacaville Turnout, then 6.9 miles of 66-inch pipe to Ledgewood Creek, and 63-inch pipe for the remaining 3.8 miles to Cordelia Forebay. Barker Slough Pumping Plant will have a nominal design capacity of 154 cfs (at low tide with Travis Surge Tank at its maximum level) with the spare unit out of service. The 20 cfs of excess peaking capacity would be available under either of the following conditions: (1) with nine units, including the spare, in operation at mean tide; or (2) with ten units, including both the spare and future units, in operation at low tide.

In January 1986, at Napa's request, DWR and Napa executed a letter agreement to maintain the existing North Bay Interim Pumping Plant in service as an emergency backup facility. This will permit delivery of Solano Project water to Napa in the event that SWP water could not be delivered via Cordelia

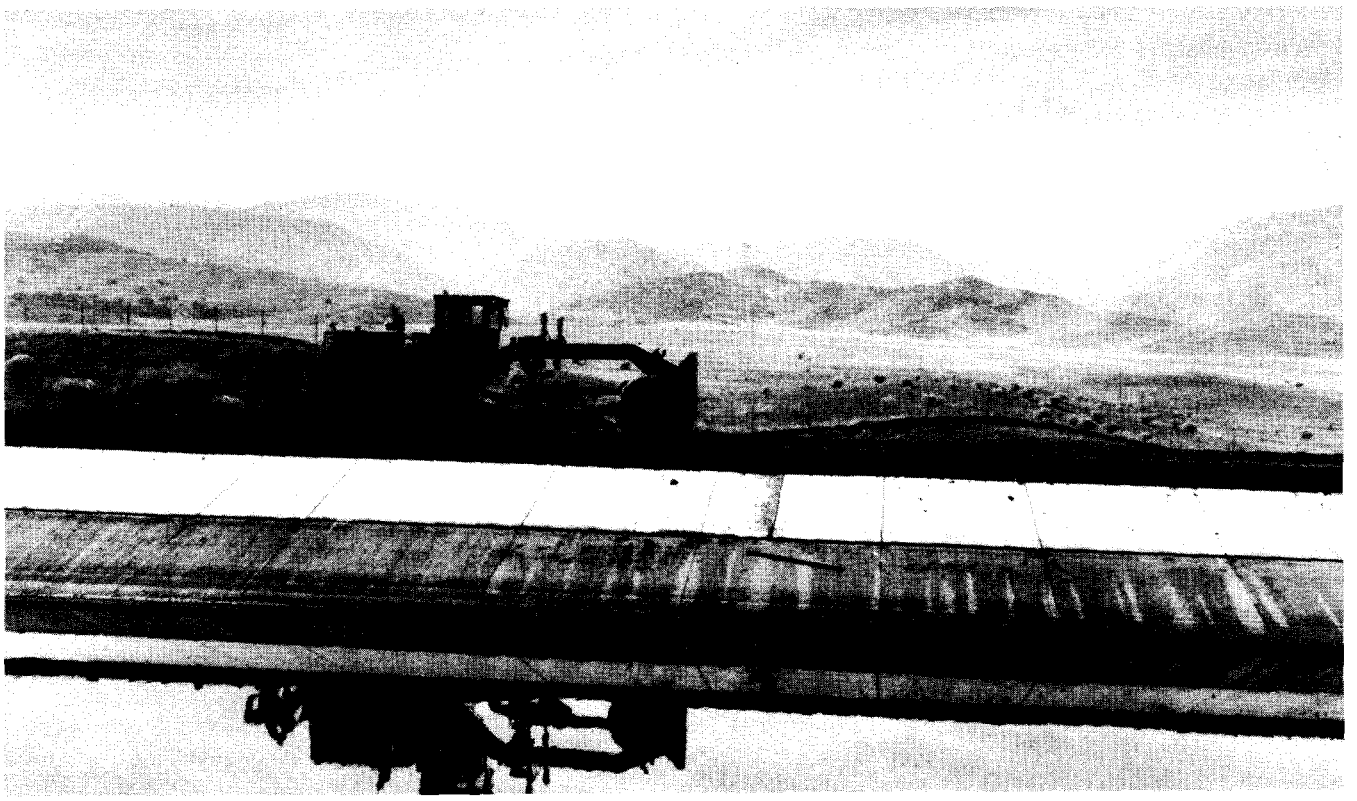
Pumping Plant. Under the agreement, Napa will pay the costs of retaining the Interim Pumping Plant in service and will accept any deliveries through the plant as part of its SWP entitlement.

East Branch Enlargement

The original capacity allocations in the California Aqueduct provided for MWDSC to take delivery of about 72 percent of its maximum annual entitlement via the West Branch (and 28 percent via the East Branch). The planned West Branch deliveries would require construction of the second barrel of the Peace Valley Pipeline, installation of the two additional units at Warne Powerplant, and substantial expansion of MWDSC's distribution facilities (the "Middle Reach" of MWDSC's Foothill Feeder). If fully completed, the West Branch would allow MWDSC to take delivery of its maximum annual entitlement of SWP water.

Under various letter agreements and amendments to the SWP contracts, the East Branch was built to permit substantial enlargement of its capacity. Thus, enlargement of the East Branch is an alternative that would allow delay of any future completion of the West Branch and the Middle Reach of MWDSC's Foothill Feeder. MWDSC made a thorough analysis of the two alternatives, considering (1) growth patterns in its service area, (2) the impact of decreasing supplies available from the Colorado River, (3) costs, and (4) environmental impacts. These studies showed that MWDSC would ultimately need an additional 1,200 cfs of capacity in the East Branch enlargement alternative, with a first stage of 600 to 900 cfs.

In April 1984, DWR completed a final EIR covering enlargement of the East Branch by 600 cfs initially and 1,200 cfs ultimately. In April 1985, MWDSC completed its studies and its Board of



A grader moves along part of a completed section of the Mojave Aqueduct modification.

Directors voted to select enlargement of the East Branch as its preferred alternative, pending completion of a supplemental EIR on the associated MWDSC distribution facilities. MWDSC completed the final supplemental EIR in February 1986. On March 11, 1986, the MWDSC Board of Directors voted to authorize the General Manager to (1) execute a contract amendment covering enlargement of the East Branch, and (2) request DWR to proceed with final design and construction.

As MWDSC interest in East Branch enlargement intensified, DWR began discussions with the ten other East Branch contractors. Six other contractors expressed interest in participating in the enlargement: Antelope Valley-East Kern Water Agency, Coachella Valley Water District, Desert Water Agency, Mojave Water Agency, Palmdale Water District, and San Bernardino Valley Municipal Water District. These contractors desire added capacity in various reaches to overcome constraints built into the existing capacity allocations and to change delivery locations to meet future needs. With these additions, the total enlargement of the East Branch ranges from 1,500 cfs to 1,683 cfs in the various affected reaches.

DWR design studies show that the greater capacity can be obtained with relatively minor modifications of the work planned for a 1,200-cfs enlargement. An addendum to DWR's April 1984 EIR was prepared to cover the increase in capacity above 1,200 cfs.

As of June 30, 1986, contract amendments with all participating contractors except San Bernardino Valley Municipal Water District had been executed. The contract amendments provide for financing, construction, operation, maintenance, and repayment of the enlargement. Financing for the capital costs of enlargement is separate from other SWP financing, and the participating contractors will share in repayment in proportion to their shares of enlargement capacity in each repayment reach.

The planned East Branch enlargement will cover a 108.84-mile reach of the Aqueduct from the bifurcation with the West Branch through the afterbay at Devil Canyon Powerplant, as follows:

	Length Miles
Canal	92.84
Siphons (16 total)	6.70
Alamo Powerplant (and penstock)	0.87
Pearblossom Pumping Plant (and discharge lines)	1.64
Lake Silverwood	1.99
San Bernardino Tunnel	3.38
Devil Canyon Powerplant (and penstock)	1.30
Devil Canyon Afterbay	0.12
	108.84

The San Bernardino Tunnel already has sufficient capacity for the planned enlargement because (1) MWDSC and San Gabriel Valley Municipal Water District purchased excess peaking capacity originally, (2) the tunnel was built slightly larger than specified for the convenience of the construction contractor, and (3) field tests and hydraulic studies show that the capacity is greater than indicated by the original design criteria. The contract amendments covering enlargement of the East Branch provide for some redistribution of San Bernardino Tunnel costs to reflect the redefined tunnel capacity; similar adjustments will be made for the portion of Lake Silverwood costs allocated to water transportation.

As presently planned, enlargement of the East Branch will be carried out in two stages. The first stage, adding

about 750 cfs of capacity, is scheduled to be operational in 1992. The second stage, estimated to be needed by 2004, would bring the enlargement capacity to the agreed 1,500 to 1,683 cfs.

In the first stage, most of the canal lining will be raised by 4 to 5 vertical feet. (Over half of this work is currently underway in conjunction with improvement work between Alamo Powerplant and Pearblossom Pumping Plant; see Chapter IV.) Canal checks will be modified as necessary, and one bridge and one pipeline crossing the Aqueduct will be raised. All siphons will be enlarged to their ultimate capacities by adding additional barrels.

The second stage will require raising about 17 additional bridges and drainage overchutes and raising the canal operating road by about 1 foot. Some additional modifications of check structures will also be required in the second stage.

The existing Alamo Powerplant includes one generating unit matched to the present canal capacity of 1,643 cfs. A second unit with a capacity of 1,506 cfs will be added as part of the enlargement. Because excess flows could be bypassed via the Cottonwood Chutes, the second unit at Alamo Powerplant could be delayed. Studies will be conducted to determine the schedule for the second unit. Pearblossom Pumping Plant will be expanded to house five additional pumping units, each with a design capacity of 375 cfs. Three units will be installed initially, one of which will be a spare unit not considered part of the enlargement. The spare unit, which would have been installed regardless of enlargement plans, will be treated as a Project transportation facility and its cost will be reimbursed through the capital cost component of the Transportation Charge.

Mojave Siphon Powerplant could be constructed along with the enlargement facilities, but the timing and staging are still under study. A portion of the Mojave Siphon Powerplant will be considered a Project transportation facility, and a portion will be part of the East Branch enlargement.

Enlargement of Devil Canyon Powerplant will entail construction of a second penstock and extension of the plant to house two new 800-cfs turbine-generator units. Studies are underway to determine whether one or both units should be installed initially. The first stage of construction will also include a 300-cfs bypass to maintain limited service for MWDSC through the Rialto and Santa Ana Valley Pipelines in the event the generators cannot be operated. DWR is also studying the feasibility of constructing additional afterbay storage capacity for Devil Canyon Powerplant.

Coastal Branch, Phase II

The Phase I Coastal Branch facilities, consisting of the first 15 miles leading from the California Aqueduct, were constructed in the late 1960s to serve agricultural water contractors near Avenal Gap. The Phase I facilities include Las Perillas and Badger Hill pumping plants.

Phase II, to be constructed later, would transport SWP water to Santa Barbara and San Luis Obispo County Flood Control and Water Conservation Districts (SBCFC&WCD and SLOCFC&WCD). Phase II would extend approximately 81 miles to a terminus near Santa Maria, and Phase II would include Devil's Den, Sawtooth, and Polonio pumping plants and San Luis Obispo Powerplant.

After a $102 million bond issue for the construction of SWP water distribution facilities was rejected by Santa Barbara County voters in March 1979, SBCFC&WCD took two actions. First,

SBCFC&WCD voted in 1981 to reduce its maximum annual entitlement from 57,700 acre-feet to 45,486 acre-feet, thus reducing its share of Aqueduct capacity by 17 cfs. Second, SBCFC&WCD evaluated local projects that may qualify for SWP funding under DWR guidelines. As described earlier in this chapter, eight contractors have expressed interest in purchasing all, or a portion of, the relinquished capacity and entitlement water. SBCFC&WCD is also considering reacquiring some or all of this capacity.

In early 1984, the two districts requested a further two-year delay, until July 1986, for a decision to initiate design and construction of Phase II. In May 1986, SBCFC&WCD and SLOCFC&WCD requested a further delay, until October 1, 1986, of the initiation of preliminary design of, and draft EIR preparation for, the Coastal Branch. Citing Article 45 provisions of the water supply contracts, the agencies made the request to allow time for public hearings and consultation with their member units. DWR approved the delay request. If Phase II of the Coastal Branch was initiated in 1986, delivery of SWP water is not likely to begin before the end of 1993 unless special action is taken.

Because of the uncertainty regarding the timing of construction and operation of Phase II of the Coastal Branch, no costs are projected for this facility in the financial analysis presented in Chapter VII or in Appendix B of this bulletin.

San Joaquin Valley Drainage Program

DWR continues to monitor agricultural waste waters in the San Joaquin Valley, emphasizing vicinities within the State service area with the most severe drainage problems. Expanded monitoring includes new agricultural drainage systems, and sampling is intensified in areas where high selenium concentrations have been found. Finding toxic elements, such as selenium, in drainage waters has rendered the master drain system impractical until these toxins can be removed or reduced to harmless levels. Previously, the master drain system was considered the best long-term solution for drainage disposal.

The use of evaporation ponds as an interim solution has increased, but pressure by regulatory agencies to prevent environmental damage has made construction and operation of these ponds very expensive. The use of on-farm water conservation practices has also been increased in an effort to reduce the volume of drainage water produced.

DWR also provides assistance to local agencies in determining sources of toxic constituents and recommends actions that would minimize environmental problems. DWR is also keeping up with the research and evaluation of various treatment methods that might reduce the toxins prior to reuse or disposal of drainage waters. Studies of drainage water reuse for irrigation, marshes, and desalting are still in progress.

Coordination with the USBR's drainage studies has increased; DWR now has two full-time people on an interagency study team. The USBR is currently working on three programs related to drainage: (1) development of a short-term solution of the immediate problem in Westlands Water District, (2) development of a long-term solution to San Joaquin Valley drainage problems, and (3) development of a cleanup and disposition plan for Kesterson Reservoir.

Los Banos Desalting Facility

The alternatives for disposing of agricultural drainage water in the foreseeable future have been reduced to land disposal, treatment, or abandonment of land. The continuing operations at the Los Banos Demonstration Desalting Facility are investigating the technology and economics of treatment by desalting. The systems in operation at the test facility have the potential for reducing the costs of this type of treatment.

Work on the Los Banos Demonstration Desalting Facility began in 1980-81, using funding from the Energy and Resources Fund (a non-SWP fund). The majority of the cost of the facility has been funded from the California Water Fund. As explained in Chapter VII, the costs of the desalting facility are not charged to the SWP contractors; the costs will either be recovered from beneficiaries of a future San Joaquin Valley drainage project, or be considered nonreimbursable costs if repayment contracts are not executed.

The plant began operation in the fall of 1983. The principal area of investigation during 1984 and the first half of 1985 was pretreatment to remove suspended material and silica.

The marsh pond (biological) pretreatment system was very successful in reducing silica concentrations and partially successful in reducing suspended material. Because of selenium uptake in vegetation, the marsh pond system would not be feasible in large-scale application; the marsh pond system was taken out of operation before selenium concentrations reached hazardous (statutory) levels in the pond sediment. At the present time, only parts of the vegetation contain levels of selenium high enough to require disposal in a Class I facility.

The physical/chemical pretreatment system has achieved stable operation after a variety of dosages of lime, alum, and several polymers were tested. A combination of alum and a cationic polymer results in a desalting feed water sufficiently low in turbidity and silt-density index (plugging factor) for operation of the reverse-osmosis units. The ion-exchange water-softening system is now fully operational. An operational cycle, developed from operation of the small bench-scale columns, is now used in conjunction with the reverse-osmosis units that supply the brine for regeneration.

In June 1985, a small 10-gallon-per-minute pilot reverse-osmosis unit began operation. The unit ran for 1,500 hours as a test of pretreatment system performance and membrane selenium rejection. The test was completely successful. There was no loss of productivity due to fouling, and selenium removal was approximately 99.7 percent.

Following completion of some final mechanical modifications to plant systems, two of the three main reverse-osmosis units were put into operation in mid-December 1985. In addition to the two units, an electrodialysis brine concentrator was put into service. Continuous full operation of the ion-exchange, reverse-osmosis, and brine-concentrator systems now has been accomplished. Initial reverse-osmosis membrane performance has been equal to or better than predicted.

One of the consequences of high concentrations of selenium has been the prohibitively high cost of evaporation ponds. Economic studies show that it may be less costly to add a fourth stage of desalting using a mechanical evaporation process, which substantially reduces the area of evaporation ponds needed for final disposal. To study this concept, a 50,000-gallon-per-day vapor compression

evaporator (VCE) is being added to the process train to test a variety of feed waters. In a commercial-size facility, VCE units may be powered by heat from solar salt-gradient ponds.

The north solar pond was put into operation using artificial brine that chemically simulates agricultural drainage water (without selenium) concentrated 32 times. The pond was stratified in September and began to heat immediately. It reached a maximum of 142° F before the sun angle declined to a point at which solar insolation ceased. The minimum temperature was reached in early January 1986; then the pond began to heat again. By mid-June, it reached the design temperature (180° F) to begin operation of the Rankine-cycle generator. The pond has been extremely stable and has behaved exactly as predicted by computer models and the experience of others. The composition of San Luis Drain water is well suited to solar pond use.

Operation during 1986-87 will concentrate on (1) long-term operation of the entire treatment train and (2) optimizing performance to achieve the lowest possible product water cost. Testing of the fourth stage (VCE) as a substitute for the evaporation pond area will bring studies of this system to a level equal with that of other plant treatment systems.

Project Purpose Cost Allocations

Appendix D to Bulletin 132-85, submitted to the Legislature early in 1986, does not include any new or revised project purpose cost allocations. However, the SWP capital costs allocated to recreation and fish and wildlife enhancement reported in the appendix are updated through 1984. Copies of Appendix D to Bulletin 132-85 are available from DWR upon request.

In 1979, the Department of Finance issued a staff report about the project purpose cost allocation methods used by DWR to allocate SWP costs under the Davis-Dolwig Act. If implemented, the report's recommendations would significantly reduce SWP costs allocated to recreation and fish and wildlife enhancement.

A consultant's report about SWP facility cost allocation procedures was completed in January 1985 . In general, the consultant agreed with DWR's cost allocation procedures. A copy of the report was sent to the Department of Finance in February 1985. DWR is considering an offset between the amount owed to the SWP by the State for Project costs allocated to recreation and the amount the SWP owes the California Water Fund.

Fish Protection Agreement

During 1985, DWR and the Department of Fish and Game continued their efforts toward developing a fisheries mitigation agreement for operation of the Banks Delta Pumping Plant. These efforts included developing a plan to determine the level of acceptable fishery losses as well as listing actions or programs that could be implemented to lessen those losses. The draft agreement, including the proposed mitigation activities, reflects input from the SWP water contractors' representatives and various fisheries groups that have expressed an interest in this program. It is anticipated that the negotiations will be completed and the agreement executed by both departments in 1986.

Water Rights Management

The SWP currently operates in the Delta under conditions set forth in the SWRCB's Decision 1485, issued in August 1978, and intended to remain in effect until the SWRCB issues new standards in 1988. This decision resulted in coordination of terms for

SWP and CVP water rights permits and establishment of Delta water quality standards to ensure protection of water rights and fish and wildlife resources. Decision 1485 requires implementation of a program to monitor Delta water quality. The monitoring program and associated special studies conducted by DWR have contributed to a better understanding of the effects of SWP operation on the ecology of the Delta. The program has also provided information that will help determine future operating criteria to protect the Bay-Delta waters when the SWRCB reopens hearings in 1987.

Delta Water Quality Monitoring and Reporting

On a biweekly basis during 1985, DWR sampled an average of 32 water quality parameters at each of 28 sites throughout the Delta estuary. Continuous water quality profiles of the main channels were also recorded biweekly using automated instrumentation aboard DWR's laboratory workboat, the San Carlos. Special studies conducted by DWR during 1985 included intense monitoring of the central Delta during a SWRCB-sanctioned controlled flow experiment; these studies examined changes in water mass residence times and the effect on the growth of phytoplankton, the first link in the Delta aquatic food chain. DWR personnel also conducted special studies on factors controlling algal growth rates, including reactions to the presence of herbicides commonly found in Delta waterways.

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.

The network of six continuous, multiparameter recorders, located onshore at strategic locations throughout the Delta, is now generating water quality data. Software for on-site computerized equipment is complete, and a storage and retrieval program for the reduced water quality information is being developed. Three sites (Antioch, Mallard Slough, and Rio Vista) have telemetry capabilities.

Water quality information is stored in DWR's Water Data Information System, and the Environmental Protection Agency's "Storet". Basic data for 1984 were retrieved and transmitted to the SWRCB with DWR's analysis. Copies of 1975 through 1984 data tabulations are still available. DWR is cooperating with the SWRCB in developing an electronic data processing system common to all State agencies. These data will become an important reference for future Delta study and evaluation programs.

Suisun Marsh

Among the requirements for Suisun Marsh, stipulated by Decision 1485, was the development of a coordinated protection plan for Suisun Marsh water quality. DWR worked through the Suisun Marsh Technical Committee of the Interagency Ecological Study Program for the Sacramento-San Joaquin Estuary in developing the required Plan of Protection. The plan was documented with an EIR published in 1984. The plan provides for staging of construction, and includes testing periods for evaluation of constructed facilities. This concept allows required Marsh water qualities to be obtained while minimizing disruption to the Marsh. The Suisun Marsh Technical Committee continues to coordinate implementation of the plan.

In addition to the development of the plan, Decision 1485 directed the immediate construction of specific facilities, referred to as the Initial

Facilities. These included improvement of Roaring River Slough and construction of the Morrow Island Distribution System and the Goodyear Slough Outfall Structure. These facilities became operational in 1981, and work was completed with the construction of the Roaring River Slough fish screens in 1983.

The Suisun Marsh Salinity Control Gates (SMSCG) is the next feature scheduled for construction. The construction access road was partially completed in 1984; bids for construction of the remainder of the road and the structure itself were opened in May 1986. In July 1985, an addendum to the final EIR was published, documentingthe poor foundation conditions at the original site, which forced a reevaluation of the project. Now the control structure will be built in Montezuma Slough, immediately adjacent to the Roaring River Slough intake. Individual components of the SMSCG will be built off site on concrete rafts, floated to the site, and sunk onto a prepared foundation. Principal on-site construction in 1986 will consist of completion of the access road and levee setback. Completion date for the SMSCG is August 1988.

Another component of the Suisun Marsh Plan of Protection is a monitoring program designed to assure that water quality objectives are being met. Monitoring equipment is in place, and information is being gathered.

Negotiations have been completed for an agreement between the Department of Fish and Game, the Suisun Resource Conservation District, the USBR, and DWR to define water quality standards for the Marsh and construction staging. Congressional authorization for the USBR to sign the agreement is expected in 1986. Subsidiary agreements covering details of both the mitigation and monitoring programs have also been completed, but implementation of these agreements has been delayed until the primary agreement is in effect.

Marsh quality standards are specified in Decision 1485, and were originally scheduled to become effective in October 1984. In December 1985, at the request of the USBR, the SWRCB agreed to defer application of the standards until 1988. The standards will then be phased in on a schedule similar to the one in the agreement.

Western Delta Municipal Water Users

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

Each contract provides that DWR compensate each entity for its 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.

Both agencies had below-average water supplies during the 1985 water year as defined in the contracts. During the 1985 water year, water of usable quality was available to CCWD for 38 days, compared to the contract standard of 142 days. For the City of Antioch, usable water was available for 158 days, compared to the standard of 208 days. The deficiencies (104 days for CCWD and 50 days for Antioch) were offset by credit days accumulated during prior years of above-average supplies. These subtractions reduced the credit balances of CCWD and Antioch

to 274 days and 348 days, respectively, at the end of the 1984-85 water year.

Western Delta Industrial Water Users

Several industries near Antioch and Pittsburg use offshore water for both processing and cooling. When offshore water quality is below the industries' requirements, the Contra Costa Canal provides a substitute supply. These industries have not agreed to participate in contracts similar to those signed by municipal interests. The reasons cited include (1) belief that the SWP should provide compensation for all loss of offshore water regardless of who is responsible, and (2) desire that the SWP guarantee the quality and quantity of Contra Costa Canal water when it is used as a substitute supply.

In August 1980, DWR resumed negotiations with Louisiana Pacific-Fibreboard and Crown Zellerbach corporations. A draft contract was submitted by the corporations in October 1982. In May 1983, Fibreboard submitted a new draft contract. Negotiations are still under way.

Delta Agricultural Water Users

For more than a decade, DWR has sought to contract with Delta agricultural agencies for the SWP to meet water quality standards necessary for reasonable beneficial uses throughout each agency's respective area, with relaxation of these standards during dry and critical years. In return, the agencies would make annual payments for services in excess of any SWP mitigation obligation.

Beginning in 1974, six agencies representing agricultural water interests in the Delta replaced the Delta Water Agency, which ceased to exist December 31, 1973. In 1981, contracts were executed with the North Delta Water Agency and East Contra Costa Irrigation District. Negotiations with the other agencies were inactive for several years until 1984, when the Central Delta Water Agency (CDWA) and South Delta Water Agency (SDWA) both indicated an interest in reopening negotiations. Negotiations with CDWA and SDWA are now proceeding.

SWRCB Decision 1485 did not establish water quality standards for the southern Delta because insufficient information was available, and because negotiations among the USBR, SDWA, and DWR were under way. If negotiations were not successful by January 1, 1980, the SWRCB was to have intervened. However, this date has been repeatedly extended at the request of all parties, even though SDWA has filed suit against the SWRCB for failing to include southern Delta standards in Decision 1485.

Following a March 1982 workshop, the SWRCB informed SDWA that it must petition the SWRCB if it wishes any action regarding the adoption of standards. SDWA responded by criticizing this position, restating its position that the SWRCB must adopt standards for the southern Delta, and stating that negotiations had come to an impasse.

On July 22, 1982, DWR was served in a lawsuit filed by SDWA against DWR and the USBR over the effects of SWP and CVP operations on water quantity and quality in the southern Delta. As noted, negotiations are now actively under way between DWR and SDWA. This suit may be dropped as part of the resolution of issues covered by these negotiations. (See the discussion of this case in the "Litigation" section of this chapter.)

Davis-Grunsky Act

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 construct the State Water Resources Development System, $130 million was reserved specifically for distribution under the Davis-Grunsky Act. Funding is drawn from the California Resources Development Fund and the California Water Fund. Repayment of loans is made to the California Water Resources Development Fund.

Under the program established by the Davis-Grunsky Act, financial assistance is given to local agencies to (1) overcome and avoid public health problems in their water supplies, (2) develop new water supplies, and/or (3) encourage development of public recreation and fish and wildlife enhancement. Program funds are also available for feasibility report preparation. Under certain circumstances, the State may participate as a partner with an applicant. 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 and statewide benefit; if a loan is requested, inability to finance from other sources is also considered.

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.

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

- 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;
- construction loans for local water projects;
- loans for acquisition of reservoir sites for proposed water projects;
- loans for feasibility reports about proposed projects for which construction loans are requested 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 at the time of the loan, which caused the rate to vary from loan to loan. To be more equitable to the low-income agencies the program was designed to aid, the interest rate was changed to an overall rate of 2.5 percent, with a maximum repayment period of 50 years. In some instances, at the discretion of DWR, agencies were given an initial 10-year deferment on loan payments. The accumulated interest was then amortized over the repayment period.

Of the $130 million reserved under the Burns-Porter Act, $115.3 million has been disbursed, through December 31, 1985, for loans, grants, and administrative costs. DWR distributed about $36,000 of loan funds under the Davis-Grunsky Act program during 1985.

DWR is not accepting new loan or grant applications at present, pending action

upon applications yet to be approved. The principal actions under the Davis-Grunsky Act program in 1985 were:

- Tuolumne County Water District No. 1, Tuolumne County, completed its water system improvement project. The District returned to DWR $6,597 of unused Davis-Grunsky funds.

- Home Gardens County Water District, San Bernardino County, received the final $5,000 of a $25,000 loan authorized for a feasibility report about a water supply and distribution system. The formal application and feasibility report were submitted and DWR's Report of Findings was approved by the California Water Commission.

- Union Public Utility District, Calaveras County, received $31,000 under a $500,000 loan authorization for water distribution improvements. This completes the State's financial participation in the improvement project with a total cost of $497,554. The project was completed in 1985 and has been inspected.

- Strathmore Public Utility District, Tulare County, completed its formal application for a $2.2 million construction loan. The loan would partially finance construction of a $3.0 million project to provide drinking water to the communities of Lindsay and Strathmore. A combination of funds from the Davis-Grunsky Act Program and the Safe Drinking Water Bond Act of 1984 is proposed for the project.

- A preliminary determination of eligibility request for a $2 million construction loan was submitted by the City of Grass Valley, Nevada County. The proposed project would improve the capability and reliability for the city's water supply.

- Littlerock Creek Irrigation District, Los Angeles County, also submitted its preliminary determination of eligibility request for a construction loan. The proposed $3.76 million loan is for rehabilitation of Littlerock Dam, jointly owned with Palmdale Water District, and for the upgrading and expansion of the water distribution system to serve the community.

Coordinated Operation Agreement

The USBR and DWR reached accord on a Coordinated Operation Agreement (COA) on May 20, 1985. Almost immediately Congressional representatives initiated legislation and hearings to approve the agreement. On May 22, 1985, Senator Pete Wilson submitted Senate Bill 1192, which would authorize the Secretary of the Interior to execute and implement the agreement. This bill is presently in the Senate Committee on Energy and Natural Resources. Congressman George Miller, Chairman of the House Subcommittee on Water and Power Resources, held hearings about the COA in Washington, D.C. on May 23, 1985. On July 31, 1985, the full House Interior and Insular Affairs Committee approved House Resolution (HR) 3113, sponsored by Congressmen George Miller, Tony Coelho, and Richard Lehman; and on September 9, 1985, the House unanimously passed the resolution and sent it to the Senate where it awaits action.

Section 1 of HR 3113 includes language almost identical to that of Article 11 of the COA, which directs the Secretary of the Interior to operate the CVP in conformity with State standards for Delta water quality. This section also specifies that water quality at the intake to the Contra Costa Canal may fall below Decision 1485 standards only when the Governor declares emergency drought conditions.

The second section specifies that

federal costs associated with compliance with State standards shall be non-reimbursable CVP costs. This section also directs the Secretary to prepare a cost allocation study of the CVP and to implement the allocation prior to January 1, 1987.

Section 3 of H.R. 3113 authorizes and directs the Secretary to execute and implement the COA, provided:

- that the contract discussed in Article 10(h) of the agreement for purchase and conveyance of CVP water shall become final only after congressional approval;

- that if there is insufficient water to meet the CVP's contractual commitments the shortage shall be apportioned (unless prohibited by existing contracts or law) to all users by the same percentage; and

- that the Secretary can exercise the termination provisions within the agreement only after having submitted a report to Congress explaining the reasons for termination and including the views of the Administrator of the Environmental Protection Agency and the Governor of California.

HR 3113 was drafted largely by representatives of the CVP and SWP water contractors, House committee staff with numerous contacts in DWR and the USBR, and various interest groups. The congressional authors were deeply involved with the final draft.

The Senate Committee on Energy and Natural Resources, after hearings, amended HR 3113 on March 25, 1986 and sent it to the Senate floor. The Senate version of HR 3113 contains the language of SB 1192, authorizing execution of the COA, but does not contain the provisions of HR 3113. Authorization to execute the Suisun Marsh Agreement (dated November 1, 1985) is included, as is $600 million of additional Small Reclamation Act authorization.

The Senate passed HR 3113 on July 16, 1986. The bill will be considered by a conference committee.

The draft EIS/EIR for the agreement was released to the public on September 18, 1985. The public review period ended on November 13, 1985. During this review period DWR and the USBR conducted joint public meetings in Sacramento and Concord. The joint final EIS/EIR was publicly distributed on July 8, 1986 incorporating testimony from the two public meetings and from the letters each agency has received.

State Legislation

No major water bills were introduced during 1985. However, several bills of interest were passed and signed by the Governor. These include:

- AB 955 (Peace) requires DWR to develop an emergency plan for continuing water exports in the event of Delta levee failures, and to submit the plan to the Legislature for adoption by January 1, 1987. Signed, Chapter No. 1271 of 1985.

- AB 1029 (Kelley) allows DWR to enter into contracts providing financial assistance for local water conservation or reclamation projects, making available additional water for the SWP. Signed, Chapter No. 938 of 1985.

- AB 1156 (Areias) enacts the Ground Water Recharge Facilities Act, authorizing DWR to make grants to local public agencies involved with water management. Signed, Chapter No. 1034 of 1985.

- SB 400 (Keene) enacts the Fisheries Restoration Act of 1985,

which requires the California Water Commission to include recommendations for study programs to correct fish and wildlife problems caused by diversions. It also allocates $5.0 million of Tideland Oil revenues to the Fisheries Restoration Account in each of the fiscal years 1985-86 and 1986-87. Signed, Chapter No. 1236 of 1985.

- SB 674 (Nielsen) directs DWR to conduct studies of the Sacramento River and the Feather River and tributaries north of Sacramento. Signed, Chapter No. 1453 of 1985. The Governor deleted $2.2 million, and authorized $100,000 for an alternative bank protection demonstration project at Woodson Bridge on the Sacramento River.

Litigation

The following are summaries of the principal litigation involving the SWP during the report period:

Control Over SWP Operations

Department of Water Resources v. Contra Costa County Water Agency, et al., filed June 22, 1979, San Francisco Superior Court No. 765609. This suit was filed by DWR against the Contra Costa County Water Agency, North Delta Water Agency, Central Delta Water Agency, South Delta Water Agency, Byron-Bethany Irrigation District, City of Vallejo, Union Properties, and several landowners in the Delta. The suit seeks a declaratory judgment that the defendants must contract with DWR and pay for SWP water used in excess of that which would be available in the absence of the SWP. The suit also seeks money damages to compensate DWR for water illegally used during July and August of 1977. DWR's actions are based upon quasi-contract and statutory obligations (Burns-Porter Act, Central Valley Project Act, Delta Protection Act, and Watershed of Origin Statutes). The Attorney General has authorized DWR to represent itself in this case.

North Delta Water Agency, East Contra Costa Irrigation District, and the City of Vallejo have been dismissed with prejudice from the lawsuit as they have contracted with DWR. Discovery is proceeding. The January 29, 1985 decision by Judge Wonder on DWR's Motion for Summary Adjudication of Issues primarily found that the legal and factual issues were so intertwined that no significant legal rulings were possible without a trial. This decision clears the way for trial, which is scheduled for October 1986.

South Delta Water Agency (SDWA) v. United States, et al., filed July 9, 1982, Federal District Court for the Eastern District of California CIV S-82-567 MLS, was filed in Sacramento by the SDWA against the United States, the Department of the Interior, the USBR, and DWR. It involves the effects of the CVP and SWP on the southern Delta and the Department of Interior's designation of the New Melones Reservoir service area.

SDWA alleges (1) that CVP operations in the San Joaquin River unlawfully reduce the quantity of water and diminish the quality of water flowing in the San Joaquin River to the southern Delta, (2) that operation of the CVP and SWP pumps violates southern Delta rights by lowering water levels, reversing flows, and diminishing the influence of the tides, and (3) 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 which are determined in this litigation. Trial is scheduled for April 1987.

Delta Water Cases

United States of America v. State Water Resources Control Board, filed November 13, 1978, Court of Appeal, First Appellate District, Division One, No. A027690. This and seven other cases have been brought to challenge the merits of SWRCB Decision 1485, which establishes conditions of water rights permits of the SWP and CVP and the SWRCB's revised water quality control plan for the Delta and Suisun Marsh. Six other cases have been brought to invalidate the EIR on which Decision 1485 and the revised water quality control plan are based.

DWR is either a real party in interest or an intervenor in all 14 of these cases, in which the Attorney General has authorized DWR to represent itself. The cases have been coordinated. On April 24, 1981, the court bifurcated the EIR cases from those that challenged Decision 1485 on its merits. The EIR cases were stayed until final judgment on the merits case.

The trial court issued its decision on April 13, 1984, ruling generally that SWRCB failed to proceed in the manner required by law and failed to support Decision 1485 and the plan with adequate findings. The decision was appealed and the Court of Appeals issued its decision on May 28, 1986.

The court ruled that the SWRCB has broad authority to condition the water right permits of the SWP and CVP. It also ruled that the SWRCB may limit diversions from the Delta by the State and federal projects to protect agricultural, municipal, and industrial water supplies in the Delta and to protect fish, wildlife, and other aspects of the environment in the Delta, Suisun Marsh, and San Francisco Bay. The court relied on a 1983 California Supreme Court decision to allow the SWRCB to apply the public trust doctrine to diversions for the SWP. The public trust doctrine places responsibility on the courts and the SWRCB to exercise continuing supervision over the public uses of navigable waters for the purpose of protecting navigation, commerce, fish and wildlife, recreation, and other instream uses of such waters. The extent and manner in which the SWRCB exercises its authority under these decisions will define the limits on the State and federal projects' ability to use stored water and divert water from the Delta.

Some of the parties have petitioned the California Supreme Court to review the case. It is uncertain whether the Supreme Court will grant the petitions.

Seepage Suits

During 1975 and 1976, several suits were filed against the State and the United States by more than 25 landowners adjacent to the Sacramento and Feather Rivers for damages alleged to have been caused by erosion and seepage in March and April of 1974. The plaintiffs claim damages in excess of $30 million, resulting from operation of the CVP and SWP.

One such case is H. S. Sanborn, et al. v. United States, filed March 22, 1976, U. S. District Court CIV 5-76-154, a complaint in inverse condemnation, negligence, and trespassing. The claim arises from damages allegedly caused by high flows in the Sacramento River during March

and April of 1974 due to a heavy and late storm. The levels were partially controlled by releases from Shasta Lake and diversions from the CVP's Trinity River Division. The plaintiffs contend that the CVP kept the river levels high for an extended period, causing erosion and seepage that damaged their orchards and crops. The defendants also sued the State, claiming that DWR participated as a joint venturer in the planning and operation of the CVP.

In May 1984, the U. S. Court of Claims rejected the claim against the United States, on the ground that a one-time flooding is not a taking of a property right in inverse condemnation.

Plaintiffs then turned to the State courts, seeking a summary judgment on the allegations that DWR was a joint venturer, with the United States, in the CVP and that flood control operations were a joint responsibility. Identical actions were initiated in Colusa County and Sutter County, and denied on April 23, 1985, and April 30, 1985, respectively.

Plaintiffs continue to pursue a theory of negligence and inverse condemnation in the State courts. The first case (John E. Baird, et al.) is scheduled for trial in fall 1986.

Kern River Intertie

River West Inc. v. State of California, et al., filed August 5, 1980, in San Francisco and now in Kern County Superior Court, No. 174778, involves local water rights and DWR's operation of the Kern River Intertie and the California Aqueduct. The plaintiffs have sued DWR, upstream landowners on the Kern River, and local water agencies, alleging infringement upon the Kern River water rights of the plaintiffs. Plaintiffs contend, as to DWR, that water other than flood water and water subject to their appropriation rights is being accepted into the Intertie contrary to the Intertie's flood control purpose.

On December 29, 1982, a related case, involving the same issues, Kern Property Corporation v. State of California, acting through Department of Water Resources, et al., Kern County Superior Court No. 181265, was filed. DWR and the other defendants in the River West case have filed answers.

Electrical Power Cases

State of California v. Los Angeles City Department of Water and Power (LADWP), filed September 26, 1978, Los Angeles Superior Court No. C-255911. DWR filed this suit to obtain monies owed by LADWP under the Cooperative Development Contract for hydroelectric facilities at Castaic Lake. In July 1975, LADWP withheld approximately $69,000 from the Peaking Capacity Foregone payment owed to DWR. In subsequent years, LADWP has withheld larger amounts from Peaking Capacity Foregone payments. LADWP has asserted that a clause that permits a payment reduction, if there is a 45-day or longer failure to schedule water through the Angeles Tunnel, has been triggered in these instances.

LADWP and DWR settled the case in 1985. As part of the settlement, the contract was amended and LADWP paid DWR $1,062,780 plus interest from January 1, 1982. The case has now been dismissed.

Southern California Edison Company (SCE) v. Los Angeles Department of Water and Power, filed October 18, 1979, Los Angeles Superior Court No. C-301654. This suit was filed by SCE to compel LADWP to continue to meet its obligations to supply DWR with electrical power under the Suppliers Contract. LADWP has claimed that under the legal 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 (PGandE) and the San Diego Gas and Electric Company, suppliers under the contract along with SCE and LADWP, are named as defendants in the lawsuit. DWR intervened in the case.

On November 7, 1979, a preliminary injunction was issued requiring LADWP to continue supplying power under the Suppliers Contract. LADWP continued supplying power to DWR until the termination of the Suppliers Contract in 1983. The case is in the discovery stage.

State of California v. Oroville Wynadotte Irrigation District (OWID), filed July 23, 1982, Sacramento County Superior Court No. 305174. DWR filed this suit to obtain a writ of mandate to compel OWID to prepare an EIR on the proposed Kelly Ridge II Powerplant. If it proceeds as proposed, the Kelly Ridge II Powerplant would divert 50 cfs of water around Lake Oroville and the Hyatt Powerplant. DWR currently uses the water to generate approximately 20 million kWh of energy annually at the Hyatt plant. DWR contends that OWID violated the California Environmental Quality Act (CEQA) by failing to consult with DWR during preparation of its Initial Study of the Kelly Ridge II Project. DWR also contends that an EIR should have been prepared to examine the significant environmental impacts of the proposed project. These include the possibility that DWR would have to resort to additional consumption of fossil fuels and other nonrenewable resources to replace lost energy and firming capacity. Final judgment in favor of OWID was entered October 20, 1983. DWR appealed and oral argument took place on January 23, 1985, before the Third Circuit Court of Appeal. The Court of Appeal ruled in favor of OWID with regard to the CEQA case and also granted OWID attorney's fees on the appeal portion of the case.

MCR Geothermal Corporation and Entex Energy Operations, Ltd. v. State of California, filed August 28, 1985, Sacramento Superior Court No. 332642. The plaintiffs have filed a complaint against DWR for $9.5 million. They argue that they are owed this sum because DWR failed to have Bottle Rock Powerplant ready by the scheduled commercial operating date. Discovery is in process.

Water Supply Contract Cases

San Luis Obispo County Flood Control and Water Conservation District (SLOCFC&WCD) v. State of California, filed July 26, 1982, San Luis Obispo County Superior Court No. 56635. In 1971, DWR agreed to an amendment to the water supply contract with Kern County Water Agency (KCWA) allowing KCWA to shift delivery of 50,000 acre-feet of entitlement water from the main aqueduct to Reach 31A on the coastal stub. The delivery was to be made within the existing capacity already allocated to KCWA in the coastal stub. The contract amendment provided that costs would not be reallocated provided that the change in deliveries did not cause an increase in costs to any other water contractor.

SLOCFC&WCD claims that as a result of KCWA's right to increase entitlement deliveries through Reach 31A, DWR should have recalculated the proportionate use of facilities factors for that reach and should have reduced the charges to SLOCFC&WCD. Santa Barbara County Flood Control and Water

Conservation District filed a similar suit, Santa Barbara County Flood Control and Water Conservation District v. State of California, filed August 4, 1982, Santa Barbara County Superior Court No. 142195.

The State cross complained against Kern County Water Agency (KCWA). KCWA filed a cross complaint against the State, SLOCFC&WCD, and Berrenda Mesa Water Storage District for an adjudication of rights under the various contracts involved. There have been intermittent negotiations among the parties for settlement. On March 29, 1985, the Attorney General filed a petition for coordination of the two cases. On July 1, 1985, the judge heard arguments on the petition and ordered the two cases to be partially coordinated. Efforts to settle the cases are continuing.

Condemnations

State of California v. Norman P. Andresen, et al., filed December 4, 1981, Merced County Superior Court. This case involves condemnation action for 689 acres of property adjacent to San Luis Dam for repair and maintenance purposes. The property includes a rock quarry. The State's appraisal was $248,000.

On June 27, 1985, Merced County Superior Court rendered judgment for $3.2 million plus interest, costs, and attorney's fees to Andresen. Subsequently, prejudgment interest was stipulated to be $1.5 million and, on September 5, 1985, the court awarded an additional $1.1 million in attorney's fees and $87,000 in court costs to the defendant. The State filed a notice of appeal for the entire case.

Chapter IV

DESIGN, RIGHT OF WAY, AND CONSTRUCTION ACTIVITIES JULY 1, 1985 THROUGH JUNE 30, 1986

This chapter discusses the design, right of way, and construction work within the SWP construction divisions shown in Figure 8. A summary of DWR's program for safety review of SWP facilities is also included.

Design Activities

Table 12 summarizes the principal SWP design activities during the report period. Of these, the following were most significant in terms of design effort.

Thermalito Diversion Dam Powerplant

Design is nearing completion for this facility, which is being constructed under six separate contracts. The two largest contracts were awarded in late 1984 for constructing the power plant and furnishing the turbine, generator, and governor. Design work was completed in early 1986 for furnishing switchgear and the control switchboard, power distribution system, butterfly valves, and furnishing and installing the flowmeter. The contracts were advertised during the first half of 1986. The power plant is scheduled to become operational in 1987.

Bottle Rock Powerplant

Plans and specifications for corrections in the original design as well as modifications to enhance power plant operation were completed in February 1986 and advertised in March 1986. Construction will be completed in December of 1986. (See "Power Operations" sidebar, Chapter II.)

Suisun Marsh

Design of the Suisun Marsh Salinity Control Gates (SMSCG) was completed and the construction contract was

FIGURE 8: SWP CONSTRUCTION DIVISIONS

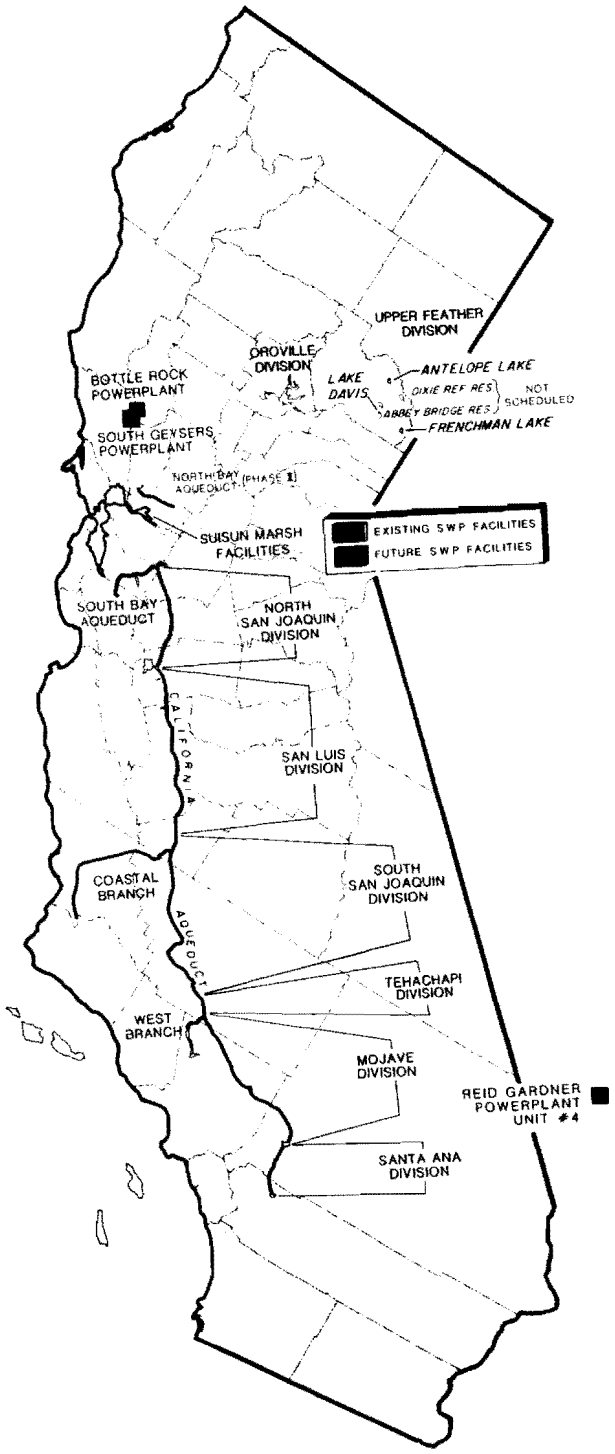


TABLE 12: SWP DESIGN ACTIVITIES IN PROGRESS, JULY 1985-JUNE 1986

Division or Facility	Activity	Begin Design	Complete Design
Energy Supply	Bottle Rock Powerplant		
	Completion Contract No. 2	Aug. 1985	Feb. 1986
	After-condenser	Apr. 1986	May 1986
	South Geysers Powerplant		
	Completion	Aug. 1981	(b
Oroville Division	Restroom Facilities and Modifications	Jan. 1984	Mar. 1986
	Oroville O&M Center Roof Restoration	Jan. 1986	Mar. 1986
	Edward Hyatt Powerplant		
	Road Intersection Modification	Apr. 1985	Apr. 1986
	Intake Trash Cover and Cart	Feb. 1984	(b
	Thermalito Diversion Dam Powerplant		
	Power Distribution System	Apr. 1985	Dec. 1985
	Acoustic Flowmeter	May 1985	Feb. 1986
	Penstock Shutoff Butterfly Valves	Jun. 1985	Dec. 1985
	Thermalito Diversion Dam		
	Repair Radial Gates and Stop Log Seals	Feb. 1985	Jun. 1986
	Thermalito Afterbay Dam		
	Pressure Relief System	Nov. 1984	Jan. 1986
	Dam Modifications	Aug. 1984	May 1986
	Thermalito Powerplant		
	Tailrace Slope Repair	Jan. 1986	May 1986
Suisun Marsh Facilities	Suisun Marsh Salinity Control Gates	Jul. 1983	Mar. 1986
North Bay Aqueduct	Cordelia Pumping Plant	Feb. 1982	Jan. 1986
	Barker Slough Pumping Plant	Apr. 1985	Apr. 1986
	North Bay Aqueduct Plants		
	Switchgear	Apr. 1985	Jun. 1986
	Power Transformers	Apr. 1985	Jun. 1986
	115-kV Circuit Breakers	Feb. 1986	Jun. 1986
	Acoustic Flowmeters	Jul. 1985	Jun. 1986
	Pipeline		
	Barker Slough PP through Travis Surge Tank	Sep. 1984	Nov. 1985
	Travis Surge Tank to Clay Bank Road	Sep. 1984	Mar. 1986
	Clay Bank Road through Ledgewood Creek	Jul. 1983	Jul. 1985
	Barker Slough Dredging	Jul. 1985	Jun. 1986
San Luis Division	Dos Amigos Units 5 and 6		
	Rewinding Stators	Jun. 1985	Aug. 1985
South San Joaquin Division	Buena Vista, Wheeler Ridge, and Chrisman Wind Gap Pumping Plants		
	Circuit Breakers	Jun. 1985	Sep. 1985
	Roof Repair - Expansion Joints	Feb. 1985	Mar. 1986
	Wheeler Ridge Pumping Plant		
	Impeller Replacement	Dec. 1985	Feb. 1986
	Wind Gap Pumping Plant		
	Spherical Pump Discharge Valve	Jan. 1984	Mar. 1986
Tehachapi Division	Edmonston Pumping Plant		
	Balancing Labyrinths	Jan. 1984	Mar. 1986
	Top Shaft Labyrinth Seals	Jan. 1984	Mar. 1986
West Branch	Castaic Operation and Maintenance Center		
	Tire and Oil Storage Addition	Jan. 1985	Jul. 1985
	Roof Repair	Feb. 1986	Oct. 1986
Mojave Division	Pearblossom Pumping Plant		
	Initial Contract	Aug. 1984	(a
	Pump Unit	Aug. 1984	(a
	Spare Stator Coils	May 1985	Sep. 1986
	Trashrake Modification	Feb. 1986	Jul. 1986
	Aqueduct Enlargement		
	Pearblossom Pumping Plant to Southern Pacific Railroad Bridge	Mar. 1986	Jul. 1986
	Mojave Aqueduct Modification		
	Myrick Siphon to Leona Siphon	Oct. 1984	Nov. 1985
Santa Ana Division	Devil Canyon Powerplant		
	Roof Repair	Mar. 1985	Aug. 1985

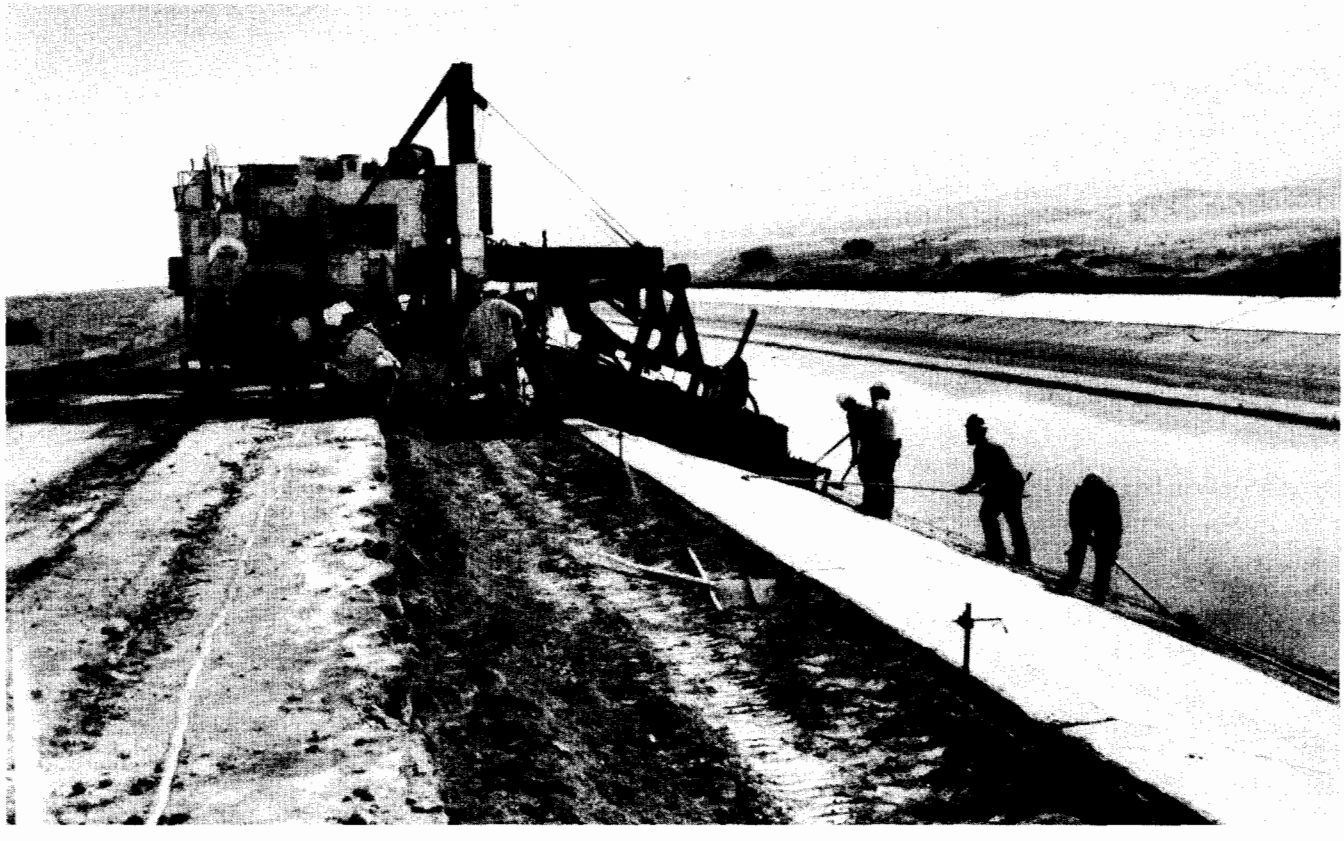
a) Schedule being established.
b) Design activity on hold pending future decision.

advertised in April 1986. Principal features of the structure include three 36-foot-wide radial gates, a 66-foot-wide flashboard opening for barge access, and a 20-foot-wide by 70-foot-long boat lock. Each of these features will be constructed in dry dock as individual modules, floated and towed to the site, then seated on a prepared foundation within Montezuma Slough. Completion of the access road from Collinsville Road to the structure site also will be included in the SMSCG contract. The SMSCG will be operational in 1988.

North Bay Aqueduct

North Bay Aqueduct Phase II design reached full speed in spring 1985. Main features of Phase II design are 23 miles of pipeline and pumping plants at Barker Slough and Cordelia Forebay. These features reflect the increased design capacity requested by Solano County Flood Control and Water Conservation District. The increased capacity is to convey water for the City of Vallejo and to provide excess capacity to meet possible future peak summer demands.

The Barker Slough pumping site was selected in fall 1984 on the basis of water quality and cost considerations; the new site will provide better water quality and reduce pipeline length by about 2 miles, compared to the former pumping site on Cache Slough. The pipeline is being constructed under five separate contracts; the first two contracts, representing about one-fourth of the total pipeline length, were awarded in September and December 1984. The third pipeline contract was awarded in December 1985. The fourth and fifth contracts were awarded in spring 1986. Cordelia Pumping Plant and Forebay design was completed in late 1985. Barker Slough Pumping Plant design was completed in spring 1986. Initial operation of the North Bay Aqueduct is planned for late 1987.



Workers smooth out freshly laid cement as part of the Mojave-Aqueduct modification.

Mojave Division

Design for raising the lining of the East Branch of the California Aqueduct began in October 1984. The lining will be raised by 4 feet between Alamo Powerplant and Pearblossom Pumping Plant. This work will provide improved operational capabilities in this reach and is scheduled to be completed in three contracts. Work also started on preliminary design for enlarging Pearblossom Pumping Plant to accommodate additional pumping units, including a spare.

In late April 1986, MWDSC signed a contract amendment providing for enlargement of the East Branch. DWR immediately began formulating a program for final design and construction. (See "East Branch Enlargement", Chapter III.)

Land and Right of Way

In 1985, DWR spent $265,000 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 December 1985 is $117.8 million. Twenty parcels (195 acres) were acquired during the year. The cumulative total of excess lands sold through 1985 is 849 parcels (13,641 acres).

Thirty-five new and existing leases were monitored through December 1985; annual revenues totaled $57,657.

Based upon a mitigation agreement between DWR, the Department of Fish and Game (DF&G), and MWDSC, transfer of 844 acres from DWR to DF&G in the Santa Ana Division has been completed. Another 1,280 acres are yet to be transferred. DWR is currently working on an agreement with DF&G and the 46th District Agricultural Association to complete the transfer to DF&G of 600 acres near Perris Dam.

DWR's 1985-86 program included the following land and right of way actions:

Energy Supply

- At Bottle Rock Powerplant, rights of way for the radio repeater and access road were acquired. Right of way along Bottle Rock Road will be acquired in 1986-87.

- Mitigation lands were acquired for South Geysers Powerplant. Rights of entry were obtained for the transmission line, but acquisition negotiations have been suspended pending resolution of the steam supply. The spoil site lease has been terminated.

North Bay Aqueduct

- A total of 68 parcels must be acquired for Phase II of the North Bay Aqueduct. Thirteen parcels were acquired in 1985-86, and 31 acquisitions remain to be completed. Negotiations are in progress to acquire the remaining necessary right of way, right of entry permits, or court ordered possessions to meet existing construction schedules.

South Bay Aqueduct

- Two parcels are being acquired to accommodate additional operation and maintenance activities related to slides.

Suisun Marsh Facilities

- Two parcels will be needed due to the revision of the control structure plans. DWR has obtained rights of entry to allow construction to proceed.

North San Joaquin Division

- DWR acquired two parcels for

permanent drainage required by the Division of Operations and Maintenance. Trial for the acquisition of Basalt Hill was completed, and the plaintiff was awarded $3.2 million, plus interest, attorney fees, and costs. (See "Litigation", Chapter III.)

South San Joaquin Division

- Nine parcels are being acquired for the California Aqueduct silt removal program.

West Branch

- Two parcels are being acquired for flood control improvement at Gorman Creek. Eminent domain action has been filed on these two parcels.

Construction Activity

Table 13 lists the major SWP construction contracts underway between July 1985 and June 1986. Highlights of construction activities during the report period included work on the following facilities.

Energy Supply

- Although Bottle Rock Powerplant began operating in February 1985, operational testing and interfacing of all equipment was not completed until spring 1986. An additional completion contract was started in May 1986 and is scheduled to be finished in December 1986.

- At South Geysers Powerplant the major efforts during 1985-86 were the turbine-generator building, completed in August 1986, as well as the completion of the manufacturing of the turbine-generator, transformer, pumps, and electrical and mechanical equipment. Since equipment installation has been suspended until a firm steam supply can be found, all completed equipment is being stored at either the power plant site, Healdsburg storage area, or Kelseyville storage area.

Oroville Division

- All first-stage concrete construction was completed for the Thermalito Diversion Dam Powerplant in January 1986. Manufacturing of the major turbine components was completed in late 1985; installation was started in early 1986. Contracts for transformers, switchgear, switchboards, the power distribution system, and penstock shutoff valves were let during this reporting period. The power plant is scheduled to be operational in March 1987.

North Bay Aqueduct - Phase II

- Construction of North Bay Aqueduct - Phase II was started in the fall of 1984. This facility comprises 23 miles of pipeline and two pumping plants. The first two pipeline contracts, started in 1984, were completed in early 1986. This work extended from Ledgewood Creek to the existing Cordelia Surge Tank, which was constructed during Phase I (1968). The remaining three pipeline contracts and the Cordelia Pumping Plant contract were let during the first half of 1986. The contract for Barker Slough Pumping Plant is scheduled to be awarded in late 1986. Manufacture of pumping units for both pumping plants was started in the fall of 1985.

Tehachapi Division

- DWR continued operating the three new pumping units at the A. D. Edmonston Pumping Plant. Performance testing of the new units was completed in April 1986.

- Replacement of the 15-kV switchgear for the Edmonston motor-generator

TABLE 13: SWP CONSTRUCTION ACTIVITIES

Division or Facility	Activity (Specification Number)	Start Date	Planned Completion Date(a	Contract Costs(b ($1,000)
Energy Supply	Bottle Rock Powerplant			
	Turbine/Generator (80-27)	Nov. 1980	Aug. 1986	7,823
	Condenser and Gas Removal System (81-20)	Oct. 1981	Jun. 1986	2,946
	Power Plant Construction (81-41)	Feb. 1982	Jun. 1986(c	40,000
	Control Switchboards (82-03)	Feb. 1982	Jun. 1986	283
	Auxiliary Control System (82-08)	May 1982	Nov. 1985	557
	Transformers for Bottle Rock and South Geysers Powerplants (82-22)	Oct. 1982	Jun. 1986	1,335
	Cooling Tower (82-33)	Nov. 1982	Jul. 1986	3,215
	Stretford System (82-36)	Nov. 1982	Jun. 1986	3,400
	Floor Panels (83-52)	Dec. 1983	Jul. 1985	516
	Completion Contract No. 1 (84-02)	Apr. 1984	Jun. 1986	2,337
	Completion Contract No. 2 (86-08)	May 1986	Dec. 1986	1,145
	South Geysers Powerplant			
	Turbine Generator (82-48)	Jan. 1983	(d	7,950
	Power Plant Construction (82-54)	Jan. 1983	Aug. 1986	15,000
	230-kV Line Breaker (83-12)	Jul. 1983	(d	189
	Condenser and Gas Removal System (83-13)	Aug. 1983	(d	4,440
	Plant Auxiliary Control System (83-15)	Aug. 1983	(d	488
	Control Switchboards (83-21)	Aug. 1983	(d	510
	Stretford System (83-28)	Sep. 1983	(d	3,850
	Cooling Tower (83-31)	Oct. 1983	(d	3,952
	Switchgear Motor Control (84-05)	Apr. 1984	(d	640
	Cooling Water and Condensate Pumps (84-01)	Apr. 1984	(d	524
Oroville Division	Edward Hyatt Powerplant			
	230-kV Power Circuit Breaker (82-29)	Oct. 1982	Jun. 1985	2,408
	Motor and Motor/Generator Armature Winding Coils (82-65)	Jan. 1983	Jun. 1985	1,102
	Furnishing Generator Armature Winding Coils (85-01)	Mar. 1985	Oct. 1986	233
	Elevator Repair (85-02)	Mar. 1985	Jun. 1986	82
	Thermalito Afterbay Dam			
	Temporary Wellpoint System (85-08)	Apr. 1985	Aug. 1985	312
	Modification (Corner Reinforcement) (86-30)	May 1986	Sep. 1986	550
	Thermalito Diversion Dam			
	Power Plant Turbine, Generator and Governor (84-19)	Aug. 1984	Jun. 1987	1,711
	Power Plant Structure (84-44)	Dec. 1984	Jul. 1987	3,788
	Control Switchboard, Switchgear and Station Transformer (85-14)	Aug. 1985	Aug. 1986	375
	Power Distribution System (86-01)	Mar. 1986	Aug. 1986(e	498
	Acoustic Flowmeter (86-05)	May 1986	Dec. 1986	82
Suisun Marsh	Suisun Marsh Salinity Control Gates (86-10)	May 1986	Aug. 1988	12,564
North Bay Aqueduct, Phase II	Pipelines			
	Reach I: Ledgewood Creek through Suisun Creek (84-21)	Oct. 1984	Dec. 1985	3,572
	Reaches II & III: Suisun Creek to Cordelia Surge Tank (84-49)	Jan. 1985	Jun. 1986	4,133
	Reach IV: Clay Bank Road to Ledgewood Creek (85-34)	Jan. 1986	Oct. 1987	9,300
	Reach V: Travis Surge Tank to Clay Bank Road (86-15)	May 1986	Oct. 1987	8,800
	Reach VI: Barker Slough Pumping Plant to Travis Surge Tank (85-38)	Mar. 1986	Feb. 1988	12,800
	Pumping Plants			
	Pumping Units (85-22)	Sep. 1985	Oct. 1987	966
	Cordelia Pumping Plant and Forebay (86-03)	Mar. 1986	Oct. 1987	3,850
South Bay Aqueduct	Replacement Trashrake Units for Del Valle and Altamont Canals (83-40)	Oct. 1983	Nov. 1984(f	96
North San Joaquin Division	John E. Skinner Delta Fish Facility			
	Electrical and Mechanical Modifications (85-05)	Apr. 1985	Aug. 1986	88
	Repair of Operating Roads (85-16)	Jul. 1985	Aug. 1985	103

IN PROGRESS, JULY 1985-JUNE 1986

Division or Facility	Activity (Specification Number)	Start Date	Planned Completion Date(a	Contract Costs(b ($1,000)
San Luis Division	San Luis Pumping/Generating Plant			
	Wearing Rings, Seal Rings, Seal Pistons and Cap Screws (85-17)	Jul. 1985	May 1986	828
	Dos Amigos Pumping Plant			
	Repair, Motor Station 4 (84-46)	Oct. 1984	Mar. 1985	638
	Repair, Station No. 3 (85-07)	Feb. 1985	Jun. 1986	841
	Roof Restoration (85-18)	Aug. 1985	Mar. 1986	193
	Repair, Motor Units No. 5 and 6 (85-33)	Aug. 1985	Apr. 1986	1,364
	O&M Center Mobile Equipment			
	Building Storage Addition (85-21)	Sep. 1985	Feb. 1986	99
South San Joaquin Division	Bridge Hinge Restrainers - Phase III (85-06)	Apr. 1985	Oct. 1985	170
	Women's Facilities Modifications (84-47)	Feb. 1985	Aug. 1985	91
Tehachapi Division	A. D. Edmonston Pumping Plant			
	Pumping Units 10, 12, and 14 (79-01)	Jul. 1979	Jul. 1986	16,415
	Motors (81-02)	Jun. 1981	Jun. 1986	6,400
	Replacing 15-kV Switchgear (82-47)	Mar. 1983	Feb. 1986	3,558
Mojave Division	Alamo Powerplant			
	Turbine (80-16)	Jul. 1983	Aug. 1986	2,200
	Generator (83-14)	Aug. 1983	Aug. 1986	2,100
	Switchgear (83-19)	Dec. 1983	Aug. 1986	365
	Completion Contract (83-18)	Aug. 1983	Aug. 1986	4,500
	Governor (83-20)	Jul. 1983	Aug. 1986	360
	Transformer (83-26)	Oct. 1983	Aug. 1986	275
	Switchboards (83-56)	Mar. 1984	Aug. 1986	408
	Acoustic Flowmeter (84-07)	Apr. 1984	Aug. 1986	108
	Check Structures Completion			
	Mile 379 and 369.5 (84-04)	Apr. 1984	Jan. 1986	730
	Bridge Hinge Restrainers (85-11)	Jun. 1985	Sep. 1985	57
	Peerblossom Pumping Plant			
	Replacement Impellers (84-08)	Jun. 1984	Jun. 1986	575
	Mojave Aqueduct Modification			
	Reach I: Cottonwood Chute to Myrick Siphon (85-25)	Sep. 1985	Sep. 1986	6,165
	Reach III: Leona Siphon to Pearblossom Pumping Plant (85-19)	Jul. 1985	Jul. 1986	6,345
Santa Ana Division	Devil Canyon Powerplant			
	Penstock Modification (85-23)	Sep. 1985	Jan. 1986	200
	Santa Ana Pipeline			
	108-Inch Butterfly Valve (85-20)	Aug. 1985	Mar. 1986	168
West Branch	W. E. Warne Powerplant			
	Turbines (77-33)	Feb. 1979	Jan. 1983(g	3,870
	Generators (79-06)	Jun. 1979	Jan. 1985	5,405
	Castaic Dam			
	Outlet Works Penstock Recoating (85-09)	Jun. 1985	Nov. 1985	127
	Castaic O&M Center			
	Mobile Equipment Building Addition (85-30)	Dec. 1985	Apr. 1986	117
San Joaquin Drainage Facilities	Los Banos Demonstration Desalting Facility			
	Vapor Compression Evaporation Unit (85-31)	Aug. 1985	Sep. 1986	888

a) Date work is operationally complete. Testing and contract documentation may continue after this date.
b) Costs represent actual costs of completed work or estimated final costs of construction in progress.
c) Contract work was essentially completed in November 1984; however, some final electrical and mechanical equipment adjustment had to be accomplished during the April/May 1986 outage of the turbine-generator unit.
d) Installation deferred pending acquisition of an adequate steam supply.
e) Anticipated to be late, due to suspension of work.
f) The physical contract work at the site was completed in November 1984; however, final documentation was not completed until July 1985.
g) Although the contract work was completed in January 1983, the final efficiency testing of the units could not be performed until June 1985 because of the break in the Lower Quail Canal. The contract was accepted by DWR in August 1985.

units was completed in February 1986.

Mojave Division

- Most of the construction effort at Alamo Powerplant during this reporting period has been the installation of Unit No. 1 turbine-generator and appurtenant electrical and mechanical equipment. The power plant became operational in July 1986.

- Construction work for the modification of the Mojave Aqueduct was started in the fall of 1985. This work extends from Alamo Powerplant to Pearblossom Pumping Plant and is divided into three reaches of approximately 18 miles each. The contracts for Reach No. 1, Cottonwood Chute to Myrick Siphon and Reach No. 3, Leona Siphon to Pearblossom Pumping Plant, were let in the fall of 1985. Bids for Reach No. 2 were opened in July 1986.

Santa Ana Division

- Two construction contracts, one for Devil Canyon Powerplant penstock modification and one for installation of a 108-inch butterfly valve on the Santa Ana pipeline, were let in the fall of 1985 and completed in early 1986.

San Joaquin Drainage Facilities

- Although the Los Banos Demonstration Desalting Facility has been operational since 1984, an additional contract to furnish and install a Vapor Compression Evaporation Unit was awarded in August 1985 and completion is scheduled for September 1986.

Safety of SWP Facilities

As required by Water Code Section 6056, DWR initiated a revised program for review of the safety of SWP dams in 1975. Under this program,

New Fiber Optics Technology Will

The State Water Project is made up of many interwoven components - power plants, pumping plants, reservoirs, dams, and aqueducts - and an effective control network is necessary to operate these elements in coordination.

During the summer of 1985, DWR decided to replace the current, outdated SWP communication system with a more modern fiber optics system. The plan chosen to renovate the SWP communication system was tailored by MCI Telecommunications Corporation. On October 30, 1985, MCI was awarded the license to provide the fiber optics system to DWR. The telecommunications company began work on the multimillion dollar system in 1986. The system is scheduled for completion in early 1987.

The inadequacies of the old communication system became apparent as DWR began operating as a bulk power agency in 1983. DWR hired Westin Engineering as a consulting firm to review options for replacing or updating the communication system. Westin Engineering recommended using a fiber optics cable system the length of the California Aqueduct. On the basis of this recommendation, DWR sent out a Request for Proposals, outlining DWR's needs and requirements, to 60 communication firms. The proposed MCI system best fit DWR's specifications.

The MCI system will replace the present 50-pair twisted cable with a 45-megabit fiber optics line, characterized as a "backbone",

consulting boards conduct independent safety reviews of each dam every five years. DWR participates in the safety review process by providing technical engineering support to the various consulting boards. The first safety evaluation under this review program has been conducted and DWR is now implementing the boards' recommendations. Following is a summary of activities in progress under this program.

- The Safety Review Board completed an independent review of safety for the Antelope, Frenchman, and Grizzly Valley dams and reported its findings in November 1985. All three dams were declared safe. At Grizly Valley Dam, the board recommended raising the upstream shoulder of the road on the right abutment to increase freeboard.

- An independent consultant performed the five-year safety review of the Castaic Powerplant Complex - Devil Canyon Powerplant, under requirements of the Federal Energy Regulatory Commission (FERC). The consultant's March 1985 report (and a supplemental report in May 1985) found all facilities adequate for continued safe operation.

- FERC requested elaboration by the consultant regarding the evaluation of spillways for Pyramid Dam, Elderberry Forebay Dam, and Cedar Springs Dam, and for the stability of Pyramid Dam. This supplemental report was completed by the consultant in 1986.

- The Safety Review Board's recommended monitoring of the concrete slab movement in the Castaic Dam Spillway is continuing.

- The Safety Review Board's recommended additional dynamic soil studies and seismic stability analysis for Del Valle Dam will be completed by December 1986.

Enhance SWP Comminications System

alongside the Aqueduct. This backbone will consist of four fiber cables for DWR use and 12 fiber cables for MCI (commercial) use. Because the California Aqueduct offers over 400 miles of traffic-free bankside, DWR was able to make a right of way agreement with MCI; this agreement means $7.4 million of the estimated $9 million project costs will be borne by MCI. DWR will pay the remaining $1.6 million.

Fiber optics provides technology for an economical and reliable communication network. The flexible glass fibers are much lighter and less bulky than twisted copper wire. Since fiber optics uses light transmitted by successive internal reflections to send voice and data, the chance of interruption in the Project communication system should decrease. Correspondingly, there should be an increase in the quality and speed of the system. DWR's annual cost for the completed system is predicted to be approximately $200,000 - roughly one quarter of the cost of the present system.

MCI will provide other transmission services to complete circuits from Tracy to Sacramento, Lake Perris to Los Angeles, and a backup microwave system circuit from Los Angeles to Sacramento. Plans are also being developed to eventually link Oroville facilities, the North Bay and South Bay aqueducts, and the Coastal Branch of the California Aqueduct to the system.

- DWR's seismic evaluations of Thermalito Forebay Dam, Bidwell Canyon Saddle Dam, and Parrish Camp Saddle Dam, presented in draft form to the Special Consulting Board for the Oroville Earthquake, are still pending. These will be published as a supplement to Bulletin 203-78, "The August 1, 1975 Oroville Earthquake Investigations," when concurrence is obtained from the board.

The San Luis Dam slide was repaired early in 1983. The reservoir was refilled and no significant drawdown of the reservoir took place during 1983. On July 3, 1984, after a drawdown of 100 feet, cracks were observed on the newly resurfaced crest road during a final inspection of the road. The discontinuous crack extended for 99 feet near Station 135+00. The crack maximum opening was 3/4 inch. The maximum movement along the old slide mass was estimated at approximately 3 inches. This crack was sealed in the fall of 1984.

On July 30, 1985, the San Luis Dam's crest crack reappeared. The initial discontinuous crack was 135 feet long and by August 22, extended to 168 feet. The maximum opening was 1/5-inch wide, significantly less than the maximum opening in 1984. This decrease in the opening is an indication that the slide area may be stabilizing.

Instruments have measured both surface and internal movements of the repaired slide area. Surface measurements have been monitored and evaluated continuously following the original 1983 slide. Maximum settlement and horizontal movements of 4.4 inches and 7.5 inches were measured. The internal movement in 1985 along the old slide mass is estimated to be 1.75 inches.

In 1985, the Board of Consultants retained to evaluate San Luis Dam concluded that additional movements are inevitable, particularly during reservoir drawdown. If future movements are no more extensive than those reported in 1984, there would be no need to limit the rate and amount of future reservoir drawdown. In 1985 movements were less than in 1984. Surveillance will be continued until the movement mass has stabilized against the upstream reservoir berm.

The Federal Safety Evaluation of Existing Dam Investigation has determined that there is a possibility of foundation liquefaction at O'Neill Forebay Dam during an earthquake. Studies are continuing to determine the corrective measures to be taken. A decision memo is expected late in 1986 about the subject.

Hydrology studies for Los Banos Creek and Little Panoche Creek Detention dams indicate the dams could be overtopped under extreme flood conditions. Ongoing studies for both dams will determine the most cost effective methods to resolve the problems.

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

In August 1985, DWR sent a letter to each long-term SWP contractor, requesting estimates of (1) monthly SWP water requirements during 1986 through 1990, and (2) annual requirements for every fifth year beyond 1990 until the year in which maximum entitlements would be used on a regular basis.

In September 1985, SWP contractors submitted their estimated monthly SWP water delivery requirements for the five-year period 1986 through 1990. Their estimates included delivery of entitlement, surplus, wet-weather (Article 45), and emergency relief water.

Entitlement Water

Table 14 shows the estimated 1986 through 1990 entitlement water needs (including entitlement deferred from prior years) submitted in 1985 as well as estimates submitted in the six previous years. The long-range contractor requests for entitlement water are presented in Table B-5B (in Appendix B).

Because of below-average precipitation in late 1985, DWR imposed deficiencies on the 1986 entitlement deliveries; however, following the early 1986 storms, DWR reanalyzed the SWP's 1986 delivery capabilities and determined that conditions no longer required the reduced entitlements. Therefore, at the end of February, DWR removed the deficiencies and gave the contractors the option of revising their original entitlement requests; the revised entitlement request for 1986 totaled 2,285,557 acre-feet.

Miscellaneous Water

Some water types other than entitlement water are scheduled for 1986 delivery. Anticipated deliveries include 37,170 acre-feet of 1985 carry-over entitlement water; 12,270 acre-feet of 1985 carry-over surplus water; 7,950 acre-feet of 1977 emergency relief water; and 8,213 acre-feet of unscheduled water which was delivered during January through April 1986. DWR also anticipates sufficient surplus water supplies to meet the 1986 surplus water requests, through September 30, of approximately 8,000 acre-feet. Expected deliveries of wet-weather water for 1986 total 21,300 acre-feet. Other water scheduled for 1986 delivery includes 5,885 acre-feet for recreation, and 3,860 acre-feet of non-Project water pumped through interim facilities to Napa County Flood Control and Water Conservation District.

SWP Water Delivery Capability

The measure of delivery capability for the SWP was founded on the concept of "firm yield" operation. This concept is embodied in the water supply contracts under the term "minimum project yield", defined as the dependable annual water supply that can be made available without exceeding specified allowable reductions in agricultural deliveries during an extended dry period.

TABLE 14: WATER CONTRACTORS' REQUESTS FOR ENTITLEMENT WATER, 1986-1990

Year Estimate Submitted	Annual Delivery Requests (Acre-Feet)[a]					
	1985	1986	1987	1988	1989	1990
1985		2,367,781	2,655,526	2,739,093	2,789,545	2,849,832
1984	1,894,849	2,200,438	2,625,184	2,828,253	2,877,215	2,934,450
1983	1,897,531	2,682,948	2,780,832	2,852,989	2,906,699	
1982	2,599,190	2,711,107	2,800,235	2,888,377		
1981	2,699,830	2,788,111	2,901,175			
1980	2,561,970	2,709,710				
1979	2,617,594					
Total Entitlements(b	3,059,885	3,296,778	3,500,194	3,694,269	3,958,190	4,108,321

a) Includes deferred entitlement. For the years 1985 through 1987, 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 by adding non-SWP water for Napa County Flood Control and Water Conservation District in 1985 through 1987).

Without augmentation, the firm yield capability of SWP facilities decreases gradually with time as non-SWP water use within the area of origin increases. The current firm yield of existing SWP facilities is approximately 2.35 million acre-feet per year. By 1990, assuming no further augmentations other than completion of overland water supply facilities on Sherman Island in the western Delta, the estimated SWP firm yield will decline to 2.30 million acre-feet per year. Further declines during 1990-2000 should be offset by the additional pumping capacity of the final four units at Banks Delta Pumping Plant; thus the firm yield of existing and scheduled SWP facilities in 2000 is also projected as 2.30 million acre-feet per year.

Total SWP deliveries of entitlement water reached a record level of over 2 million acre-feet in 1985. In 1986, entitlement deliveries are projected to be approximately equal to the current firm yield of existing SWP facilities (2.35 million acre-feet). As shown in Table 14, contractor requests for

delivery of entitlement water will exceed the firm yield of existing facilities by significant amounts beginning in 1987. Since timely augmentation of SWP yield through new construction has been precluded, DWR has been devoting increasing attention to the potential for increasing the average annual delivery capability of existing facilities by using operating strategies other than those used for the conventional firm yield mode of operation. Over the past decade, DWR has developed computer simulation models that analyze the operation of SWP and CVP reservoirs and conveyance systems. The models are used for long-range studies of alternative operating strategies and potential additional facilities.

Short-range decisions for the operation of SWP facilities are made with an annual "rule curve". The rule curve provides a rational means to decide how much water may be delivered in a given year and how much should be left in storage as insurance to protect against subsequent dry periods. Until recently, the procedure used to develop the annual rule curve was designed to assure a high probability of meeting future delivery schedules. This resulted in relatively high fall storage target levels for Lake Oroville and the State portion of San Luis Reservoir, and quite often delayed approval of water delivery requests until late in the water-producing season. Furthermore, the former procedure did not cover how such storage reserves would ever be used, since the rule curve was based on a running short-term (2-year) analysis period.

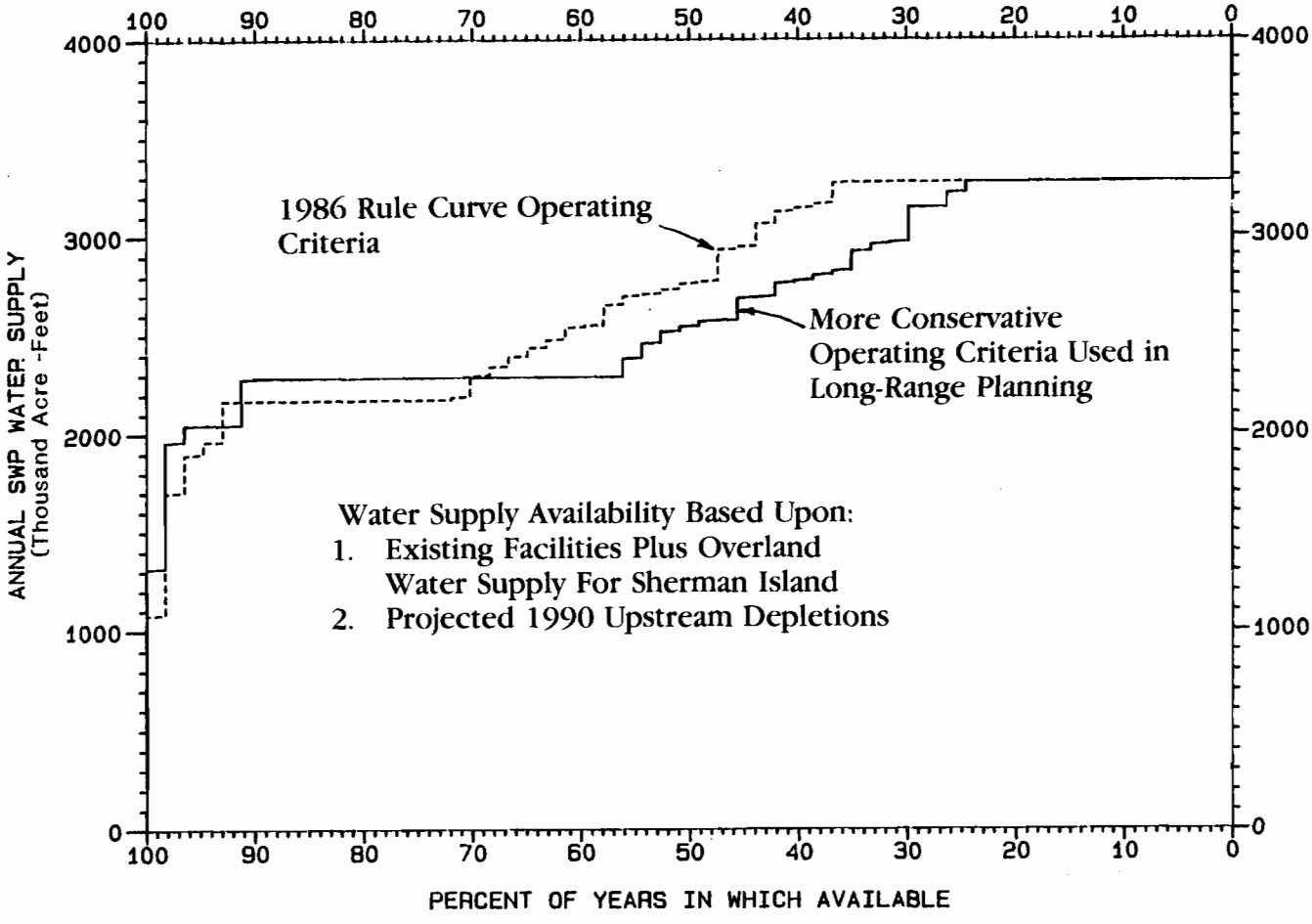
As the contractors' annual requests for entitlement water continued to rise, DWR became increasingly aware that alternative rule curve procedures could permit larger deliveries in average or wet years without substantially reducing delivery capability during dry years. With the concurrence of the SWP contractors, one such alternative rule curve procedure was adopted, on a trial basis, for use in 1986. The 1986 rule curve procedure relaxes the requirements for fall carry-over storage somewhat, permitting larger deliveries in most types of years, but at the possible expense of reduced deliveries in the driest years, consistent with the firm yield concept. The modified rule curve permits approval of a reasonable annual delivery early in the water-producing season without jeopardizing the average dry period supply that would be available during a recurrence of the historic 1928-34 drought period.

Operation under the 1986 rule curve is but one example of potential operating strategies. Other operating rules may be developed that further increase SWP delivery capability in normal and wet years, with an acceptable risk of lower deliveries during a dry year or a series of dry years.

Figure 9 depicts SWP water supply availability under two alternative operating strategies (with total annual demand taken as 3.27 million acre-feet for illustration). The solid line represents the water supply under the operating criteria that have previously been used in some long-range planning studies; these criteria are considered rather conservative. The solid line corresponds to the similar line in Figure 10, on page 76, of Bulletin 132-85 (except that the earlier version did not show water supply availability in excess of projected entitlement requests, whereas the current version does). The dashed line shows the water supply available under the operating criteria of the 1986 rule curve; in nearly half of the years, the 1986 rule curve would increase SWP annual delivery capability, often by as much as 350,000 acre-feet. In about 20 percent of the years, deliveries would be about 120,000 acre-feet lower than

FIGURE 9: SWP WATER SUPPLY AVAILABILITY

(March-February)



under the more conservative criteria. Operation under the 1986 rule curve would reduce deliveries in extremely dry years by as much as about 250,000 acre-feet (because reservoir storage would have been drawn down to increase deliveries in the preceding years). However, average dry period deliveries during a repetition of the 1928-34 drought would be about the same with either of the operational criteria used in Figure 9.

DWR is continuing its studies of alternative operating strategies and its dialogue with SWP contractors on these studies. The contractors will be given the opportunity to make informed choices on future operating criteria and facility development.

Alternatives for Delta Water Transfer

DWR continues to study various solutions to Delta problems that result from the inefficient water transfer capability of the Delta. DWR planning efforts are directed toward developing information to solve the following problems related to SWP operations:

- degradation of water quality at the Contra Costa Canal intake and at the Tracy and Banks Delta pumping plants caused by salinity carried into the Delta from flow reversals in the San Joaquin River;

- depletion of upstream reservoir storage because of larger releases necessary to compensate for current

inefficient water transfer in the Delta;

- lowered water levels in Delta channels near the export pumps;
- potential scouring of channels and erosion of levees in the southern and central Delta;
- disruption of Delta fish and wildlife habitat and interference with fish migration; and
- limited conveyance capacity in the southern Delta channels.

Current studies seeking solutions to these Delta problems will review, but not duplicate, previous efforts. These present studies will address the important questions posed by the Legislature and others. Technical information reports about environmental and engineering matters will be completed in 1987.

Potential Means to Augment Water Supply

The water picture in California has been characterized by continual change. Water needs fluctuate, droughts or heavy rainfall affect water supplies, and theories and practices of water resource management wax and wane. Even the California Water Plan, published in 1957 and adopted by the Legislature in 1959, was never intended to be a rigid, inflexible blueprint for water resource development.

Recently, the trend has been to place less emphasis upon conventional onstream storage projects north of the Delta, and to place more emphasis upon water conservation, water quality, water salvage, ground water conjunctive use projects, and offstream storage south of the Delta. Additional nonstructural measures such as water marketing, water exchanges, and crop substitution (including nonplanting) are in the proposal and evaluation stages. Such factors as increased construction and financing costs, a depressed farm economy, cutbacks in federal spending, and changing public attitudes about water management have interacted to effect this change of emphasis. All of these factors and changes affect planning and should be reflected, to the extent possible, when outlining and summarizing probable future scenarios.

The outlook in 1986, with respect to specific facilities, is quite different from what it was in 1976, or 1966. For instance, planning for the Corps of Engineers' Cottonwood Creek Project, considered almost a certainty 10 or 20 years ago, has been replaced with planning smaller, upstream reservoirs. The large Corps project is now thought to be financially infeasible under present economic conditions, as is Marysville Dam and Reservoir. Studies to enlarge Shasta Dam have been terminated as well, perhaps until the turn of the century or after. Auburn Dam, in spite of broad-based support and the need for flood control, still lacks sufficient financial backing. Projects with local sponsorship, such as the Garden Bar Project and the Cosumnes River Project, also face an uncertain future.

Nevertheless, California still has a number of unresolved water problems. The quest for the most effective solutions, and the necessary consensus to implement them, continues; the basic problems will not change, but the solutions may.

Some of these solutions may be interim or short term. Such interim solutions could enable meeting near-term contractual obligations while postponing some of the relatively more expensive structural solutions that will be needed eventually. Water marketing agreements, SWP entitlement transfers, CVP purchases, and increased agricultural and urban water

conservation programs are examples of changes in emphasis now receiving increased attention.

The status of various projects, facilities, and programs under consideration, both short- and long-term, are discussed in more detail on the following pages.

Banks Delta Pumping Plant, Additional Units

The most advanced program for water supply augmentation is the installation of additional pumping units at the Banks Delta Pumping Plant. (The plant was built to accommodate 11 units, but only seven were initially installed.) DWR estimates that the additional units, each with a design capacity of 1,067 cfs, will go into operation in the early 1990s. The final EIR about this expansion was distributed in early 1986. One important item remaining to be completed is a fish preservation agreement for the Banks Delta Pumping Plant; this agreement between DWR and the Department of Fish and Game is the preferred means of mitigation for the additional pumps.

The pumping plant expansion will proceed in two phases. In the first phase, covered by the current EIR, the final four pumps will be installed, but the plant will pump at no more than the average historic pumping rate from March 16 through December 14 (pursuant to criteria established by the Corps of Engineers in its Public Notice 5802A, Amended, dated October 1981). The basic purposes of the new units in this phase will be to provide standby capacity for the existing units, and to permit 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.

For the second phase, DWR will do the necessary environmental review and documentation to obtain a Corps of Engineers' permit to divert and pump more water during the winter months to fill offstream storage reservoirs and ground water basins south of the Delta.

Offstream Storage South of the Delta

Nearly all interests agree that plans for future water development should emphasize water diversion from the Delta, during winter months, to storage facilities south of the Delta. The storage would be "offstream," meaning the project would be built on a stream that produces very little water and would be filled with winter runoff conveyed from the Delta. Stored water would be released during water-short periods for use by agencies contracting for water from the SWP. The broad consensus supporting this approach was apparent in 1984, when the Legislature overwhelmingly approved authorization of Los Banos Grandes Reservoir, in western Merced County, as a future SWP storage facility.

Based upon the results of a May 1984 reconnaissance appraisal of 13 south-of-the-Delta storage sites, DWR began a four-year feasibility investigation of the Los Banos Grandes Reservoir. DWR has continued to study the desirability of Los Vaqueros Reservoir in Contra Costa County, another offstream storage project. Los Vaqueros Reservoir would be well situated geographically to serve water to - and meet the special needs of - South Bay customers of the SWP and other Bay Area districts.

Los Banos Grandes Offstream Storage Project. The proposed Los Banos Grandes Reservoir would store excess water pumped south from the Delta through the California Aqueduct during wet months, primarily November through March. Assembly Bill 3792, signed by the Governor in 1984, directs DWR, as part of its feasibility studies of Los Banos Grandes, to determine whether

its construction would adversely affect drainage problems, including the occurrence and distribution of selenium in drain water, on nearby farms.

By December 1985, the feasibility study was one-third complete. A brochure was published in December 1985, describing briefly the highlights and status of the Los Banos Grandes investigation and showing how this reservoir would fit into the SWP.

Geology, environmental concerns, water quality, seepage and drainage, and the pumped-storage power generation potential of the project have been studied; during 1985, however, the major focus was on comparative cost estimates for four alternative reservoir sizes and various sizes of conveyance connections to the California Aqueduct. Two alternative conveyance routes, one via Los Banos Detention Reservoir and the other via San Luis Reservoir, were also considered for the larger size reservoirs. For each of these physical alternatives, water supply studies were made for three alternative modes of operation.

These project sizing studies showed that a reservoir with about 1.0 to 1.5 million acre-feet of storage capacity would be the most cost-effective size for the SWP. This was the case for all three modes of operation. These sizing studies were based upon long-term conditions and assumed the installation of the four remaining pumps at the Banks Delta Pumping Plant as well as an improved Delta water-transfer system.

Comparison of the two conveyance routes showed that the Los Banos Detention Reservoir route would be superior to the San Luis Reservoir route. Although total capital and operating costs would be essentially the same for either route, and the Detention Reservoir route offers greater operational flexibility.

From the preliminary pumped-storage analysis, DWR concluded that the pumped storage power potential at Los Banos Grandes may be more valuable to an electric utility with large on-peak power requirements and an excess of off-peak base-load energy than to the SWP. The long-range future power resource needs of the SWP are primarily of the base-load type, requiring both on-peak and off-peak capacity and energy during most of the year.

The next phase of the investigation will reduce the number of alternatives. This step will allow sharper focus on a specific project for more detailed feasibility analysis. For this purpose, DWR has selected a project with 1.25 million acre-feet of storage capacity, with the conveyance pumping-generating system sized for water supply operation, while maintaining options for:

- future enlargement of the pumping-generating system when favorable economics of pumped-storage power generation can be demonstrated;
- reservoir and conveyance system staging either starting smaller and later going to 1.25 million acre-feet, or starting at 1.25 million acre-feet and later going larger; and
- possible changes in preferred reservoir capacity to accommodate the Department of Fish and Game's desire to obtain a water supply for wildlife refuges and/or the USBR's offstream storage needs for the CVP.

Within this framework, the next phase of study will:

- more accurately define the costs of this size project;

- o continue feasibility analysis of pumped-storage features, working toward a possible joint venture with electric utility companies;
- o determine the impact of operating with only some channel enlargement in the south Delta, instead of an entire improved Delta water-transfer system;
- o investigate conjunctive operation with ground water storage;
- o determine how to use operational flexibility to reduce pumping impacts on Delta fish;
- o continue all supporting studies (seepage-drainage, environmental, water quality, economic analysis, payment capacity, financial analysis, etc.); and
- o begin preparation of a draft EIR, initially concentrating on site specific impacts.

Kellogg/Los Vaqueros Reservoirs. While past studies have indicated that unit costs of new water supplies from Kellogg/Los Vaqueros and Los Banos Grandes were similar, DWR's May 1984 report presented new data that indicate Los Banos Grandes would be more cost effective. However, Kellogg and Los Vaqueros Reservoirs would be strategically located and would have the potential to provide a more reliable water supply of improved quality to the South Bay counties.

During 1984, several algae blooms in the Delta allegedly contributed to taste and odor problems in the South Bay Aqueduct service area. Following an October 1984 meeting with DWR, the South Bay contractors sent DWR a letter supporting its efforts to (1) provide them with early warning of potential water quality problems, and (2) study the potential water quality benefits of reservoirs south of the Delta such as Los Vaqueros or Kellogg.

In response to this statement of support, DWR developed a South Bay Aqueduct Biological Monitoring Program, which was ultimately approved by the contractors and implemented in March 1985. The program is designed to provide data about the relationship between phytoplankton and algae and the poor taste of treated water experienced by some water treatment plants served by the South Bay Aqueduct.

Planning efforts scheduled to commence in July 1985 were to have included analysis of water quality effects of Kellogg/Los Vaqueros Reservoirs, reconnaissance of offstream sites along the South Bay Aqueduct, and discussions with local agencies that might have an interest or that would be affected by new offstream storage facilities in the Alameda and Contra Costa counties.

A series of events, which occurred initially at the local governmental level, changed DWR's planning activities. In June 1985, the Contra Costa County Board of Supervisors approved a subdivision within the proposed Los Vaqueros Reservoir site. The Contra Costa Water District's Board of Directors, in response to this action, appropriated funds for studies to support a bond measure for purchasing land in the Los Vaqueros and Kellogg watersheds in order to preserve future options. The water district consultants conducted engineering, financial, and environmental studies during the first half of 1986; during the studies, the District chaired a task force of representatives of the Bay Area water agencies, including the USBR and DWR. The task force will coordinate the various agencies' activities and policies on the two potential reservoirs and act as an information exchange.

During fall 1985, the USBR expanded the scope of its Kellogg Reformulation Study to include an analysis of the Los Vaqueros Reservoir site. Previously, the study concentrated on Kellogg Reservoir and relocation of the Contra Costa Canal intake. USBR's schedule calls for a planning report and environmental statement in fall 1986 and public hearings in 1987. DWR will continue to coordinate with the USBR regarding the two reservoir sites. DWR has continued to evaluate the potential of future participation in a Kellogg/Los Vaqueros project for the purposes of water quality enhancement, service reliability, and SWP water supply augmentation.

Because of the high costs associated with participation in these projects to the SWP contractors, DWR has asked the Corps of Engineers to analyze the possibilities of modifying existing operations at Del Valle Reservoir and is studying the possibility of future exchanges with the USBR's San Felipe Project to provide enhanced water quality and reliability benefits to South Bay contractors.

Sacramento Valley Reservoirs

Traditional thinking concerning the means of meeting California's water needs used to revolve around the concept of transferring surplus waters from Northern California to areas of deficiency in the San Joaquin Valley and Southern California. The early philosophy of water development is well stated in the last sentence of the foreword to Bulletin 3, "The California Water Plan": "Finally, and this cannot be emphasized too strongly, solution of the water problems of California lies in the construction of physical works - not alone in laws and reservations of water, however necessary these may be as steps in the process." (Emphasis added.)

During the nearly 30 years since Bulletin 3 was published, a vast number of institutional changes have altered the direction of water resources planning and development in California. Such changes include:

- the Delta Protection Act;
- the Porter-Cologne Water Quality Control Act;
- the Federal National Environmental Policy Act;
- the California Environmental Quality Act; and
- the California and National Wild and Scenic Rivers Acts.

Other factors affecting water resources policy include:

- the statewide Jarvis-Gann Initiative (Proposition 13, November 1978) which reduced local governments' capability to fund or cost share in public works projects;
- the defeat in the Legislature, and by statewide referendum, of three comprehensive water development plans during the late 1970s and early 1980s;
- national fiscal policies that have reduced the federal government's ability to fund public works projects;
- recent court decisions concerning (1) the relative authorities of federal and State laws concerning water rights, and (2) the public trust doctrine;
- growing recognition that institutional means other than "the construction of physical works" have the ability to reduce demand or augment supplies;

- growing public awareness of the impairment of the quality of the State's surface and ground water; and

- recent changes in the farm economy in general and, more specifically, the potential inability of some farmers to pay for irrigation water.

These institutional changes all have had some effect, in varying degrees, upon the ability of agencies at all levels of government to plan and develop physical works for the storage and distribution of water.

In May 1985, at a California Water Commission meeting dealing with the Corps of Engineers' Cottonwood Creek Project, a representative of MWDSC told the Commission that it was looking at other sources of water - such as unused allocations of Colorado River water, ground water, and water to be conserved by Imperial Irrigation District. SWP contractors also indicated that a through-Delta facility should be in place before Northern California's water supply sources are developed further. Cost estimates for most of the Delta water transfer alternatives are below $100 per acre-foot of new water supply made available. Construction of a water-transfer facility would substantially enhance the value of future Sacramento Valley projects because the projects' net contributions to SWP deliveries would be from 25 to 35 percent greater than without a Delta water-transfer facility.

Other concepts under discussion by the water community include (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. All of these factors have decreased the SWP contractors' enthusiasm to participate in the financing of Sacramento Valley projects. The apparent value of water from such projects has been reduced to $100-150 per acre-foot, whereas the costs to develop the water from such projects ranges from $150 to above $200 per acre-foot.

Cottonwood Creek Project.
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. The two-dam project was authorized by Congress in the Flood Control Act of 1970. In 1976, Congress provided the Corps with funds for advanced engineering and design studies.

A report and final EIS about the project were released in January 1984. The report estimated the total first cost of the Cottonwood Creek Project as $753 million (at October 1982 price levels). The State would have participated in the project under the Water Supply Act of 1958. The total cost to the SWP contractors would have been approximately $70 million annually. There was concern that incremental costs of this magnitude would exceed some of the contractors' repayment capabilities. Consequently, in June 1984, DWR asked the Corps to reanalyze the project, looking at methods for cost reduction.

The Corps' reanalysis proposed changes that would reduce the total first cost of the Cottonwood Creek Project to $571 million. As calculated by the Corps, the total annual cost to the SWP contractors would range from $49 million to $58 million.

After discussions with the SWP contractors and a briefing before the California Water Commission in May 1985, DWR decided not to participate in the project. In June 1985, a letter explaining DWR's position on the Corps' proposal reiterated DWR's commitment to help the local counties with their flood problems and stated that DWR would move ahead with studies of less costly upstream reservoir alternatives. The letter also stated DWR's desire to work with the Corps on the flood control aspects of the alternative projects.

Cottonwood Creek Alternatives. Concurrently with the June 1984 request for a reanalysis of the Corps' project, DWR initiated an analysis of tributary reservoirs in the Cottonwood Creek Basin as a possible alternative to the Corps' project. Previous studies of these tributary reservoirs appeared in Bulletin 150, March 1965.

The DWR analysis estimated the total first cost of three tributary reservoirs (Hulen, Fiddlers, and Dippingvat) at $371 million (October 1984 price levels). Combined, the three reservoirs would provide a critical period supply averaging 146,000 acre-feet per year (30,000 acre-feet from Hulen, 73,000 from Fiddlers, and 43,000 from Dippingvat). The allocation of first cost to municipal and industrial water supply was estimated at approximately $326 million, which would result in a unit cost of new SWP water supply competitive with that of the modified Corps project.

The three tributary reservoirs would reduce the 100-year peak floodflow at Cottonwood from 106,000 cfs to 44,000 cfs and would accrue annual flood control benefits of $6.95 million (October 1984 price levels).

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

Following the report's recommendations, DWR began a two-year prefeasibility investigation of the Cottonwood Creek Alternatives in July 1985. The study emphasizes the Dippingvat and Schoenfield sites which were selected for initial study because they have had the least geologic exploration. They also have the potential (1) of a water supply with low unit cost, (2) of being the most valuable from a fishery enhancement standpoint, and (3) to supply the water demands of the Corning Canal, thereby saving pumping costs and raising the possibility of allowing the Red Bluff Diversion Dam to be operated to facilitate fish migration.

The prefeasibility study of the Dippingvat-Schoenfield plan is scheduled for completion in June 1987. If the results are positive, the remaining feasibility studies will continue for Dippingvat-Schoenfield and be followed by studies of the Hulen and Fiddlers sites.

The studies are being conducted in cooperation with the USBR, Department of Fish and Game, Fish and Wildlife Service, and the Corps of Engineers to include fishery and flood control elements. Communication with Shasta and Tehama counties and cooperating agencies is maintained through an advisory group.

Shasta Lake Enlargement. In recent years, the USBR and DWR studied the feasibility of enlarging Shasta Dam. However, many California water interests have more recently concluded that other needs should take priority over the additional storage of an

enlarged Shasta Lake. These needs include solving San Joaquin Valley drainage problems and planning for the expansion of the CVP aqueduct system in the San Joaquin Valley. As a result, the USBR shifted its planning emphasis toward conveying and protecting the quality of existing supplies before developing new supplies. DWR, responding to growing recognition of increasing project costs, shifted its planning to smaller, less expensive projects. Both the USBR and DWR deferred planning activities scheduled in the original study plan for Shasta Lake enlargement.

In spring 1986, the two agencies completed a status report about the Shasta Lake enlargement study. The status report, entitled "Enlarged Shasta Lake Investigation-Status Report," includes pertinent data and findings collected and developed during the study, where the information for public review is located, and areas for further study - should the concept of enlarging the dam and reservoir be pursued in the future.

Marysville Dam and Reservoir. In February 1986, the Central District and the Division of Planning completed an investigation of Marysville Dam and Reservoir. Marysville Reservoir, on the Yuba River, was originally proposed as a Corps of Engineers project in the late 1970s. In 1982 the reservoir proposal was reanalyzed as a possible local project of the Yuba County Water Agency. However, neither project was pursued further.

DWR investigated a multipurpose project to provide power, flood control, and additional conservation yield for the SWP, by using the Corps plan for the Parks Bar and Dry Creek Dam sites, (approximately 15 miles upstream of the City of Marysville) and updating the construction costs estimates with 1985 values. Based upon long-range power rate projections, the power purpose was infeasible and the resulting cost of water to the SWP too high, especially in relation to other alternatives under consideration. Limited local support for the project and significant environmental mitigation were also foreseen. However, due to the limited nature of the investigation, no firm conclusions were reached. Further work on a Marysville alternative has ceased in favor of other, more promising studies.

Auburn Dam and Reservoir. Auburn Dam and Reservoir is being planned as a multipurpose facility on the North Fork of the American River near Auburn. It would provide flood protection for the City of Sacramento, hydroelectric power, recreation, and water supply. In February 1984, Secretary of the Interior Clark and Governor Deukmejian established a State/federal task force to review the possible completion of Auburn Dam. The task force is to review financial participation, recommend partnership arrangements, allocate costs on the basis of benefits to be derived, determine financial capabilities of the beneficiaries, and recommend contractual/organizational mechanisms for completing the project.

At the second meeting of the task force in October 1984, the Auburn Dam working group, under the co-chairmanship of the Director of DWR and the Regional Director of the USBR, recommended an independent study of the Auburn area facilities. The task force concurred, and in May 1985 DWR contracted with Bechtel National, Inc. to determine whether a project could be constructed at a lower cost. The contract work, jointly funded at $100,000 each by DWR and the USBR, was completed and the final report was issued in November 1985.

Bechtel had reviewed the costs of the USBR's presently proposed curved concrete gravity dam (designated CG-3) and investigated three additional sites within two miles of the CG-3 site as

well as alternative dam types. Various size reservoirs from 800,000 acre-feet to 2,300,000 acre-feet were investigated.

The Bechtel report concludes that the cost to complete the CG-3 dam and 300-MW power plant as proposed by the USBR would be $980 million at 1984 price levels. Bechtel's least costly full-sized alternative project is a dam and power plant constructed approximately one mile downstream of the CG-3 site. This dam would be constructed with roller compacted concrete, using a relatively new technique of concrete placement that provides substantial cost and time savings over conventional methods of concrete dam construction.

This alternative dam would have a total construction cost of $640 million in 1984 dollars, or $340 million less than the estimated costs to complete the CG-3 dam. Bechtel also concluded that under its assumptions for sale of water and power, and by construction of a roller compacted concrete dam, Auburn Dam would be financially feasible.

Early in January 1986, a technical group, consisting of representatives from the USBR, DWR, Western Area Power Administration, and Congressman Norman Shumway's office, completed an analysis of Bechtel's report. A briefing for members of the State/federal task force and working group was given in February 1986. This briefing presented the results of the technical review, the status of studies by the USBR and DWR in response to the Bechtel report, and a schedule of future activities to be considered by the task force.

After the major storms in February 1986, the Corps of Engineers began a study of flood hydrology, damage potential, and alternative flood protection measures for the American River. This $200,000 study is supported jointly by the USBR and DWR with general funds, and is to be completed in March 1987.

The American River Committee was formed under the auspices of the task force in February 1985. Its goal is resolution of the water supply issues along the lower American River. The committee includes representatives from Placer County, Placer County Water Agency, El Dorado County, Georgetown Divide Public Utility District, Sacramento County, San Joaquin County, Stockton-East Water District, Save the American River Association, and East Bay Municipal Utility District. Since its first meeting in May 1985, the committee has met frequently to consider a large body of data and information. A report with the committee's recommendations is being prepared.

The Eel River and North Coast

The California Wild and Scenic River Act became effective in 1973. This Act precluded development of the North Coast major streams. The Act also provided that DWR, after an initial 12-year period, would report to the Legislature about the need for water supply and flood control projects on the Eel River and its tributaries.

On August 30, 1985, DWR Director Kennedy reported by letter to the Legislature that: "Based upon the situation today, we see no reason to seek legislation to withdraw the Eel River from the Wild and Scenic Rivers System. This is a decision to be considered by future generations." That letter also noted: "... it is our view that we would not look to the Eel River as a practical source of additional water supply within the near future, irrespective of its wild and scenic river status. Possible projects in the Central Valley appear more favorable at this time than development of the Eel. . . . Given California's water situation, it seems neither appropriate nor possible for one

generation to fully determine or bind the actions of a future generation. It is certainly possible society may eventually wish to develop the Eel River. However, for today, maintenance of the status quo seems appropriate; that is, leave the Eel in the Wild and Scenic Rivers System, subject to future review."

For some years, many people have been concerned about detrimental impacts of major water developments on the Eel and other North Coast rivers. This fear continues despite both State and federal wild and scenic rivers status for the major North Coast streams. It therefore seems appropriate to note that with respect to North Coast development, a number of studies conducted in the 1950s and 1960s identified the Eel River as having by far the greatest potential for development. However, as previously noted, California's foreseeable water needs can be met in other ways.

Ground Water Storage Programs

DWR has been studying potential ground water programs to be managed by the SWP contractors whose service areas overlie ground water basins. Such programs could be operated by the involved contractors using entitlements and any available surplus water. Such programs could be entirely to the benefit of the individual contractor, or if all contractors agreed, some programs could be fully integrated into the SWP by conjunctive operations of the available ground water storage space with the SWP, including new offstream storage reservoirs south of the Delta. Through conjunctive use, greater amounts of water could be made available for ground water storage, and all contractors would benefit from the increased SWP water deliveries under this option.

To facilitate ground water storage programs, Senate Bill 187 passed the Legislature and was signed into law by the Governor in 1985. The bill authorizes the inclusion of ground water storage projects south of the Delta into the SWP, subject to a finding of feasibility by the Director, and to obtaining a contract with the contractor in whose service area the project is located.

SWP system operation studies suggest that significant additional water could be made available through conjunctive use of surface facilities and a ground water storage program. Cooperating contractors could also realize reduced costs through reallocation of a part of the Aqueduct costs from transportation to conservation. To develop specific, workable programs, DWR and the contractors must work together on programs that mutually benefit the SWP and local agencies.

During the past year, work continued on the San Bernardino Valley-San Gorgonio Pass study and on a program to determine the potential for conjunctive use in the southern San Joaquin Valley. An investigation of the Santa Maria Basin was also started. Progress of these investigations during the past year is summarized in the following sections.

San Bernardino Valley-San Gorgonio Pass. The cooperative feasibility level investigation continued during 1985 and was completed in early 1986. During the year, the focus of this investigation shifted to the high ground water problems in the San Bernardino area.

Kern Water Bank. In late 1985, DWR became aware that a large piece of land overlying the Kern River Fan in Kern County was for sale. DWR is interested in the land for potential development of a ground water storage and extraction program. The program would involve acquisition of land on which artificial recharge facilities,

extraction wells, and related surface facilities would be constructed. SWP water would be stored in the basin during years of abundant supply and extracted in years of deficient supply. The program, known as the Kern Water Bank, would help reduce future deficiencies in SWP deliveries and help correct long-term overdraft conditions in the Kern County Ground Water Basin.

A preliminary program analysis was conducted in early 1986. The preliminary analysis indicated that the program could increase the average annual SWP delivery capability by about 225,000 acre-feet per year. This figure was based upon assumptions of a monthly recharge capacity of 40,000 acre-feet, an available storage capacity of one million acre-feet, a hydrologic repeat of years 1922 through 1978, and computer simulation models of the SWP system and the ground water basin. The unit cost of water developed by this program appeared to be competitive with other water supply augmentation proposals.

In May 1986, DWR released a draft program EIR. The report identifies, analyzes, and compares the effects of acquiring the needed lands for the recharge program to the consequences of the "no project" alternative. DWR is also conducting further engineering and economic studies which will provide more comprehensive information about the program. These studies will help support a decision regarding the amount of land to be purchased once the final EIR has been completed and a contract with Kern County Water Agency has been executed.

The California Water Code authorizes the inclusion of facilities south of the Delta that use ground water storage space and are determined feasible by the DWR Director for developing yield for the State Water Resources Development System. The Water Code also requires that prior to construction or operation of such facilities, DWR must contract concerning the facilities with the SWP water supply contractor whose boundaries include the ground water basin. DWR and Kern County Water Agency began meetings in mid-1986 to develop principles to be used in negotiating the required contract.

As discussions progressed with the Agency and member units, the program was broadened to consider in-lieu recharge proposals of other areas within Kern County. In-lieu recharge could require construction of additional surface distribution facilities or enlargement of existing facilities and delivery of SWP water to areas currently dependent upon pumped ground water. The amount of ground water not pumped would be deposited in the Kern Water Bank and credited to the SWP for later extraction.

South Bay Conjunctive Use. This investigation was to define criteria for integrating ground water storage and other local operations into SWP operational studies. The refined criteria would allow more effective coordination of SWP studies with evaluations of water supply enhancement and operations by local agencies. This study has been postponed and will resume only if requested by South Bay contractors.

Santa Maria Ground Water. In July, DWR initiated a one-year reconnaissance investigation of the potential for using the Santa Maria River Basin for a SWP storage program. Work this year included defining existing conditions, analyzing the ground water basin, and developing a conceptual conjunctive use operation. Presently the project does not appear to be feasible and further investigation was terminated by July 1986.

MWDSC-IID Proposal. MWDSC and the Imperial Irrigation District (IID) are

negotiating an agreement involving both water conservation and Colorado River water deliveries. MWDSC proposes to finance water conservation measures in IID's service areas that would reduce the volume of Colorado River water now being diverted by IID. In return, MWDSC would receive up to 100,000 acre-feet per year from IID's entitlements to Colorado River Water. The IID Board of Directors ordered an EIR to determine the effect of the plan.

Conservation measures that may be employed include: matching water deliveries more closely to water demands, constructing regulating reservoirs to reduce spillage, providing spill-interceptor systems, lining canals and laterals, and implementing conservation measures by individual farmers.

Before any water transfers can take place, however, assurances to honor the agreement must be given by the Department of the Interior, executor of the original Colorado River water use contracts, and the other California water agencies that, along with IID, hold the first three priorities to 3,850,000 acre-feet per year of Colorado River water.

Water Conservation

Conservation plays an unquestionably important role in effective management of available water supplies.

Since about one-half of all urban water use is for landscaping, DWR is working with municipal agencies to improve efficiency in landscape water use. In addition to water conservation research, DWR has several ongoing programs to disseminate information about conservation opportunities and techniques. One of the most effective ways of achieving this goal is through the Xeriscape conference. Xeriscape -- a word coined from the Greek xeros, for dry, and landscape -- is an annual conference promoting the design and planting of water-conserving landscapes.

A particularly significant endeavor in the area of conservation is the California Irrigation Management Information System (CIMIS), developed under contract by the University of California for DWR. CIMIS is a project to inform growers of how much water their crops are currently using and will require within a projected time. The research and development stage of this project has been concluded and DWR is implementing a three-year pilot program.

Local Water Supply Projects

SWP water supply can be augmented by projects in local areas. These local projects could be financed with available SWP funds and included in the Project, provided appropriate guidelines were met. The basic assumptions are that:

- any necessary SWP contract amendments are executed;
- yield developed by a local project as a unit of the SWP becomes part of the yield of the SWP, whether for the life of the project or for an interim period; and
- the local project must not adversely affect either the costs or water deliveries of nonparticipating SWP contractors.

DWR conducts a feasibility study of a local project when it appears from both the conceptual and reconnaissance reports, and from general contractor support, that the project is advantageous. Projects must be contractually, economically, and financially feasible as well as environmentally acceptable before they can become units of the SWP. Procedures for determining feasibility

and provisions for contract amendments to allow for repayment of construction and operations costs have been established by DWR.

Local projects eligible to be added 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 is signed. The most recent policy statement regarding implementation, repayment, and inclusion of local projects into the SWP is the "Revised Guidelines on Funding Local Water Supply Projects for Inclusion in the State Water Project," dated December 30, 1982. These guidelines apply to local agencies, SWP contractors, and DWR.

Santa Barbara County. Since mid-1981, DWR has completed review of six conceptual reports submitted by Santa Barbara County Flood Control and Water Conservation District (SBCFC&WCD). The six reports covered eight local projects, six of which appeared to warrant further investigation (enlarging Cachuma Reservoir, constructing Hot Springs Dam and Reservoir immediately upstream of Cachuma Reservoir, enlarging Gibraltar Reservoir, constructing Camuesa Dam and Reservoir, and water reuse projects proposed by Goleta Water District and the City of Santa Barbara).

Following these investigations, DWR recognized that Santa Barbara County local projects could not be studied independently from the total countywide system. It also became apparent that various combinations of local projects and a downsized Coastal Branch should be investigated. SBCFC&WCD and DWR entered into an agreement in January 1983, to conduct a cooperative reconnaissance study to evaluate the various SWP alternatives available to Santa Barbara County, and to provide guidance to DWR on future plans for the Coastal Branch. The evaluation accounted for the engineering, economic, financial, and environmental impacts of each project on an individual basis. This study was completed and a report was released in April 1985, "Santa Barbara County State Water Project Alternatives".

On the basis of this report, in July 1985, SBCFC&WCD asked DWR to conduct a feasibility study of enlarging the existing Cachuma Reservoir by raising Bradbury Dam on the Santa Ynez River. According to the District, the report showed that a local project on the Santa Ynez River, with SWP participation in funding, could supply to users in the southern part of the county with less expensive water than SWP water from the California Aqueduct. Before proceeding with the feasibility study, however, which could cost the SWP contractors more than $1 million, DWR prepared a summary of the potential financial impacts on the contractors of incorporating this local project into the SWP. This summary and a proposed scope of study for the feasibility study were submitted to all SWP contractors for their comments and concurrence.

Using the comments received from the SWP contractors, DWR initiated the feasibility study for the Cachuma Enlargement Project in February 1986. The objectives of the study 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) define the costs for this project accurately; (3) define a plan for financing the enlargement as a feature of the SWP; and (4) define the financial impacts on SWP contractors. The study is scheduled for completion by late 1988.

Cachuma Reservoir is owned by the USBR, which will be cooperating as necessary in the feasibility study. The USBR is considering modifications to Bradbury Dam for dam safety purposes; such modifications could be carried out in conjunction with the raising of the dam for water supply purposes.

San Luis Obispo County. In January 1984, San Luis Obispo County and DWR initiated a joint study to update the County's 1972 Master Water Plan. The objective of this study, with respect to the SWP, was to evaluate SWP water importation through the Coastal Branch in conjunction with identifying potential SWP local projects. Results of the study, presented in early 1986, indicate that the most cost effective water supply alternative would be importation of SWP water. Based upon this finding, no SWP local projects were recommended for a SWP feasibility study.

The County is currently evaluating the results of this study. By late-1986 the County expects to determine if the importation of SWP water will best serve their local needs. The County will then notify DWR whether to proceed with or continue to postpone construction of the Coastal Branch.

Water Marketing

In the West, where water has been treated as a public commodity, there is increasing pressure to buy, sell, and lease it in the open marketplace. Rising water costs, stiff competition for public funds, and increased pressures on existing supplies from a number of competing uses have generated interest in water marketing as one alternative for satisfying some water needs.

Whereas economists may view the market as a means of achieving efficiency, others see equity questions, such as how to include the value of instream uses in a market situation. What may be perceived as the highest and best use may be more a measure of the comparative purchasing power of different groups than an optimum use pattern for the benefit of society.

Those holding water rights may find it economically advantageous because they can get more benefit from the sale of water than if they use it themselves; and buyers may find direct purchases less expensive than new development projects.

Theoretically, economic efficiency can be gained by facilitating the movement of water to its "highest and best use." However, the tangled web of water rights, rates, and agencies does not give way easily to an open-ended, free market exchange of water. Those who have examined the marketing concept point out that many issues need to be resolved, including: potential impacts on other water rights and water users in the seller's area; the relationships between contractors, agencies, and users; and a number of political, legal, and economic questions.

At this point, just how "free" and extensive a role the marketing approach may take in California remains to be seen. The statewide conference about this topic, held in February 1986, is indicative of the increased public awareness of this matter. Equally important is recent legislation that is gradually eliminating some of the obstacles to a marketing approach. In 1979, the Water Code (Section 1112) was amended to ensure that users who conserve water retain their rights to that water.

Under current water supply contracts, any sale, lease, or exchange of SWP entitlement water must be approved by DWR's director. Historically, DWR has responded to such requests on a case-by-case basis. DWR's position is that proposals to reduce SWP costs by

exchanging and/or selling water rights to SWP water should be considered along with other proposals in the interest of maintaining the financial integrity of the Project.

The 1976-77 drought provided the SWP its first experience in a "marketing" approach to water allocation. Both the State and federal governments actively promoted sales, leases, and exchanges of water allocations. From DWR's point of view, the most prominent sale involved a reallocation of about 300,000 acre-feet of SWP water from MWDSC to agricultural districts in the San Joaquin Valley. Cost of the water was about $90 per acre-foot, which represented the cost of SWP water plus the cost of pumping MWDSC's replacement supply from the Colorado River.

Under the administration of the USBR, the federal government also operated a water market during the drought. Seven water agencies supplied water and 30 irrigation districts withdrew water from a "water bank." The purchase price was negotiated with each seller; payment was based upon the value the sellers would have derived from the water had they used it themselves, plus delivery costs. Prices ranged from $15 to $87 per acre-foot.

Both the State and federal programs were emergency measures, as were several transfers undertaken by local agencies. Nevertheless, the experience of the drought demonstrated the practical feasibility of transferring and/or exchanging water through the marketing process.

Some market opportunities exist at the present time. Although little water trading has actually taken place, there is a growing movement and dialogue to eliminate obstacles which, up to this time, have precluded marketing water as a significant water management option. DWR is considering a number of possibilities for augmenting SWP water supplies through purchases.

CVP Purchases. For the past few years, DWR and the USBR have discussed the possible long-term conveyance of CVP water through SWP facilities. Under contracts executed in 1975 and 1976, DWR conveys CVP water through SWP facilities to the turnout to 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 cost of the delivery of SWP water to SWP contractors. DWR has also entered into annual conveyance agreements in recent years to serve other CVP customers in the San Joaquin Valley.

DWR has 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, while continuing to plan SWP facilities for the long term. The pending USBR-DWR Coordinated Operation Agreement provides that the USBR and DWR will negotiate a contract by December 31, 1988 for the sale of interim federal water to DWR and for the conveyance of federal water through SWP aqueduct facilities.

Garden Bar Project. For several years, South Sutter Water District (SSWD) has worked on a proposal to construct Garden Bar Dam and Reservoir on the Bear River, immediately upstream of Camp Farm West Reservoir, which SSWD owns and operates. SSWD has formed a Garden Bar development team with Parsons Brinckerhoff Quade and Douglas, Inc., and Guy F. Atkinson Construction Co. The development team investigated a plan that would provide for the sale of water to the SWP and energy to an electrical utility.

In January 1982, the development team approached DWR and the SWP contractors with the concept of selling water to the SWP. In January 1985, DWR sent a letter to SSWD expressing interest in continuing discussions for the possible purchase of a firm water supply of up to 60,000 acre-feet per year. Also in January 1985, SSWD filed an application for license with the Federal Energy Regulatory Commission (FERC). FERC staff informed SSWD in September 1985 that SSWD's application did not conform to FERC regulations and rejected the application. The development team then appealed the staff rejection to the Commission and also filed a new license application. The application was ultimately accepted by the Commission in February 1986, and was noticed for comments by affected parties.

As the SWP contractors' apparent willingness to pay for new water supplies decreased, the financial feasibility of the Garden Bar Project also decreased. In light of this situation, the development team entered into a series of discussions with DWR and the SWP contractors. At a February 1986 meeting, the SWP contractors told the Garden Bar development team that they could not pay the water price required to finance the project and thus would be unable to participate.

Blue Ridge Project. Yolo County Flood Control and Water Conservation District has made a preliminary analysis of a dam in northern Yolo County that would provide water supply in excess of local needs. The District has contacted DWR to determine if the SWP would be interested in water from such a project. DWR staff will do some analytical work to determine if the project has any potential as a future supply.

Cosumnes River. In January 1983, the counties of Sacramento, San Joaquin, Amador, and El Dorado joined to create the Cosumnes River Water and Power Authority (CRWPA). The purpose of the Authority is to investigate the feasibility of developing a water supply and hydroelectric power project that would help to satisfy the water supply needs of the member entities.

In November 1983, CRWPA proposed that DWR purchase the available firm yield of the proposed Cosumnes River Water and Power Project and finance an estimated $6 million of prelicensing costs. The project would consist of a series of perhaps eight dams with accompanying power facilities.

In August 1984, after a number of meetings, and following review and analysis, DWR declined to participate in the project at the time. In response to comments from DWR, the CRWPA Board of Directors in May 1985 directed its engineering consultant to develop a plan to build the project in stages. In December 1985, the board of directors agreed that they should proceed with Phase I of the project (two lower elevation reservoirs and certain power facilities) and use all revenues to repay the financing of the project, which is anticipated to take over 20 years. CRWPA is now in the process of securing a "turnkey operator" to engineer and handle financing for the project. As of June 1986, CRWPA had not made a new proposal to DWR.

Chapter VI

SWP POWER SUPPLY, PRESENT AND FUTURE

This chapter assesses SWP power needs, the resources available to meet those needs, and projected power costs.

Power Requirements

While preparing the annual Statements of Charges to water contractors, DWR develops and assesses short- and long-range aqueduct operational studies. These studies are needed to project the electrical capacity and energy required to operate the SWP in future years, including pumping to (1) deliver the SWP contractors' requested entitlement water, (2) provide recreation water, (3) replace reservoir and aqueduct losses, and (4) increase reservoir storage south of the Delta. In comparison to entitlement deliveries, the latter factors are relatively minor. The operational studies do not project the amount of electrical capacity and energy required to deliver surplus water.

The SWP aqueduct operational studies are based upon median-year water supply conditions. However, SWP power requirements can vary significantly, depending upon the balance of water supply and water demand in a given year. Dry conditions in Northern California reduce the deliverable water supply, thereby decreasing power requirements if the SWP cannot deliver full entitlement requests. Power requirements also decrease if hydrologic conditions or requests for reductions in deliveries from local water agencies reduce the projected demands for SWP water in the San Joaquin Valley or Southern California. SWP power requirements would be larger than projected only if water demands increased or if additional pumping was required to refill reservoirs south of the Delta after a dry year (and sufficient water supplies were available).

Table 15 shows the projected entitlement water requests, the electrical energy required to operate the SWP, and transmission losses. Losses depend upon contractual arrangements with utilities providing transmission services. Table 15 also includes energy deliveries to the Southern California Edison Company (SCE), pursuant to the 1979 DWR-SCE Power Contract and the 1981 DWR-SCE Capacity Exchange Agreement. (See "Exchanges" in this chapter.)

In addition to energy requirements, DWR must also consider electrical capacity requirements--the rate of delivery or demand for electrical energy during a given time period. Since DWR has flexibility in regulating the SWP's electrical demand, the SWP is operated to minimize pumping demand during on-peak periods, when capacity and energy costs are greatest. Thus, the SWP's maximum electrical capacity requirement occurs during off-peak periods (nights, weekends, and holidays).

Table 16 shows the projected SWP on-peak and off-peak maximum pumping demands (capacity requirements) for 1990 and 2000 during the months of highest system use. In this table, off-peak maximum monthly pumping loads are projected to occur in the winter, thus taking advantage of seasonal power cost differentials. On-peak maximum monthly pumping loads are projected to occur in the spring. The total capacity requirements in Table 16 consist of pumping loads, reserve margin requirements, tranmission losses, and DWR capacity obligations to SCE.

TABLE 15: PROJECTED WATER DELIVERIES AND ENERGY REQUIREMENTS

	Calendar Year			
	1986	1990	1995	2000
Entitlement Requests (thousands of acre-feet)				
Feather River Area	3	4	31	33
North Bay Area	5	26	43	52
South Bay Area	143	161	184	188
San Joaquin Valley Area	1,172	1,355	1,355	1,355
Southern California Area	997	1,304	1,440	1,606
Central Coastal Area	-	-	70	70
Total	2,320	2,850	3,123	3,304
Energy Requirements (millions of kWh)				
North Bay Aqueduct Plants				
Barker Slough	-	4	8	10
Cordelia	-	8	11	14
Interim Pumping Plant	2	-	-	-
South Bay Aqueduct Plants				
South Bay	105	129	147	150
Del Valle	2	1	2	2
California Aqueduct Plants				
Banks Delta	672	875	903	995
San Luis	185	232	171	211
Dos Amigos	288	380	396	435
Buena Vista	281	381	393	459
Wheeler Ridge	290	418	433	514
Chrisman Wind Gap	598	872	903	1,079
A. D. Edmonston	2,055	2,972	3,081	3,696
East Branch Plant				
Pearblossom	332	526	606	719
West Branch Plant				
Oso	111	151	135	164
Coastal Branch Plants				
Las Perillas	10	10	16	16
Badger Hill	24	26	40	40
Devil's Den	-	-	44	40
Sawtooth	-	-	35	35
Polonio	-	-	93	93
Subtotal(a	4,955	6,985	7,417	8,672
Transmission Losses(b	380	243	248	267
SWP Pumping Energy Requirement	5,335	7,228	7,665	8,939
Energy Obligations to SCE	1,479	2,362	2,373	2,450
Total SWP Energy Requirement	6,814	9,590	10,038	11,389

a) Pumping energy requirements based upon energy to deliver SWP contractors' requested entitlement water, recreation water, reservoir and aqueduct losses, and replacement of reservoir storage south of Delta.

b) Transmission losses depend upon contractual arrangements with the utilities rather than actual losses.

TABLE 16: PROJECTED ELECTRICAL CAPACITY REQUIREMENTS

Pumping Plant	Peak Demand Load During Month of Highest System Use (MW)			
	1990		2000	
	On-Peak	Off-Peak	On-Peak	Off-Peak
North Bay Aqueduct				
Barker Slough	1	(a	1	1
Cordelia	1	1	2	1
South Bay Aqueduct				
South Bay	18	8	19	15
Del Valle	(a	(a	(a	1
California Aqueduct				
Banks Delta	86	157	38	250
San Luis	1	173	1	198
Dos Amigos	28	41	33	60
Buena Vista	38	75	44	75
Wheeler Ridge	34	89	44	89
Chrisman Wind Gap	67	207	86	207
A. D. Edmonston	230	688	287	746
East Branch				
Pearblossom	76	76	87	129
West Branch				
Oso	(a	55	(a	44
Coastal Branch				
Las Perillas	1	(a	2	1
Badger Hill	3	1	5	3
Devil's Den	-	-	5	6
Sawtooth	-	-	5	5
Polonio	-	-	12	12
Total Capacity Needed to Pump Entitlement Water	584	1,571	671	1,843
Transmission Losses (5% of Pumping)	29	79	34	92
Reserve Margin (10% of Pumping and Losses)(b	61	165	71	194
Capacity Obligation to SCE	710	485(c	710	485(c
Total SWP Capacity Requirement	1,384	2,300	1,486	2,614

a) Less than 0.5 MW.
b) During the on-peak period, 10% 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 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.

Power Resources

The basic goals of DWR's long-range power supply program are to:

- o obtain adequate, reliable, competitively-priced power supplies and transmission services, so the SWP will be capacity and energy self-sufficient and can operate as an independent and interconnected utility;
- o develop and manage those power resources to provide flexibility in meeting water delivery obligations at minimum cost and to maximize benefits to the people of California; and
- o minimize the impact on the SWP when key contractual arrangements expire in 2004.

DWR's power supply program seeks to structure the use of existing SWP resources for maximum benefit to the SWP and to reduce dependence upon utilities that may rely on fuel oil and natural gas for the major portion of their power generation. To achieve these aims, DWR has constructed and acquired hydro, coal, and geothermal power resources, and has contracted to purchase capacity and energy from other utilities. Figure 10 shows the SWP power facilities currently in operation or under construction. These, and other power resources available to the SWP, are described in the following sections.

Hydro

Economical hydroelectric generation provides the largest share of the SWP power resources. The 900 MW produced at Hyatt-Thermalito supply about 2.4 billion kWh in a median water supply year. Generation at the existing SWP power recovery plants (San Luis, Alamo, Devil Canyon, Warne, and Castaic) varies with water conveyance; in general, the combined 648 MW capacity at these five plants will be able to recover about one-fourth of the total energy used for SWP pumping.

Alamo Powerplant, a 17-MW recovery facility on the East Branch, began commercial operation in summer 1986. It will recover energy formerly dissipated in the Cottonwood Chutes. The plant construction just completed provides for installation of a second generating unit in conjunction with enlargement of the East Branch of the California Aqueduct (see Chapter III).

One additional SWP hydroelectric facility is under construction at Thermalito Diversion Dam near Oroville. Construction of the 3-MW power plant began in late 1984; it is expected to be on line in the spring of 1987.

For energy accounting purposes in this bulletin, basic SWP resources include the total output of the Hyatt-Thermalito, Devil Canyon, and Alamo facilities. The energy returned off-peak by SCE is treated separately, as described in the discussion under "Exchanges."

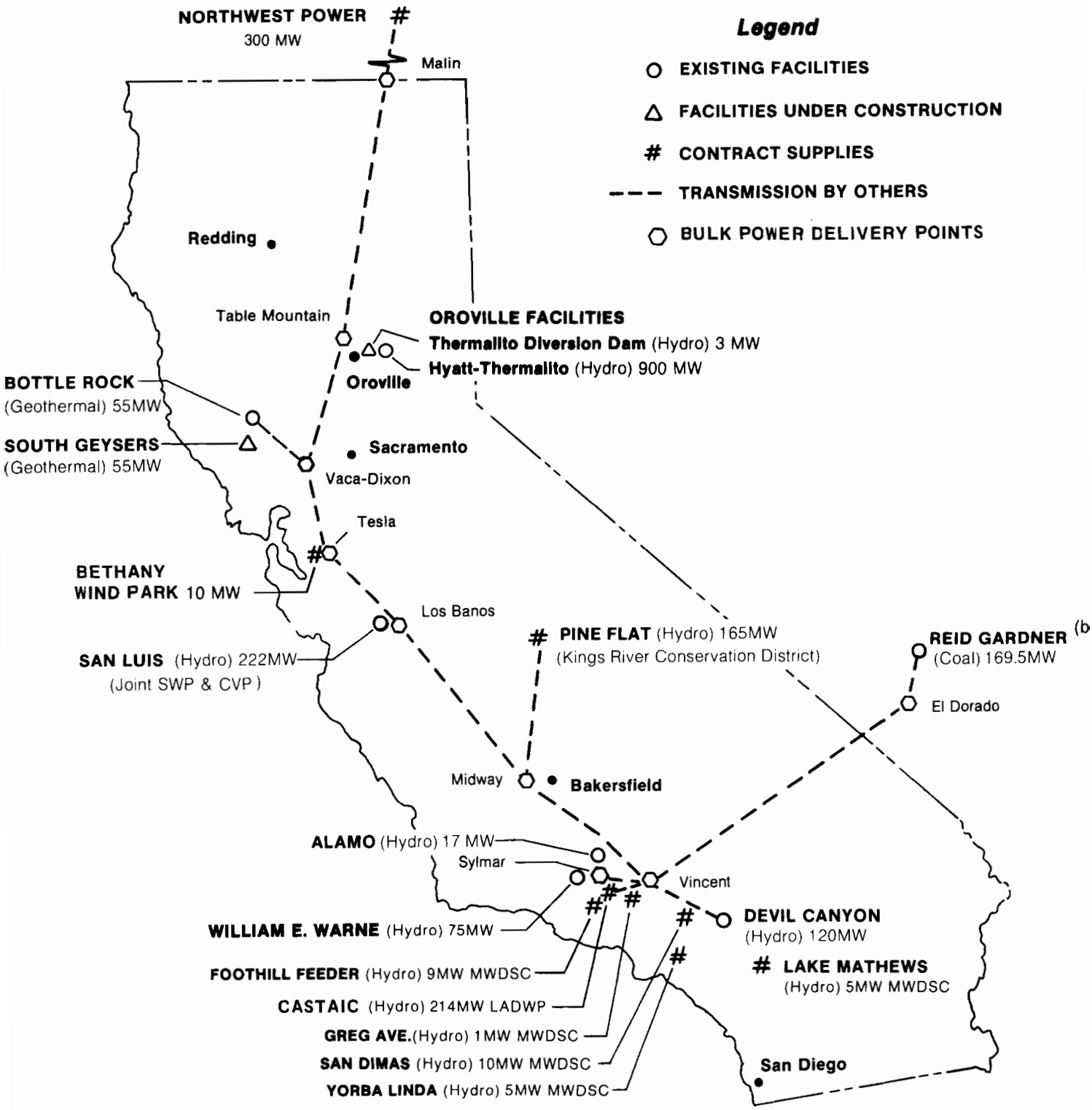
DWR purchases hydro generation developed by others. For example, DWR purchases the output of the 165-MW Pine Flat Powerplant from the Kings River Conservation District. This facility comprises three 55-MW turbine-generating units, the last of which became commercially operable in April 1984. Pine Flat Powerplant will provide an average of approximately 390 million kWh per year to the SWP.

DWR also contracts for the output from five hydroelectric facilities owned and operated by MWDSC. (See following discussion of "Exchanges.")

Exchanges

Another significant SWP power resource results from the 1979 Power Contract

FIGURE 10: SWP POWER FACILITIES (a



NOTES:

a) Power exchange and transmission services provided by Pacific Gas and Electric Co., Southern California Edison Co., San Diego Gas and Electric Co., and Los Angeles Department of Water and Power.

b) 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.

and the 1981 Capacity Exchange Agreement with SCE. Services under the 1979 Power Contract were available in April 1983; services under the 1981 Capacity Exchange Agreement will be available no later than April 1987. The future additional energy to the SWP through these transactions is currently projected to range from about 1.3 to 1.7 billion kWh annually. The additional energy is determined through a complex formula that includes factors reflecting oil prices. Because of the recent sharp drop in oil prices, current projections of the additional energy for the SWP are significantly larger than those shown in previous editions of Bulletin 132 and may increase with subsequent revisions.

Under the 1979 Power Contract, DWR delivers to SCE:

- 350 MW of capacity and approximately 40 percent of the energy from Hyatt and Thermalito Powerplants;
- up to 120 MW and all of the energy output of Devil Canyon Powerplant and;
- up to 15 MW and all of the energy output of Alamo Powerplant.

In return, the SWP receives a greater amount of energy than it delivers to SCE. This energy is delivered during off-peak hours.

Under the 1981 Capacity Exchange Agreement, DWR will deliver to SCE 225 MW of on-peak capacity and 412.5 million kWh per year. As with the Power Contract, SCE will return a greater amount of energy during off-peak hours, than it receives.

DWR contracts for the energy output from five hydro plants owned by MWDSC. Under the DWR-SCE Power Contract however, SCE receives energy from four of the five plants, then returns exchange energy to the SWP during off-peak periods. Under a 1983 agreement with the Los Angeles Department of Water and Power (LADWP) the energy from the fifth MWDSC hydro facility is made available by DWR to LADWP, and LADWP later returns exchange energy off-peak to DWR. Combined, the five MWDSC facilities are rated at 29.5 MW.

Through the signing of additional interchange agreements, DWR has expanded its opportunities for the interchange of economy energy with several utilities in California, the Pacific Northwest, and the Southwest. These agreements, common in the electric utility industry, provide for hourly or daily economy energy transactions. This permits more efficient use of generation capacities, more efficient scheduling of energy deliveries, and general economies through interchange of energy. The terms of these agreements are generally between 25 and 30 years. Negotiations for additional interchange agreements are currently underway.

Coal

DWR and the Nevada Power Company (NPC) are joint owners of the Reid Gardner Unit No. 4, a coal-fired facility located east of Las Vegas. DWR has received energy from this source since July 1983. The original Units 1, 2, and 3, with a combined capacity of 330 MW, are owned exclusively by NPC. The new Unit 4, rated at 250 MW, is jointly owned by DWR (67.8 percent) and NPC (32.2 percent), which gives DWR a 169.5-MW share of ownership of the rated capacity. Under the participation agreement with NPC, DWR receives up to 226 MW from Reid Gardner Unit No. 4 in exchange for NPC's limited right to interrupt DWR deliveries. DWR receives return energy or payment based upon combustion turbine cost whenever NPC schedules energy from DWR's share of the unit output. The scheduling of energy to the SWP depends upon the

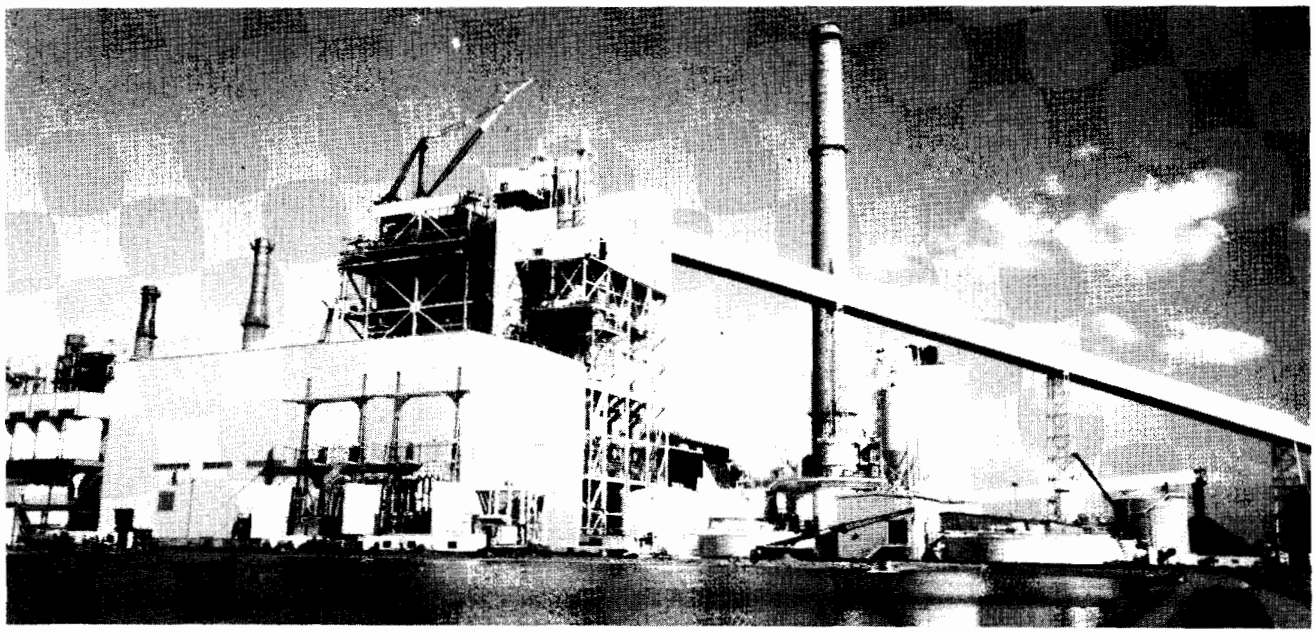
manner in which NPC exercises its rights to obtain peaking capacity through interruption of SWP service. After 15 years of operation, NPC will have an annual option to buy back up to 6 percent of the original DWR share (67.8 percent X 0.06 = 4.068 percent).

Geothermal

DWR's 55-MW Bottle Rock Powerplant in the Geysers area of Lake County began operation in February 1985. Bottle Rock Powerplant is operated and maintained by DWR. Geothermal steam for the plant is provided under a contract with MCR Geothermal Corporation and others.

DWR's second geothermal facility is the South Geysers Powerplant in Sonoma County. Three steam wells were originally drilled on the property; these provided the basis for DWR's decision to construct the plant. In the summer of 1984, Geothermal Kinetics Inc., and Trans Canada Pipelines Ltd., drilled a well and two side tracks that failed to produce commercial quantities of steam. Subsequent analyses by geothermal reservoir consultants indicated that the steam resources available from the lease were not capable of supporting a 55-MW power plant. Effort was then concentrated upon assessing all steam supply alternatives and securing an assured supply.

Studies and negotiations related to possible steam supplies indicate the most favorable approach is to develop the plant cooperatively with Pacific Gas and Electric Company (PGandE), requiring PGandE to bring supplemental steam to the plant from their supplies. In the meantime, construction work under contracts already awarded has been brought to a conclusion to minimize financial commitment. Equipment being fabricated under the major furnish-and-install contracts is being stored off the site. Once a steam supply is assured, contracts for the remaining construction will be advertised, and a schedule for completion of the plant will be established. The energy



Reid Gardner Unit No. 4 is east of Las Vegas. This coal-fired facility, jointly owned by DWR and the Nevada Power Company, was the largest single source of SWP energy during 1985.

analyses for this bulletin are based upon the assumption that South Geysers Powerplant will be operational in January 1989.

Wind

DWR has an agreement with TERA Power Corporation to purchase wind-generated electrical energy delivered from the Bethany Wind Park to South Bay Pumping Plant near Tracy. When the Bethany Wind Park is fully completed, TERA will have an installed wind turbine capacity totaling 10 MW.

Power and Interruptible Energy Purchases

Power purchases are defined as capacity and energy purchases (firm purchases) during a definite time period. These purchases are an important component of DWR's power supply program. To make optimum use of all resources and to obtain economical power, DWR is party to various power contracts with several utilities. DWR currently has long-term contracts providing options to purchase power from SCE and the Bonneville Power Administration. During the past year, DWR also executed short-term purchases of power from Portland General Electric Company and Pacific Power and Light Company. Other potential purchases are also being evaluated. Table 17 summarizes the major long-term SWP power contracts.

In addition to power purchases, DWR has several agreements for the purchase of interruptible economy energy. Utilities with which DWR has executed agreements for such economy energy purchases are also included in Table 17.

Other Projects

Potential projects for the DWR power supply program are continually being studied and evaluated. These projects are evaluated on such factors as ability to meet anticipated power requirements, cost, financing considerations, environmental impacts, and operating characteristics. On the basis of these evaluations, a project may be recommended for inclusion, exclusion, or deferral in the program.

Several such projects are currently under consideration by DWR. Construction of a power plant on the Mojave Siphon, north of Silverwood Lake, is being evaluated. Enlargement of the East Branch of the California Aqueduct will entail new units at the Alamo, Mojave Siphon, and Devil Canyon power plants. Additional capacity at the Hyatt-Thermalito facilities is also being studied.

Current SWP power studies assume that San Luis Obispo Powerplant, with a capacity of about 5 MW, will be constructed for power recovery on the Coastal Branch, Phase II; however, as discussed in Chapter III, completion of the Coastal Branch is under review.

In addition, DWR is currently evaluating the additional load management capability that will result from construction of the final four units at the Banks Delta Pumping Plant. Existing contractual power resources are also being reevaluated to assure an equitable sharing of benefits.

DWR has determined that development of hydroelectric facilities at several locations on the SWP was not economically justified. The decision to not proceed with these facilities led to considerable interest in development by other organizations. In June 1985, DWR issued a Request for Proposals for development at two of the sites (Palermo Outlet at Oroville Dam and Castaic Outlet). After analyzing the proposals received, DWR determined that the proposals most beneficial to the SWP were submitted by Associated Engineering Consultants for Palermo

Outlet and Castaic Lake Water Agency for Castaic Outlet. Contracts with these organizations are being negotiated. Additional sites may be advertised for development in the future.

DWR is a participant in the Heber Binary Geothermal Demonstration Project, which is managed by the San Diego Gas and Electric Company. For several reasons, liquid-dominated geothermal technologies will not contribute to SWP power resources in the foreseeable future. Therefore, DWR negotiated to change its status to that of a contributor to the project, rather than an owner. As such, DWR receives the benefits from all design, construction, and operating experience, but is not obligated to receive or pay for any plant capacity or energy.

DWR owns a Federal Geothermal Leasehold in Lake County (the Binkley Leasehold). DWR will decide disposition of this asset after it determines whether the leasehold is necessary in negotiations for a South Geysers steam supply.

Transmission Service

DWR must make arrangements for transmission service between SWP resources and loads, and to interconnected utilities for purchases, sales, and exchanges of power. At present, most SWP transmission needs are 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. To this end, DWR will continue to participate in studies to:

- develop new transmission interties from the Oregon-California border to Southern California;
- develop alternative transmission paths between DWR resources and loads to achieve a greater degree of operating flexibility; and
- develop additional transmission arrangements to the Southwest.

Since May 1983, DWR has had a temporary interconnection between the Hyatt-Thermalito Line No. 1 and the Western Area Power Administration (WAPA) 230-kV Cottonwood-Elverta No. 3 line. This interconnection is to remain in effect until the upgrade of the 500-kV transmission line between Table Mountain, Tesla, and Vaca-Dixon substations is complete, probably in late 1986. The interconnection permits DWR to send up to 270 MW from Hyatt Units 1 and 2 over WAPA's transmission line to Tesla Substation. This action was necessary to prevent potential extensive curtailments of firm Hyatt-Thermalito power.

DWR has contracted through 2004 for 300 MW of transmission capacity in the extra high voltage (EHV) Pacific Northwest Intertie from the Oregon-California border to the Table Mountain, Tesla, Los Banos, and Midway substations. DWR plans to retain its entire 300-MW share of this EHV transmission capacity in order to maintain access to Northwest power markets, where purchases of less expensive power and exchanges could continue to result in significant savings for the SWP. Through the Western Systems Coordinating Council, DWR has been monitoring studies conducted by the Bonneville Power Administration, Pacific Power and Light Company, PGandE, and SCE to upgrade the existing Pacific Northwest Intertie to 3,200 MW.

On December 14, 1984, DWR signed a Memorandum of Understanding with the major California public and private electric utilities pertaining to construction and operation of a new

TABLE 17: SUMMARY OF MAJOR

	Contract Title (Short Form) and Date Signed	With	Providing	To
1.	West Branch Cooperative Development (9/2/66)	Los Angeles Department of Water and Power	Joint development of Castaic Powerplant on the California Aqueduct, West Branch	1/1/42
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	1/1/05
3.	Bonneville Power Administration (9/5/67)	Bonneville Power Administration	Purchase of surplus BPA energy at Oregon-California border	8/30/86
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 4/1/08
6.	San Diego Gas and Electric EHV Settlement (5/25/78)	San Diego Gas and Electric Company	Establishes extent of SDGandE's obligation to supply off-peak energy during the remaining term of the EHV contract, and resolves disputes concerning DWR's use of its EHV transmission entitlement	1/1/05
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	7/26/13
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	1/1/05
9.	Firm Transmission Service Agreement (10/11/79)	Southern California Edison Company	Transmission service between El Dorado and Vincent substations	7/26/13
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	1/1/05
11.	Pine Flat (11/6/79)	Kings River Conservation District	Purchase of hydroelectric output from Pine Flat Powerplant	4/1/34
12.	Emergency Services Agreement (7/21/80)	Southern California Edison Company	Emergency service between the parties	12/31/04
13.	Capacity Exchange Agreement (9/17/81)	Southern California Edison Company	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	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 1465 MW of firm energy transmission service in PGandE'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	6/1/12
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 District's system	6/1/12
19.	Power Sale Agreement (5/14/82)	TERA Power Corporation	Sale of energy to DWR from wind-powered generation facilities constructed by TERA	5/3/02
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. PGandE Agreement also defines the rate for EHV off-peak energy purchases	12/31/04 and 1/1/05, respectively

SWP POWER CONTRACTS

	Contract Title (Short Form) and Date Signed	With	Providing	To
21.	Interchange Agreement (6/29/83)	San Diego Gas and Electric Company	Energy exchanges between SDGandE 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 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.	Service Agreement (2/24/84)	Portland General Electric Company	Sale of nonfirm energy to DWR	12/31/87
26.	Energy Interchange Agreement (6/6/84)	Tucson Electric Power Company	Bilateral sale of economy energy	12/31/08
27.	Energy Interchange Agreement (7/27/84)	City of Pasadena	Bilateral sale of economy energy and interruptible transmission service	12/31/11
28.	Energy Interchange Agreement (7/27/84)	City of Riverside	Bilateral sale of economy energy	12/31/13
29.	Energy Interchange Agreement (7/27/84)	City of Glendale	Bilateral sale of economy energy	12/31/12
30.	Energy Interchange Agreement (7/31/84)	City of Burbank	Bilateral sale of economy energy	12/31/13
31.	Interconnection Agreement (7/31/84)	Nevada Power Company	Bilateral sale of economy energy	12/31/06
32.	Energy Interchange Agreement (9/17/84)	City of Anaheim	Bilateral sale of economy energy	12/31/13
33.	Service Agreement (11/1/84)	Montana Power Company	Sale of nonfirm energy to DWR	Until terminated by either party
34.	Economy Energy Agreement (11/6/84)	Salt River Project	Bilateral sale of economy energy	12/31/13
35.	Energy Interchange Agreement (12/1/84)	Northern California Power Agency	Bilateral sale of economy energy	12/31/09
36.	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 El Dorado and Mead substations, etc.	12/31/04
37.	Service Agreement (1/7/85)	Idaho Power Compay	Sale of nonfirm energy to DWR	Until terminated by either party
38.	Energy Interchange Agreement (4/18/85)	El Paso Electric Company	Bilateral sale of economy energy	12/31/10
39.	Interconnection Agreement ((4/18/85)	Portland General Electric Company	Bilateral sale of economy energy	12/31/10
40.	Interconnection Agreement (4/30/85)	Pacific Power and Light Company	Bilateral sale of economy energy	12/31/09
41.	Energy Interchange Agreement (4/30/85)	Seattle City Light	Bilateral sale of economy energy	12/31/15
42.	Power and Energy Interchange Agreement (6/3/85)	Arizona Public Service Company	Bilateral sale of economy energy	12/31/10
43.	Energy Interchange Agreement (8/20/85)	City of Santa Clara	Bilateral sale of economy energy	12/31/08
44.	Service Agreement (8/13/85)	Washington Water Power Company	Sale of nonfirm energy to DWR	Until terminated by either party
45.	Service Agreement (9/1/85)	Western Agency Power Administration (Sacramento Area Office)	Sale of nonfirm energy to WAPA	12/31/04

third transmission line connecting California with the Pacific Northwest. Under the Memorandum of Understanding, if the transmission line is built and certain other conditions are met, DWR will have an option to purchase a portion of the transmission capacity presently estimated at about 100 MW and an option to extend its 300 MW of transmission capacity entitlement for the life of the existing intertie lines.

The 1982 Comprehensive Agreement with PGandE provided DWR the option to purchase a share of the Geysers-Lakeville 230-kV transmission line. On May 25, 1984, DWR entered into an interim agreement with PGandE for the ownership of 165 MW of capacity on the Geysers-Lakeville line. DWR completed payment for its share of the transmission line in February 1985. The agreement preserves DWR's right for cotenancy of the line; it also contains the principles for the cotenancy agreement, which DWR plans to execute in 1986.

The 1982 EHV Settlement Agreement with PGandE provided DWR the option to purchase 75 percent of the Stub Transmission Line (Midway to Wheeler Ridge line), which serves Buena Vista, Wheeler Ridge, and Chrisman Wind Gap pumping plants. The Settlement Agreement also established principles for this purchase. A contract for the purchase, operation, and maintenance of the Stub Transmission Line was signed on November 15, 1984. The closing of the purchase of this line is expected to occur in 1987. DWR ownership of the Stub Transmission Line will result in less costly and more reliable transmission service.

Studies are also being made for a line between the Banks Delta and South Bay pumping plants. Such a line may provide additional flexibility for powering South Bay Pumping Plant.

On December 19, 1984, DWR signed an interruptible transmission agreement with SCE providing additional transmission service between Arizona and the DWR system. Additional transmission arrangements are being evaluated and pursued to expand opportunities for interchanges with other utilities.

Through the Western Systems Coordinating Council, DWR has also been monitoring studies being conducted by the Bonneville Power Administration, Pacific Power and Light Company, PGandE, and SCE to upgrade the existing Pacific Northwest Intertie to 3,200 MW.

Sales

DWR has entered into agreements with many utilities for short-term power sales and economy sales (sales of nonfirm energy). These agreements provide DWR with additional markets to sell power that is in excess of SWP needs. Surpluses may develop as a result of reduced demands for water deliveries in a given year or an abundance of hydro energy available from SWP facilities.

Payment to DWR for the sales can be in cash or, in some instances, return energy during periods of SWP power needs. For example, in 1985 DWR sold or exchanged energy with:

- Cities of Anaheim, Burbank, Glendale, Pasadena, Riverside, Santa Clara, and Vernon;
- Los Angeles Department of Water and Power;
- 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;
- Western Area Power Administration (Sacramento area).

Negotiations are continuing 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 capacity to the maximum extent possible. Power will be purchased for resale, as well as for direct SWP use.

Negotiations also continue with California and Southwest utilities for purchases and sales of power to maximize power benefits to the SWP.

Comparison of Power Requirements and Resources

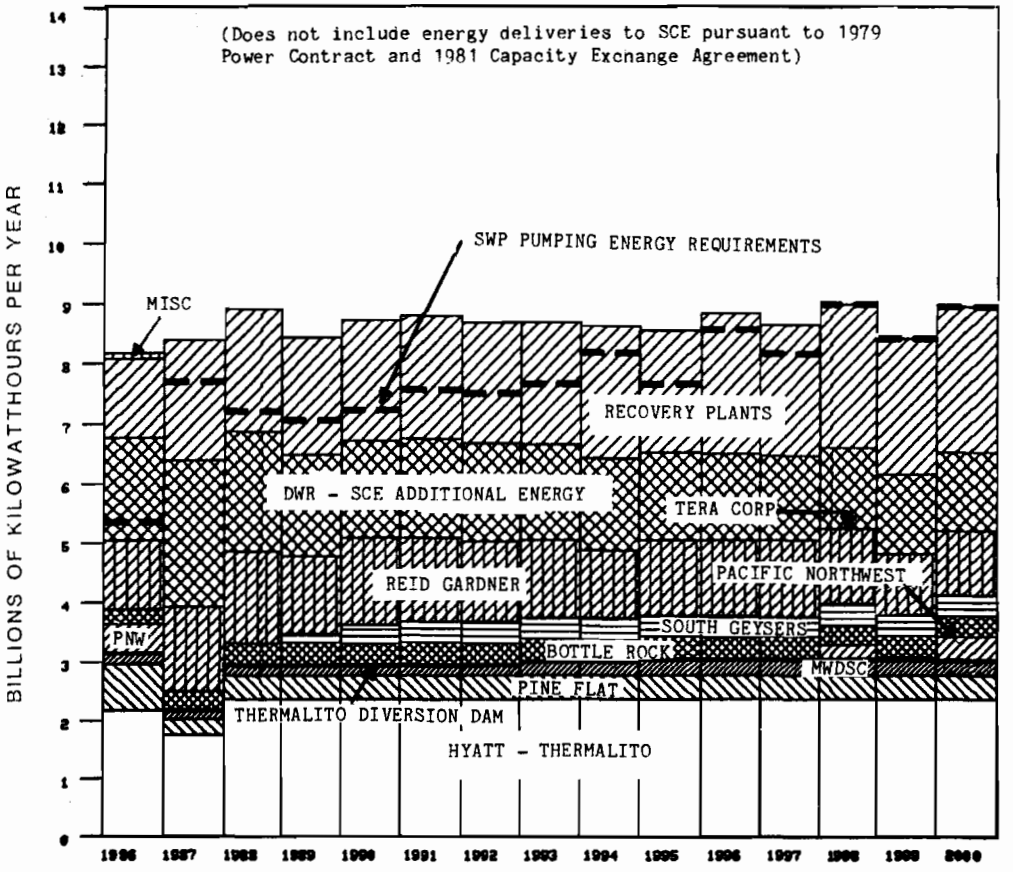
Figure 11 compares the projected annual energy resources expected to be available to the SWP with the projected annual SWP pumping energy requirements for the remainder of the century. The projected pumping energy requirements shown include transmission losses, as illustrated in Table 15. The projected energy resource outputs shown in Figure 11 include allowances for scheduled maintenance and forced outages. DWR bases its power resource planning for the succeeding year on a lower quartile inflow to reservoirs; that is, statistically the assumed inflow would be exceeded three out of four years. This approach guards against overestimating power resources, since a large portion of SWP resources rely upon hydroelectric generation. Therefore, the resources shown in Figure 11 indicates a reduction in 1987 from what had been projected in Bulletin 132-85. All other years assume a statistically median level of reservoir inflow. The resources include the net energy provided by SCE in exchange for SWP energy under the terms of the 1979 Power Contract and the 1981 Capacity Exchange Agreement. Finally, the projected energy resources include potential purchases from the Pacific Northwest; if purchased, this energy could be imported through use of the 300 MW of SWP transmission capacity on the Pacific Northwest Intertie.

Figure 11 shows only the energy requirements for pumping entitlement water and other related water. In addition, the SWP has energy requirements as a result of the contractual obligations to SCE, as illustrated in Table 15. Figure 11A illustrates total SWP energy requirements, including both the pumping energy and the contractual requirements. In Figure 11A, the total energy deliveries to SCE are included in the energy requirements, and the total energy provided by SCE is shown as a resource.

Figure 12 shows a monthly comparison of projected SWP energy resources and total SWP energy requirements in 1986, 1990, 1995, and 2000. As in Figure 11A, the energy requirements shown in Figure 12 include those for both SWP water service and contractual obligations. The resources include all energy received from the SCE exchange. Apparent energy surpluses and deficits occur in some months because energy requirements and resources are balanced annually. Load management techniques or energy exchanges with utilities will be used to balance monthly requirements and resources.

The projected total SWP on-peak and off-peak monthly capacity requirements and the SWP resources planned to meet those loads for 1990 and 2000 are shown in Figure 13. As in Table 16, both the on-peak and off-peak capacity requirements in Figure 13 include (1) transmission

FIGURE 11: ANNUAL SWP PUMPING ENERGY REQUIREMENTS AND RESOURCES



SWP energy requirements are based on delivery of requested entitlement water, recreation water, water to replace reservoir and aqueduct lossses, and additions to 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. Identified resources are:

	2000 Supply (billions of kWh)
Hyatt-Thermalito	2.38
Pine Flat (purchase under contract with Kings River Conservation District)	0.39
MWDSC Hydro (output of 5 small hydro plants on MWDSC distribution system, purchase under contract)	0.25
Thermalito Diversion Dam (operational in 1987)	0.02
Pacific Northwest Power (purchases from utilities in the Pacific Northwest)	0.37
Bottle Rock (SWP geothermal plant)	0.34
South Geysers (SWP geothermal plant, operational in 1989)	0.36
Reid Gardner Unit No. 4 (SWP share under 1979 agreement with Nevada Power Company	1.07
Wind (purchase under contract with TERA Power Corporation)	0.02
DWR-SCE Exchange (net energy gained from Southern California Edision Co. under 1979 DWR-SCE Power and 1981 Capacity Exchange Agreement	1.32
Recovery Plants (6 aqueduct energy recovery plants - San Luis, Alamo, Devil Canyon, Warne, Castaic, and San Luis Obispo	2.42
TOTAL RESOURCES TO MEET SWP ENERGY REQUIREMENTS (as shown in Figure 13)	8.94
"Return Energy" from Southern California Edison Co. under 1979 DWR-SCE Power Contract and 1981 Capacity Exchange Agreement	2.45
TOTAL RESOURCES TO MEET SWP ENERGY REQUIREMENTS AND DWR-SCE CONTRACTUAL OBLIGATIONS (as shown in Figure 13A)	11.39

FIGURE 11A: ANNUAL TOTAL SWP ENERGY REQUIREMENTS AND RESOURCES

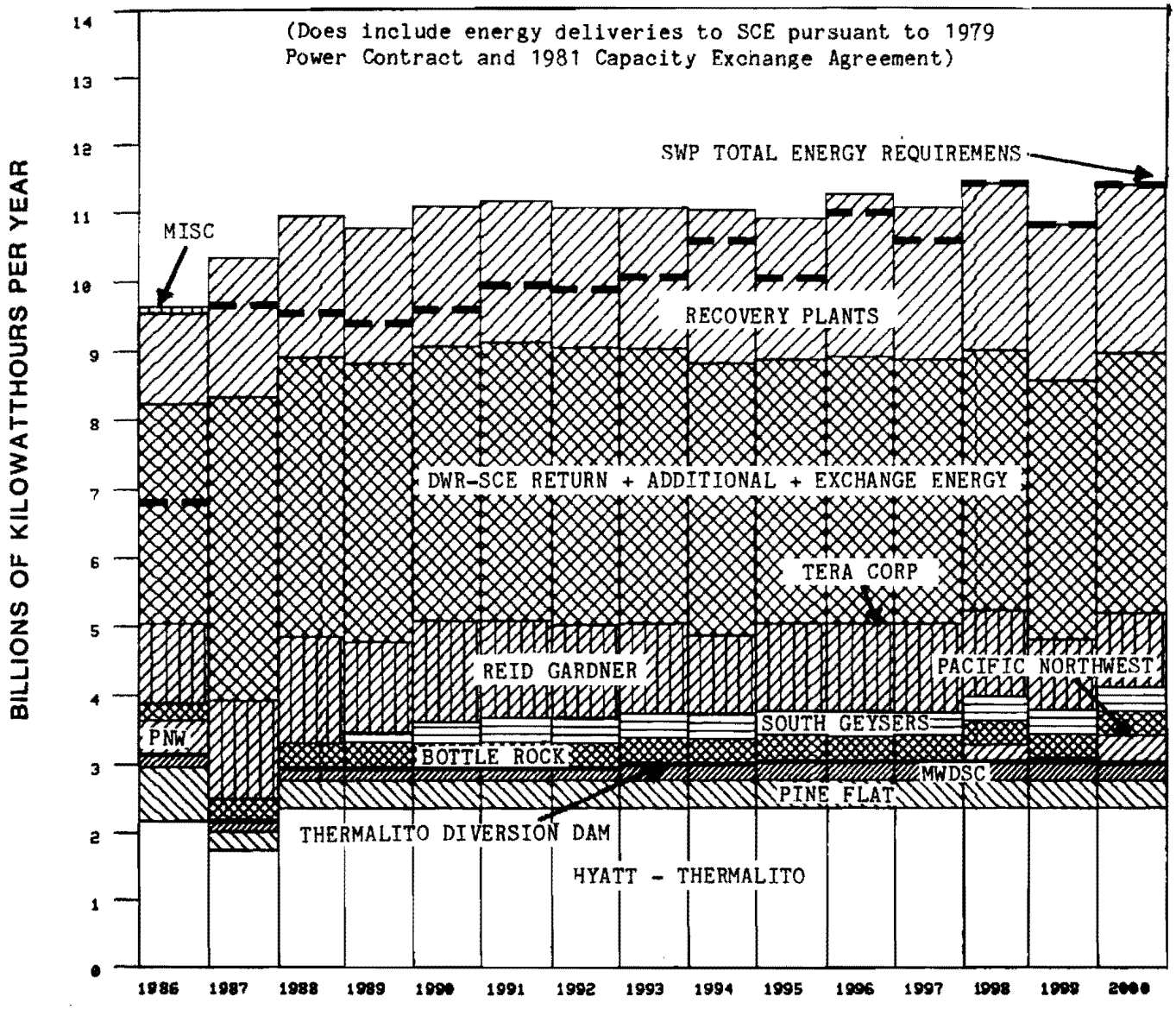
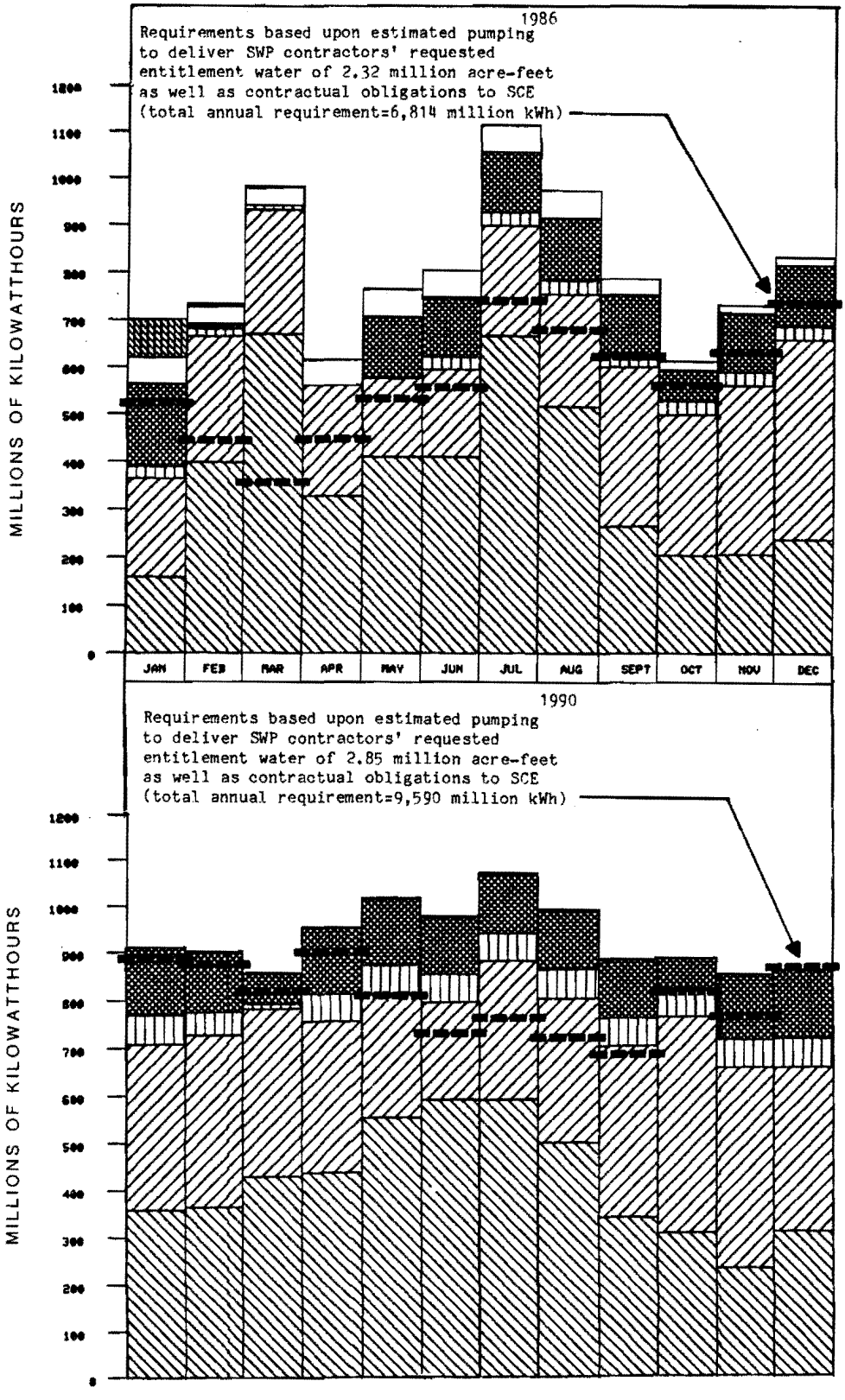


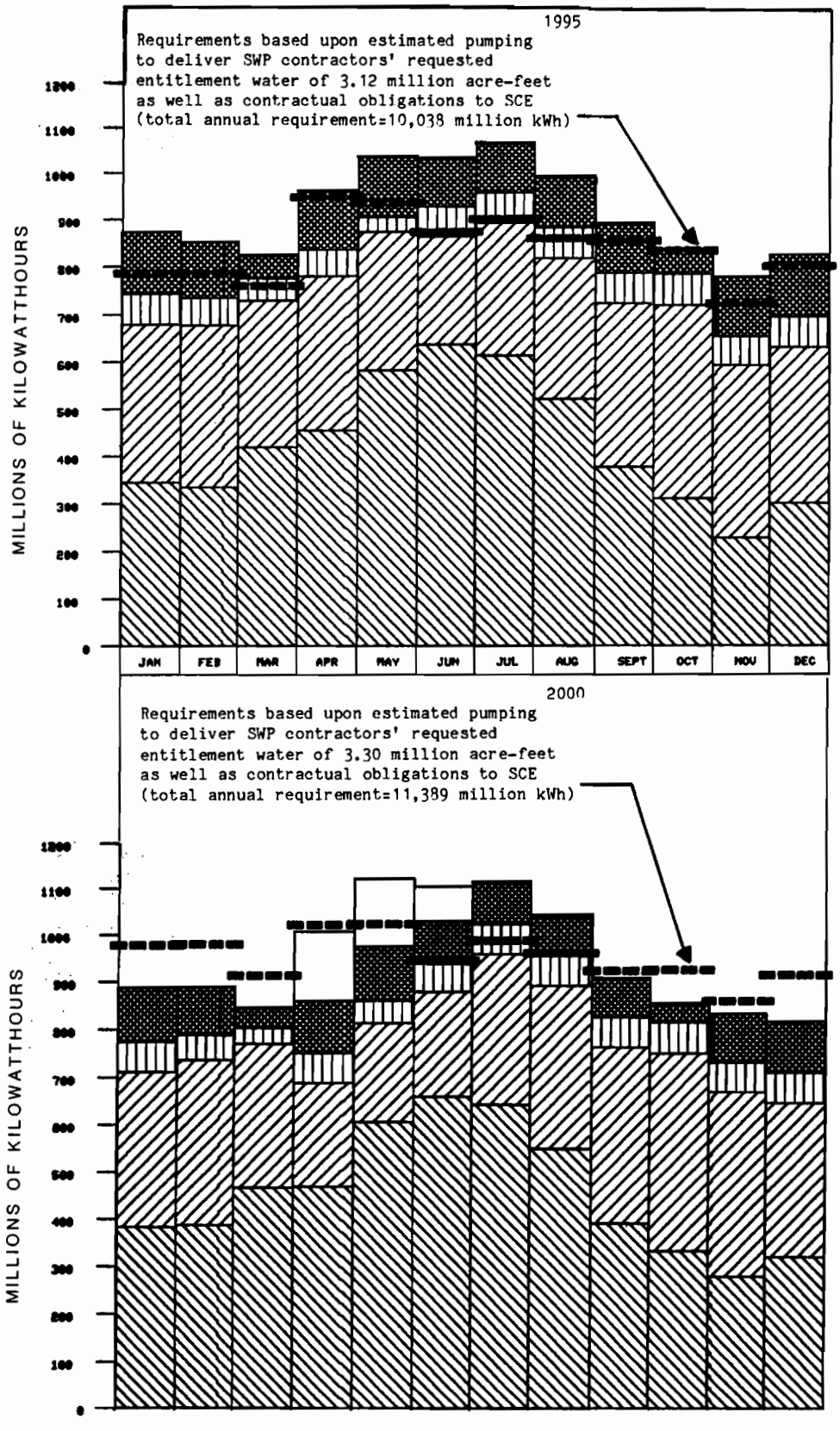
FIGURE 12: MONTHLY TOTAL SWP ENERGY



LEGEND

▨	HYDRO:	Hyatt-Thermalito, Aqueduct Recovery Plants, Pine Flat, MWDSC Hydro, Thermalito Diversion Dam (Beginning 1987)
▨	SCE EXCHANGE:	Energy from Southern California Edison Co. pursuant to 1979 Power Contract and 1981 Capacity Exchange Agreement
▥	GEOTHERMAL:	Bottle Rock, South Geysers (Beginning 1989)
▩	COAL:	Reid Gardner Unit No. 4

REQUIREMENTS AND RESOURCES

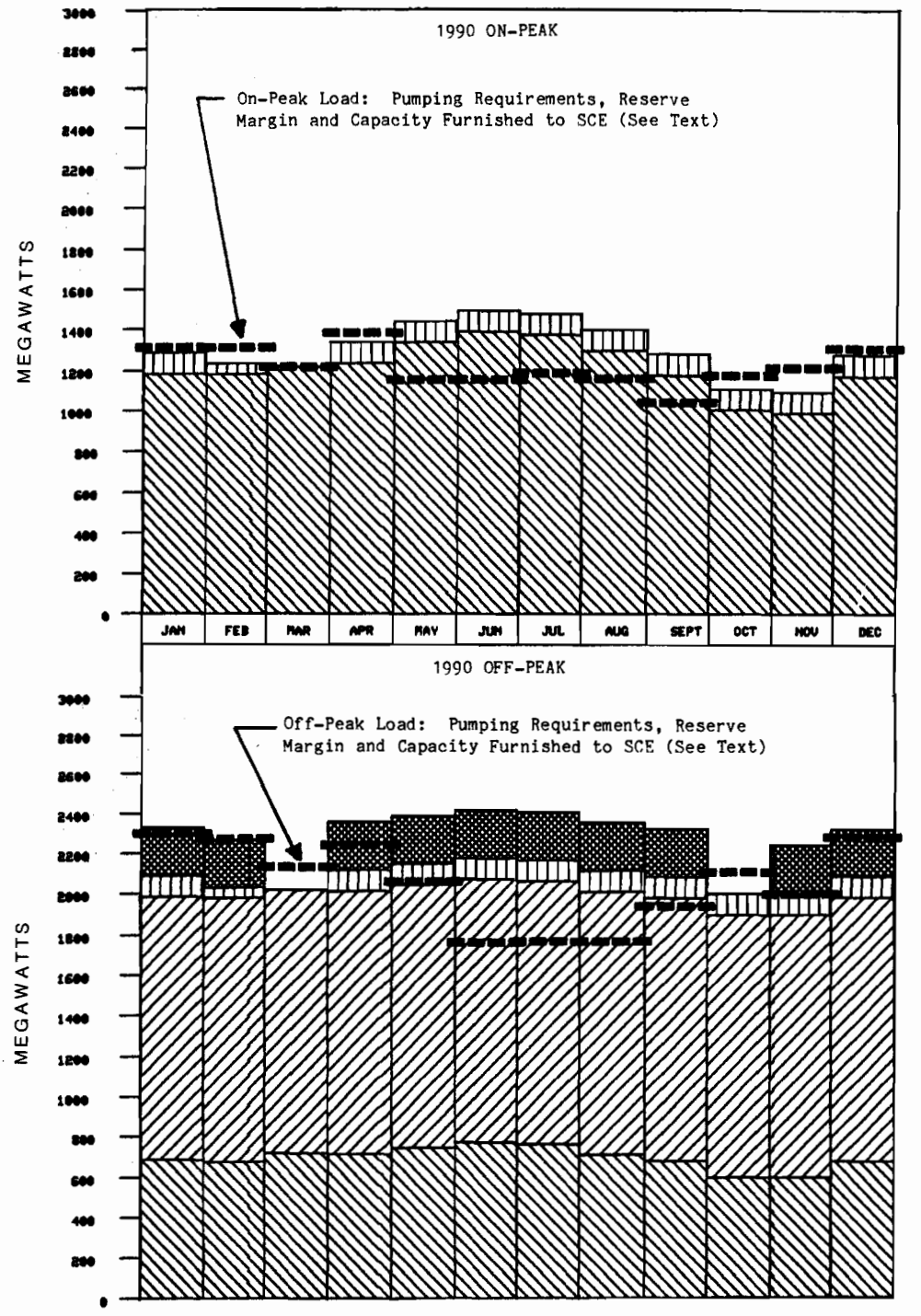


LEGEND

☐	PURCHASES:	Pacific Northwest and TERA Power Corporation (Wind)
▨	MISCELLANEOUS:	Snort-term energy purchases and exchanges with various utilities (Applicable in 1986 only)

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

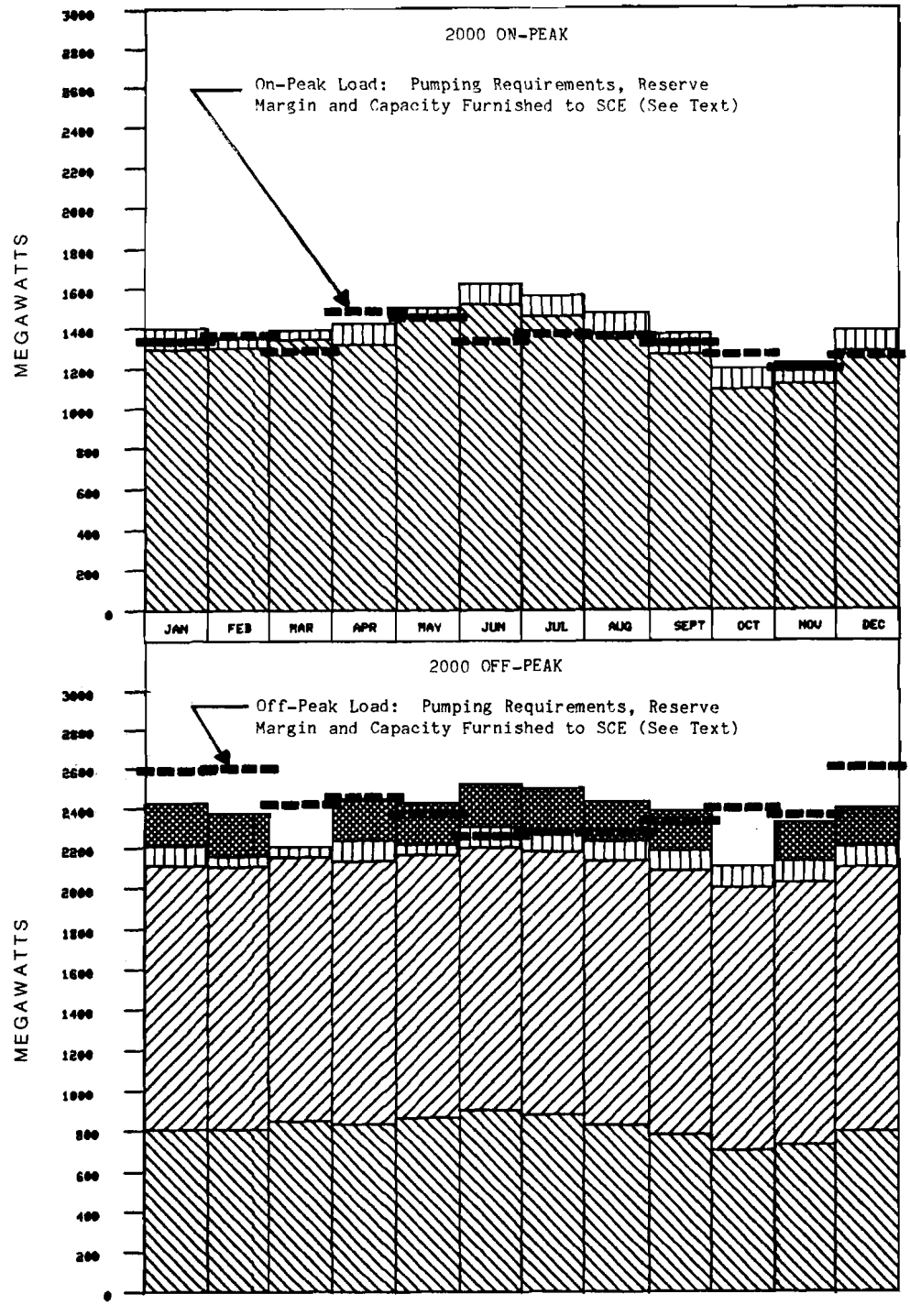
FIGURE 13: TOTAL MONTHLY ON-PEAK AND



LEGEND

▨	HYDRO:	Hyatt-Thermalito, Aqueduct Recovery Plants, Pine Flat, MWDSC Hydro, Thermalito Diversion Dam (Beginning 1987)
▨	SCE EXCHANGE:	Capacity provided by Southern California Edison Co. under 1979 Power Contract and 1981 Capacity Exchange Agreement
▨	GEOTHERMAL:	Bottle Rock, South Geysers (Beginning 1989)

OFF-PEAK SWP CAPACITY LOADS AND RESOURCES



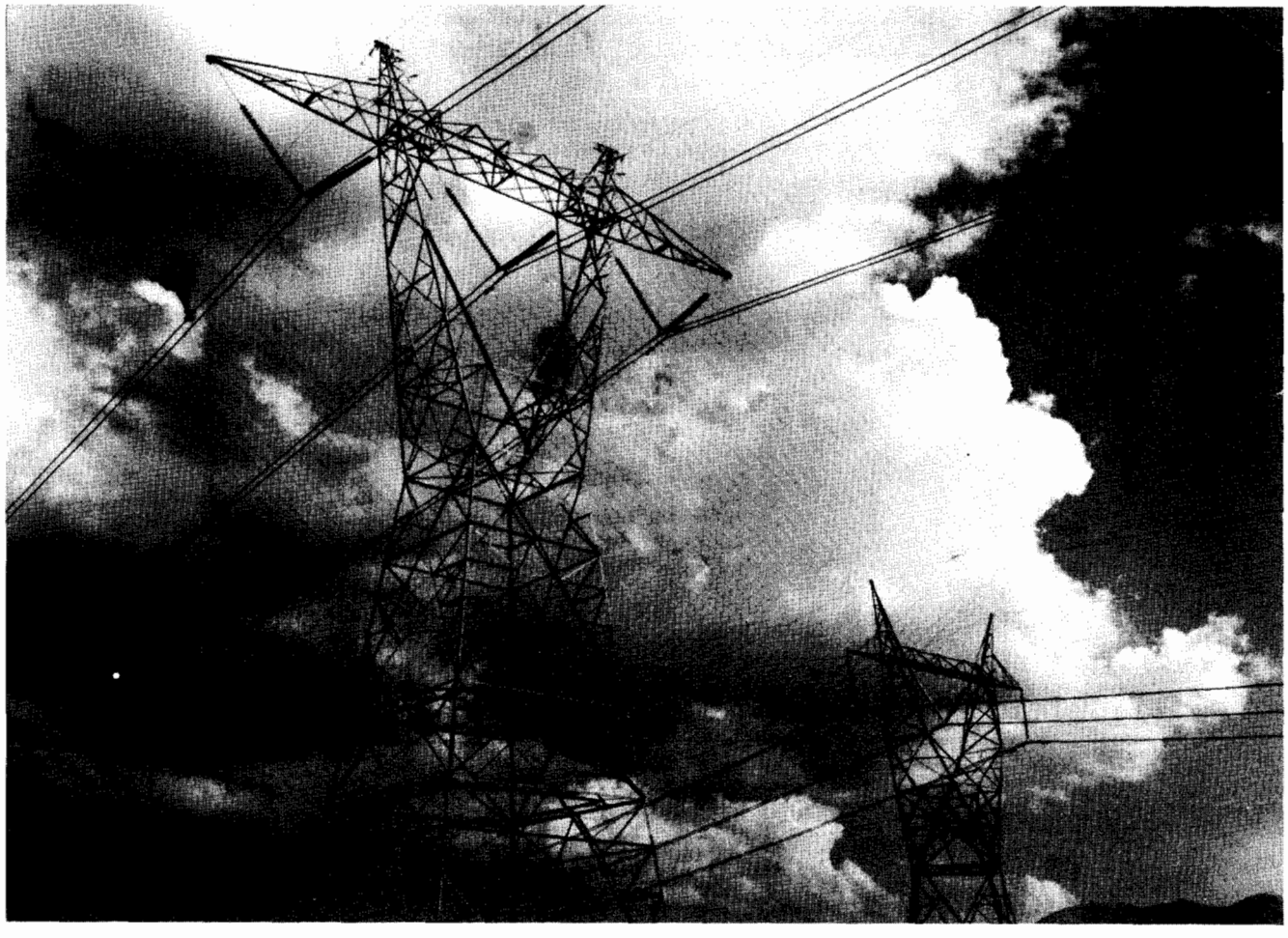
LEGEND

COAL: Reid Gardner Unit No. 4

NOTES:
1. The 350 MW 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. Projected loads and resources were balanced on an annual basis. Apparent monthly capacity deficits will be met by load management and/or energy exchanges with utilities.
3. Placement of resources in figure does not indicate a priority of use or need.

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 Figure 11A; the obligations to SCE are included in the total SWP load, and the full capacity furnished by SCE is part of the resources.

The indicated on-peak capacity resources in Figure 13 do not include any on-peak capacity from Reid Gardner Unit No. 4 because the participation agreement allows NPC to interrupt SWP generation at any time--with certain limitations. Nevertheless, during on-peak periods, there is likely to be power available from Reid Gardner Unit No. 4 for SWP use, but some interruptions must be anticipated. The same contractual arrangement exists for interruption of off-peak generation from Reid Gardner Unit No. 4. However, off-peak capacity for Reid Gardner Unit No. 4 is shown in Figure 13 because it is unlikely that NPC will use significant off-peak capacity, due to minimum service area load concerns and high contractual penalty costs. The participation agreement with NPC requires advance notice for use of capacity, which will give DWR adequate time to adjust loads and other resources.



The "500 kV-Line" cuts an imposing figure across the California skyline. DWR has a transmission service contract on this line, which nearly spans the length of the State.

Power Costs

On April 1, 1983, DWR began operation as a bulk power agency. This change resulted from 1977 decisions to cancel both the 1966 Suppliers Contract and the 1967 Power Sale Contract, under which the SWP had operated. DWR subsequently elected to secure the power resources necessary to operate the SWP independently. The numerous power contracts outlined in Table 17 and the SWP power resources are now able to meet SWP power needs at a relatively economical cost.

Table 18 is a detailed summary of the most recent projections of SWP energy resources and their costs. The top section of the table shows the estimated present and future energy supply from each resource at intervals from 1986 through 2000. The future energy supplies are based upon median water supply conditions. As in Figure 11, the SWP pumping energy requirements do not include contractual obligations to SCE and the energy resources include the net energy gained by the SWP under the exchange arrangements with SCE. The pumping energy requirements include energy and the associated transmission losses for delivery of entitlement water, recreation water, reservoir and aqueduct losses, and additions to reservoir storage south of the Delta. The excess of projected 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 (at 6 percent per year) and appropriate allowances for escalation of fuel costs. To develop the unit energy costs shown in Table 18, the comparable unit costs from Bulletin 132-85 were revised to reflect the most recent cost and financing information.

Most of the differences between the Bulletin 132-86 and Bulletin 132-85 resource costs reflect updated estimates for Project financing, fuel, and operation and maintenance costs. The method of determining the unit costs for Alamo and Thermalito Diversion Dam power plants has been revised for this bulletin. This revised method is a more equitable way of determining the power value to be used in calculating the net SWP power charge.

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 in 1990 and 1995 were estimated by escalating the projected 1986 value of 20 mills per kWh at 6 percent; the 1986 unit value was determined as explained in the accompanying footnote. 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 pumping energy requirements.

The effective unit costs shown in Table 18 represent the average costs for energy used to operate the SWP. This does not, however, represent actual energy cost in water contractor bills because of allocation adjustments for costs of Off-Aqueduct power facilities and credits for generation at SWP energy recovery plants.

TABLE 18: PROJECTED ENERGY RESOURCES AND COSTS

(Does not include energy deliveries to SCE pursuant to 1979 Power Contract and 1981 Capacity Exchange Agreement.)

	Calendar Year			
	1986	1990	1995	2000
ENERGY RESOURCES (millions of kWh)				
Hyatt-Thermalito	2,178	2,375	2,375	2,375
SWP Recovery Plants				
San Luis	105	155	125	145
Alamo	36	100	112	134
Devil Canyon	572	888	969	1,146
W. E. Warne	228	330	296	363
Castaic	385	539	482	585
San Luis Obispo	0	0	46	46
Pine Flat	783	387	387	387
MWDSC Hydro	167	167	260	246
Thermalito Diversion Dam	0	17	17	17
SCE Exchange(a	1,726	1,643	1,466	1,323
Reid Gardner Unit No. 4	1,157	1,442	1,278	1,074
Bottle Rock	253	340	361	340
South Geysers	0	316	340	361
TERA Power Corp. (Wind)	21	21	21	21
Pacific Northwest	477	0	0	376
Miscellaneous(b	92	0	0	0
Total Resources	8,180	8,720	8,535	8,939
SWP Pumping Energy Requirement(c	5,335	7,228	7,665	8,939
Surplus Energy for Sale	2,845	1,492	870	0
RESOURCES' COST (mills per kWh)(d				
Hyatt-Thermalito	11	11	12	13
SWP Recovery Plants				
San Luis	25	25	25	25
Alamo	25	25	25	25
Devil Canyon	25	25	25	25
W. E. Warne	25	25	25	25
Castaic	25	25	25	25
San Luis Obispo	-	-	25	25
Pine Flat	19	33	37	43
MWDSC Hydro	57	66	84	107
Thermalito Diversion Dam	-	54	54	54
SCE Exchange(a	0	0	0	0
Reid Gardner Unit No. 4	73	68	89	113
Bottle Rock	91	76	93	133
South Geysers	-	70	89	119
TERA Power Corp. (Wind)	85	85	68	68
Pacific Northwest	25	31	42	56
Miscellaneous(b	24	-	-	-
Composite Cost of Resources	26	29	35	41
Value of Potential Energy Sales	20(e	24	32	-
Net Cost of SWP Pumping Energy	30	30	35	41
Transmission Cost	6	3	3	3
Effective Unit Cost	36(f	33	38	44

a) Net energy gained from Southern California Edison Company under 1979 DWR-SCE Power Contract and 1981 Capacity Exchange Agreement.
b) Miscellaneous resources include short-term energy purchases and/or energy exchange arrangements with utilities.
c) 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.
d) Includes allowance for future cost escalation.
e) The value of April-December surplus energy sales is based upon 18 mills per kWh; January-March energy sales reflect actual values.
f) 1986 costs are estimated costs as of April 22, 1986.

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 summary is in Table 19; more detailed presentations of financial matters are shown in additional tables, figures, and line item descriptions throughout the chapter.

Capital costs and financing have been changed from those in Bulletin 132-85 to reflect changes in construction scheduling and cost estimates. Projected bond activities have also been revised to reflect these changes. Pending legislative action on a future water program, only that small portion of Tideland Oil revenues needed to fund annual drainage and desalting studies and activities is included as a funding source in 1986 and thereafter.

Through 1985, about $3.6 billion had been expended by DWR for SWP facilities, of which $3.3 billion had been disbursed for construction expenditures and $0.3 billion for other capital requirements.

The following major SWP facilities planned for completion by 1992 are included in the financial analysis:

- North Bay Aqueduct - Phase II;
- Suisun Marsh Facilities (first stage of final facilities);
- final four units at Banks Delta Pumping Plant;
- small hydroelectric and Off-Aqueduct power generation facilities sufficient to secure an economical and reliable power supply to meet SWP energy needs; and
- enlargement of the East Branch of the California Aqueduct.

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

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 1986 through 1995. The current analysis indicates that future capital requirements through 1995 for power and water facilities and the Davis-Grunsky Act Program, along with special requirements for revenue bond financing, will be $805 million.

The current SWP financial analysis in Table 19 is in two parts. Actual and projected capital expenditures and sources of financing are shown on the left-hand page. The right-hand page 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. The financial analysis 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.

Capital expenditures for the SWP also include requirements other than those for construction, such as disbursements

TABLE 19: SWP FINANCIAL

(IN 1,000 DOLLARS) PART I

LINE NO.	LINE ITEM	CALENDAR YEAR											TOTAL 1986-1995	TOTAL 1952-1995
		1952-1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995		
	CAPITAL REQUIREMENTS													
1.	Initial Project Facilities	2,202,316	0	0	0	0	0	0	0	0	0	0	0	2,202,316
2.	Phase II of the North Bay Aqueduct	25,787	27,001	36,657	2,202	96	0	0	0	0	0	0	65,956	91,743
3.	Delta & Suisun Marsh Facilities	80,116	6,088	13,750	7,879	3,229	2,446	99	52	0	0	0	33,543	113,659
4.	Final 4 Units at Banks Delta Pumping Plant	1,667	981	4,400	12,749	15,870	11,968	2,425	55	0	0	0	48,448	50,115
5.	San Luis Canal Enlargement	0	0	0	0	0	0	0	0	0	0	0	0	0
6.	Final 3 Units at A. D. Edmonston Pumping Plant	29,464	600	0	0	0	0	0	0	0	0	0	600	30,064
7.	Units on Coastal Branch and South of A. D. Edmonston	29,313	765	794	151	105	105	253	284	0	0	0	2,457	31,770
8.	Warne Powerplant and Peace Valley Pipeline	124,357	1,142	1,026	3,142	4,509	351	0	0	0	0	0	10,170	134,527
9.	Enlargement of the East Branch of the California Aqueduct	5,889	19,168	29,644	56,702	75,768	79,066	37,310	10,677	0	0	0	308,335	314,224
10.	Additional Conservation Facilities	35,537	4,590	4,771	4,138	3,103	2,602	1,637	1,717	1,799	1,886	1,977	28,220	63,757
11.	Small Hydroelectric Power Generating Facilities	63,724	7,172	3,248	58	0	0	0	0	0	0	0	10,478	74,202
12.	Power Generation and Transmission Facilities	387,675	16,936	22,746	29,338	16,571	2,068	0	0	0	0	0	87,659	475,334
13.	San Joaquin Drainage Facilities	21,268	3,600	2,580	886	576	576	576	576	576	576	576	11,098	32,366
14.	Other Costs	164,050	21,112	10,694	6,483	1,488	1,161	643	493	509	534	561	43,678	207,728
15.	TOTAL PROJECT CONSTRUCTION EXPENDITURES	3,171,163	109,155	130,310	123,728	121,315	100,343	42,943	13,854	2,884	2,996	3,114	650,642	3,821,805
16.	Davis-Grunsky Act Program Costs	115,294	4,081	3,585	3,585	3,455	0	0	0	0	0	0	14,706	130,000
17.	Special Capital Requirements Under Revenue Bond Financing	284,569	18,359	103,637	0	17,500	0	0	0	0	0	0	139,496	424,065
18.	TOTAL CAPITAL REQUIREMENTS	3,571,026	131,595	237,532	127,313	142,270	100,343	42,943	13,854	2,884	2,996	3,114	804,844	4,375,870
19.	Power Facilities Capital Requirements	1,171,024	26,795	45,381	29,396	16,571	2,068	0	0	0	0	0	120,211	1,291,235
20.	Water Facilities Capital Requirements	2,400,002	104,800	192,151	97,917	125,699	98,275	42,943	13,854	2,884	2,996	3,114	684,633	3,084,635
	FINANCING OF CAPITAL REQUIREMENTS													
	POWER REVENUE BOND PROCEEDS													
21.	Power Bonds through Reid Gardner Series C	844,702	0	0	0	0	0	0	0	0	0	0	0	844,702
22.	Small Hydro-So. Geysers Series D	69,284	3,254	2,408	54	0	0	0	0	0	0	0	5,716	75,000
23.	Bottle Rock Series E	122,985	2,015	0	0	0	0	0	0	0	0	0	2,015	125,000
24.	Alamo-So. Geysers Series F	69,878	5,122	0	0	0	0	0	0	0	0	0	5,122	75,000
25.	Power Revenue Bond Series H	0	10,142	2,200	4,700	4,800	0	0	0	0	0	0	21,842	21,842
26.	Assumed Future Power Revenue Bonds	0	0	28,673	24,638	6,689	0	0	0	0	0	0	60,000	60,000
27.	SUBTOTAL POWER REVENUE BONDS	1,106,849	20,533	33,281	29,392	11,489	0	0	0	0	0	0	94,695	1,201,544
	OTHER CAPITAL FINANCING													
28.	Initial Project Facilities Bond Proceeds	1,452,269	0	0	0	0	0	0	0	0	0	0	0	1,452,269
29.	Application of Proceeds from Sale of Water Bonds, Davis-Grunsky Act Program	115,294	4,081	3,585	3,585	3,455	0	0	0	0	0	0	14,706	130,000
30.	Application of California Water Fund Monies (Tideland Oil Revenues)	490,408	9,300	2,580	886	576	576	576	576	576	576	576	16,798	507,206
31.	Application of Miscellaneous Receipts to Construction	406,206	57,156	35,011	3,082	9,344	2,068	0	0	0	0	0	106,661	512,867
32.	Revenue Transfers Applied	0	0	0	0	33,036	28,629	8,280	3,690	2,308	2,420	2,538	80,901	80,901
33.	Application of Proceeds from Sale of Supplemental Water System Revenue Bonds	0	0	136,228	38,772	0	0	0	0	0	0	0	175,000	175,000
33A.	East Branch Enlargement Bonds	0	40,525	26,847	51,596	84,370	69,070	34,087	9,588	0	0	0	316,083	316,083
34.	SUBTOTAL OTHER CAPITAL FINANCING	2,464,177	111,062	204,251	97,921	130,781	100,343	42,943	13,854	2,884	2,996	3,114	710,149	3,174,326
35.	TOTAL FINANCING OF CAPITAL REQUIREMENTS	3,571,026	131,595	237,532	127,313	142,270	100,343	42,943	13,854	2,884	2,996	3,114	804,844	4,375,870

ANALYSIS, JUNE 30, 1986

(IN 1,000 DOLLARS) PART II

LINE NO.	Line Item	CALENDAR YEAR 1952-1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	TOTAL 1986-1995	TOTAL 1952-1995
	PROJECT REVENUES													
36.	Miscellaneous Receipts	630,828	17,017	8,957	7,677	7,125	0	0	0	0	0	0	40,776	671,604
	WATER CONTRACTOR PAYMENTS													
37.	Transportation Capital	1,272,959	68,894	89,927	83,552	89,665	91,107	91,945	92,191	92,267	92,267	92,267	884,082	2,157,041
38.	Transportation Minimum	729,562	162,999	218,750	223,414	236,125	240,794	243,042	240,840	239,537	238,505	238,548	2,282,554	3,012,116
39.	Transportation Variable	393,558	101,829	83,396	55,497	55,219	56,603	55,392	56,178	60,286	59,173	63,800	647,373	1,040,931
40.	Delta Water Charge	344,585	58,129	51,845	54,634	58,826	61,314	62,247	62,532	62,755	62,970	63,216	598,468	943,053
41.	Water Revenue Bond Payments	0	0	25,401	27,206	41,611	42,421	42,413	42,402	42,397	42,387	42,385	348,623	348,623
42.	SUBTOTAL WATER CONTRACTOR PAYMENTS UNDER LONG-TERM WATER SUPPLY CONTRACTS	2,740,664	391,851	469,319	444,303	481,446	492,239	495,039	494,143	497,242	495,302	500,216	4,761,100	7,501,764
43.	Off-Aqueduct Cover Adjustment	0	(9,588)	(13,447)	(13,602)	(13,724)	(15,234)	(15,241)	(15,242)	(15,254)	(15,253)	(15,251)	(141,836)	(141,836)
	OTHER REVENUES													
44.	Federal Payments for Project Operating Costs	43,352	5,621	7,519	7,326	7,373	6,341	7,391	7,939	8,035	7,591	9,946	75,082	118,434
45.	Appropriations for Operating Costs Allocated to Recreation	16,657	0	0	0	0	0	0	0	0	0	0	0	16,657
46.	Local Agency Payments Under Davis-Grunsky Loan Repayment Contracts	11,839	1,962	1,984	1,960	2,012	1,977	1,970	1,970	1,970	1,970	1,970	19,745	31,584
47.	Miscellaneous Revenues	468,750	28,951	39,737	10,000	24,400	10,000	10,000	10,000	10,000	10,000	10,000	163,088	631,838
48.	Payments Under Oroville-Thermalito Power Sale Contract	249,279	0	0	0	0	0	0	0	0	0	0	0	249,279
49.	SUBTOTAL OTHER REVENUES	789,877	36,534	49,240	19,286	33,785	18,318	19,361	19,909	20,005	19,561	21,916	257,915	1,047,792
50.	TOTAL OPERATING REVENUES	3,530,541	418,797	505,112	449,987	501,507	495,323	499,159	498,810	501,993	499,610	506,881	4,877,179	8,407,720
51.	TOTAL OPERATING REVENUES AND MISCELLANEOUS RECEIPTS	4,161,369	435,814	514,069	457,664	508,632	495,323	499,159	498,810	501,993	499,610	506,881	4,917,955	9,079,324
	PROJECT EXPENSES													
52.	Project Operation, Maintenance, and Power Costs	1,243,600	214,798	253,743	212,364	214,132	222,614	225,289	224,432	226,349	222,497	228,213	2,244,431	3,488,031
53.	Deposits to Replacement Reserves	76,871	7,798	11,273	10,713	10,356	9,089	10,219	10,754	10,958	11,066	13,054	105,280	182,151
54.	Deposits to Special Reserves Under Revenue Bond Financing	310,003	(10,118)	15,314	5,088	9,950	2,030	4,097	4,111	4,099	4,106	4,111	42,788	352,791
	PAYMENTS OF DEBT SERVICE													
55.	Principal Repayments on Bonds sold Through June 30, 1986	267,486	33,265	36,585	39,335	41,565	43,710	45,615	47,610	50,380	53,145	55,555	446,765	714,251
56.	Interest on Bonds Sold Through June 30, 1986	1,757,049	133,120	139,208	137,202	135,074	133,674	130,458	127,953	125,899	122,552	119,645	1,304,785	3,061,834
57.	Future Power Bond Principal Repayments	0	0	0	0	0	580	630	690	750	815	890	4,355	4,355
58.	Future Power Bond Interest Payments	0	0	900	5,400	5,400	5,352	5,300	5,243	5,181	5,113	504	38,393	38,393
59.	Future Water Bond Principal Repayments	0	0	0	1,805	1,930	2,955	3,180	3,425	3,700	3,995	4,325	25,315	25,315
60.	Future Water Bond Interest Payments	0	4,021	25,401	25,401	39,681	39,466	39,233	38,977	38,697	38,392	38,060	327,329	327,329
61.	TOTAL PRINCIPAL	267,486	33,265	36,585	41,950	44,380	48,210	50,475	52,870	56,080	59,315	62,255	485,385	752,871
62.	TOTAL INTEREST	1,757,049	137,141	181,259	183,753	195,832	194,089	190,502	187,589	185,090	181,257	173,287	1,809,799	3,566,848
63.	SUBTOTAL DEBT SERVICE	2,024,535	170,406	202,094	209,143	223,650	225,737	224,416	223,898	224,607	224,012	218,979	2,146,942	4,171,477
64.	California Water Fund Appropriation to Non-SWP purposes	70,000	0	0	0	0	0	0	0	0	0	0	0	70,000
65.	TOTAL OPERATING EXPENSES AND DEBT SERVICE	3,725,009	382,884	482,424	437,308	458,088	459,470	464,021	463,195	466,013	461,681	464,357	4,539,441	8,264,450
66.	Deposits to Operating Reserves Added	30,154	(4,226)	(3,366)	17,274	8,164	0	0	0	0	0	0	17,846	48,000
67.	California Water Fund Repayment Required for Current Construction	0	0	0	0	33,036	28,629	8,280	3,690	2,308	2,420	2,538	80,901	80,901
68.	California Water Fund Repayment Available for Future Construction	0	0	0	0	0	5,156	26,858	31,925	33,672	35,509	39,986	173,106	173,106
69.	Miscellaneous Receipts Used for Construction	406,206	57,156	35,011	3,082	9,344	2,068	0	0	0	0	0	106,661	512,867
70.	TOTAL PROJECT EXPENSES	4,161,369	435,814	514,069	457,664	508,632	495,323	499,159	498,810	501,993	499,610	506,881	4,917,955	9,079,324

under the Davis-Grunsky Act Program (Line 16), and special capital requirements under revenue bond financing (Line 17).

The financial analysis assumes that, pursuant to Sections 12937 and 12938 of the Water Code, available contractor revenues (after payment of operating costs and debt service) will be transferred to the California Water Fund. This analysis indicates that all funds available at least through 1988 will be required to maintain a prudent level of operating reserves. After 1988, only a portion of the funds available will be needed to maintain the reserve.

Future conditions will 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;
- completion of Phase II of the Coastal Branch to serve San Luis Obispo County FC&WCD and Santa Barbara County FC&WCD;
- capital costs associated with the Kern Water Bank;
- capital costs associated with construction of 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;
- 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;
- the outcome of certain lawsuits now pending before the courts (see Chapter III); and

Capital Requirements

Table 20 shows actual and projected SWP construction expenditures, together with a preliminary allocation of such expenditures among SWP purposes. Estimates of future capital expenditures include allowances for escalation of construction costs at 3 percent per year for 1986 and 1987 and at 6 percent per year thereafter; land acquisition costs and State salaries are assumed to escalate at 6 percent and 5 percent per year, respectively. A generalized construction schedule for current and future contracts is shown in Figure 14.

The following sections describe DWR's current assumptions concerning the

TABLE 20: SWP CAPITAL EXPENDITURES

(in thousands of dollars)

Facilities and Construction Divisions	Expenditures Incurred Through 1985	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	15,833	263	16,096	1,166	0	14,930	0
Oroville Division	541,195	3,698	544,893	456,192	69,994	18,707	0
North Bay Aqueduct	28,706	65,956	94,662	94,662	0	0	0
Delta Facilities	104,248	33,543	137,791	119,288	0	18,503	0
South Bay Aqueduct	72,779	1,702	74,481	53,086	7,407	13,964	24
California Aqueduct							
North San Joaquin Division	173,878	53,645	227,523	219,169	0	8,354	0
San Luis Division	201,673	7,325	208,998	198,448	0	10,340	210
South San Joaquin Division	268,387	12,286	280,673	264,774	0	15,899	0
Tehachapi Division	305,307	7,112	312,419	294,693	0	17,726	0
Mojave Division(c	229,186	307,836	537,022	521,075	0	15,947	0
Santa Ana Division	192,636	352	192,988	176,497	0	16,491	0
West Branch	506,514	13,122	519,636	486,576	0	32,543	517
Coastal Branch	16,472	2,456	18,928	18,824	0	0	104
Subtotal, California Aqueduct	1,894,053	404,134	2,298,187	2,180,056	0	117,300	831
Small Hydroelectric Power Generating Facilities	63,724	10,478	74,202	70,339	0	3,863	0
Off-Aqueduct Power Generating Facilities	387,675	87,659	475,334	475,334	0	0	0
San Joaquin Drainage Facilities	21,268	11,098	32,366	0	0	0	32,366
Planning and Preoperations(d	35,537	28,220	63,757	63,757	0	0	0
Unassigned	6,145	3,891	10,036	0	0	0	10,036
SUBTOTAL, PROJECT CONSTRUCTION EXPENDITURES	3,171,163	650,642	3,821,805	3,513,880	77,401	187,267	43,257
OTHER CAPITAL REQUIREMENTS							
Davis-Grunsky Act Program	115,294	14,706	130,000	0	0	0	130,000
TOTAL CAPITAL EXPENDITURES	3,286,457	665,348	3,951,805	3,513,880	77,401	187,267	173,257

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 cost assigned to the Davis-Grunsky Act Program.
c) Includes costs for improvements and enlargement of East Branch of the California Aqueduct.
d) Includes planning and preoperation expenses allocated to conservation facilities.

costs of each facility of the future construction program through 1995, as shown in Table 19. Decisions to commence construction on facilities not yet underway will be made only after an examination of alternatives and on completion of final EIRs and other review processes.

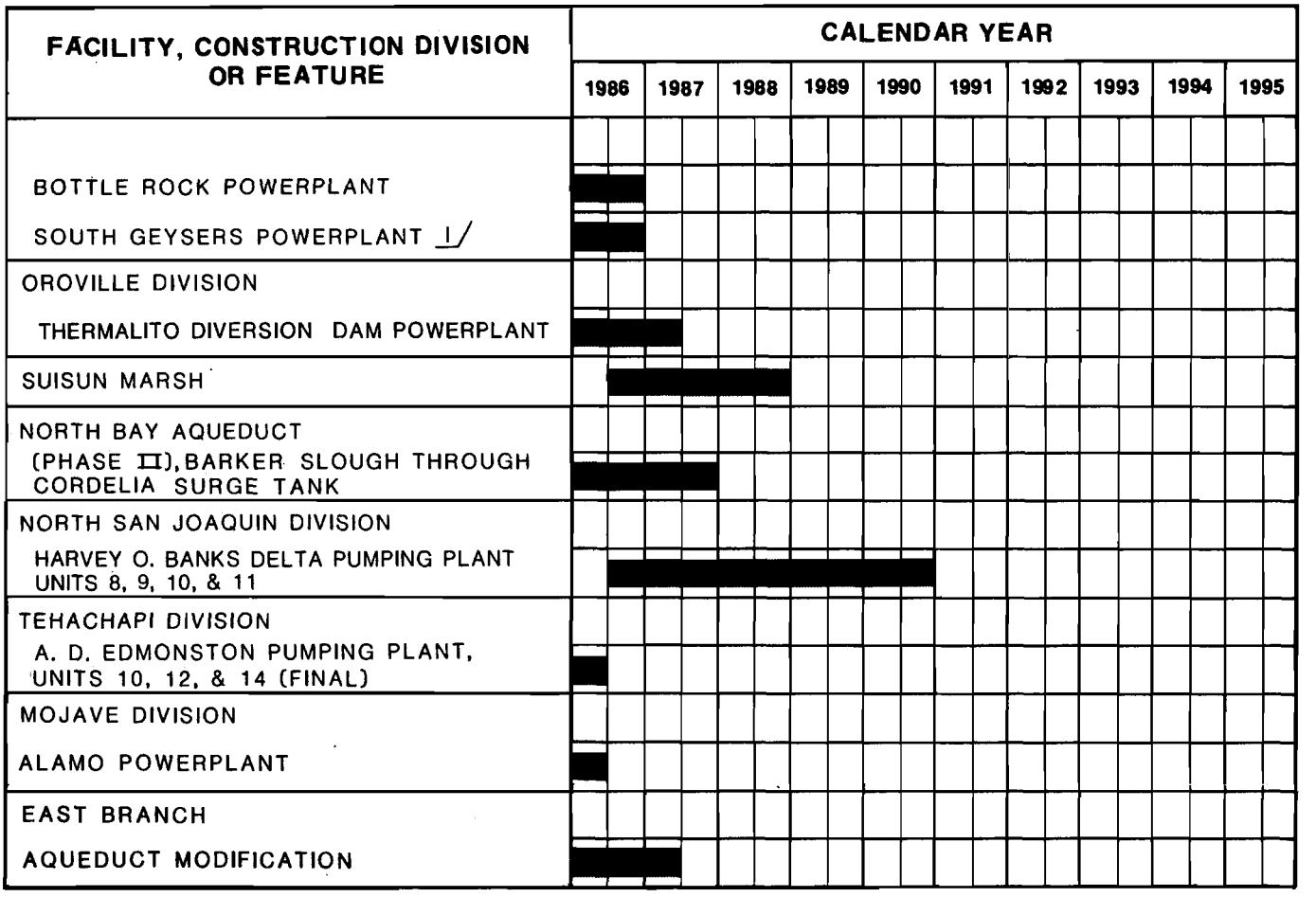
Line 1: Initial Project Facilities

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: Phase II of the North Bay Aqueduct

Phase II of the North Bay Aqueduct, which will connect with existing Phase I facilities, will consist of pipelines, pumping plants, and a small reservoir necessary to divert water

FIGURE 14: GENERALIZED CONSTRUCTION SCHEDULE



1/ Construction suspended. Completion date pending procurement of a firm steam supply.

from the western Delta to Napa and Solano Counties for urban use.

Included in the future costs are costs for increased capacity for the City of Vallejo and to provide excess peaking capacity to meet possible future peak summer demands. These additional costs are to be funded by advance payments from the Solano County Flood Control and Water Conservation District. These advance payments are included in Line 36.

Line 3: Delta and Suisun Marsh Facilities

The history column (1952-1985) of Line 3 includes costs for general Delta facilities and planning 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 1985.

The columns for 1986-1995 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.

Line 4: Final Four Units at Banks Delta Pumping Plant

The final four 1,067-cfs units are scheduled to be operational in 1991. The final EIR has been completed and

distributed to the public and interested parties.

Line 5: San Luis Canal Enlargement

Based upon a 1984 analysis of the need for the San Luis Canal enlargement, the enlargement costs have been deferred until there is a demonstrated need for the enlargement. (See Bulletin 132-85, page 89.)

Line 6: Final Three Units at A. D. Edmonston Pumping Plant

These three 315-cfs units became operational in December 1984. Final testing took place in April 1986.

Line 7: Units on Coastal Branch and South of Edmonston

This line shows expenditures for completion of staged facilities on the California Aqueduct south of Edmonston Pumping Plant, purchase of pumping units at Las Perillas and Badger Hill pumping plants, and the planning cost Coastal Branch, Phase II. The Berrenda Mesa Water District installed three pumps at each of the Coastal Branch pumping plants at its own expense in 1971; DWR has purchased two pumps at each plant at depreciated value. The final units will be purchased when Phase II of the Coastal Branch is constructed. No costs for the final units or for constructing Phase II of the Coastal Branch are included in Line 7 because of the uncertainty regarding the timing of construction.

Construction of the second stage of the Castaic Dam Outlet Works, formerly scheduled to begin in 1987, has been postponed until additional capacity on the West Branch is necessary.

Line 8: Warne Powerplant and Peace Valley Pipeline

This line shows capital expenditures for construction of Quail Lake, the Lower Quail Canal, and the first stages of the Peace Valley Pipeline and William E. Warne Powerplant. This line includes the cost of repairs to the Quail Canal at the site of the January 1984 break and future costs of Gorman Creek channel modifications. The second of two 37.5-MW generating units at Warne Powerplant went into operation in February 1983 and construction of the second unit was completed in 1984. Warne Powerplant is designed to allow future installation of two additional 37.5-MW generating units, but that expansion is not scheduled.

Line 9: Enlargement of the East Branch of the California Aqueduct

The costs shown in Line 9 are for modification and improvements to existing capacity on the East Branch as well as capacity enlargements (see "East Branch Enlargement," Chapter III). The costs through 1995 total $314 million, which are assumed to be financed with proceeds from Water System Revenue Bonds (see Line 33A). Approximately 88 percent of the costs are related to the enlargement and will be repaid by the participating contractors.

Line 10: Additional Conservation Facilities

The costs shown in Line 10 are for planning of additional conservation facilities. No costs are shown in the financial analysis for construction of additional conservation facilities.

Line 11: Small Hydroelectric Power Generating Facilities

Future expenditures included in Line 11 are for completion of Alamo and Thermalito Diversion Dam power plants. Total estimated capital costs are $49.4 million for Alamo Powerplant and $12.5 million for Thermalito Diversion Dam Powerplant.

Line 12: Power Generation and Transmission Facilities

Estimated capital costs for facilities included in Line 12 are:

	(millions)
Powerplants	
Reid Gardner, Unit No. 4	$252.7
Bottle Rock	$105.9
South Geysers	$ 97.8
Transmission Lines	
Geysers-Lakeville	$ 6.9
Midway-Wheeler Ridge	$ 10.9

The cost for Reid Gardner Unit No. 4 includes an estimated $12.5 million for replacement of the existing cooling tower, development of an alternative water supply, and other capital improvements.

The cost for the South Geysers Powerplant assumes completion in 1989. Actual completion date and costs will depend upon the outcome of steam supply studies and negotiations.

Line 13: 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) closing the desalting plant at the Los Banos Demonstration Desalting Facility and writing the final report, and (3) continued operation of the solar pond system. Desalting Facility operation and maintenance costs are shown through mid-1988. These costs are to be financed by California Water Fund appropriations. Costs beyond 1988 in Line 13 are for the waste water monitoring program and continued operation of the solar pond system. No costs shown in this line are charged to SWP water contractors.

Line 14: 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 14 includes expenditures that cover completion of monitoring and control systems and other completion activities for SWP facilities other than the California Aqueduct. 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 15: Total Project Construction Expenditures

This line is the total of Lines 1 through 14.

Line 16: 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, 1985, DWR had disbursed $115.3 million (including $8.1 million for administration) in grants and loans for 114 local agencies throughout the State. DWR estimates that funds presently authorized for the program will be disbursed prior to 1990.

Line 17: 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 power facility and water system revenue bonds will pay bond interest for one to two years following the bond sale, operation and maintenance costs for the

first year of operation, and financing costs. For 1987, this line also includes $65 million of Water System Revenue Bond proceeds to reimburse other SWP funds used for construction expenditures prior to the bond sale. Application of proceeds to these special requirements for actual and assumed revenue bond sales is shown in Table 21.

Line 18: Total Capital Requrements

This line is the total of Lines 15, 16, and 17.

Line 19: Power Facilities Capital Requirements

This line is the total of capital

TABLE 21: APPLICATION OF REVENUE BOND PROCEEDS

(in millions of dollars)

Bond Series	Application of Revenue Bond Proceeds						
		Other Capital Requirements					
	Construction Expenditures	Reimbursement Of General Fund	Bond Interest Thru One Year Following Completion of Construction	Operating Costs For One Year Following Completion Of Construction	Bond Discount And Financing Costs	Subtotal	Total Principal Amount Of Bonds
Oroville (Actual)	218.0	2.6	19.9	1.5	3.0	27.0	245.0
Devil Canyon-Castaic (Actual)	126.4	0.0	10.0	0.7	2.1	12.8	139.2
Pyramid Series A (Actual)	74.0	0.0	19.2	1.0	1.6	21.8	95.8
Reid Gardner Series B (Actual)	146.1	0.0	41.9	0.0	12.0	53.9	200.0
Reid Gardner Series C (Actual)	91.1	0.0	17.9	7.9	8.1	33.9	125.0
Small Hydro-South Geysers Series D (Actual)	49.6	0.0	19.9	0.0	5.5	25.4	75.0
Bottle Rock Series E (Actual)	96.9	0.0	22.0	3.7	2.4	28.1	125.0
Alamo-South Geysers Series F (Actual)	59.1	0.0	14.2	0.0	1.7	15.9	75.0
Reid Gardner, Alamo, Pyramid Series H (Actual)	22.2	0.0	0.0	0.0	184.5 (a	184.5	206.7
East Branch Enlargement Series A (Actual)	117.3	0.0	13.7 (b	0.0	2.0	15.7	132.0
East Branch Enlargement (Assumed)	140.5	0.0	16.5 (c	0.0	3.0	19.5	160.0
Supplemental Power Bonds (Assumed)	40.6	0.0	10.8 (d	7.4	1.2	19.4	60.0
Supplemental Water Bonds (Assumed)	155.7	0.0	15.8 (c	0.0	3.5	19.3	175.0

a) Total bond discount was $2.7 million. Remaining amount was used to refund portions of Series C and D bonds.
b) Interest capitalized 1-1/2 years.
c) Interest capitalized 1 year.
d) Interest capitalized 2 years.

requirements for power facilities contained in Lines 1-14, and that part of Line 17 associated with power revenue bonds.

Line 20: Water Facilities Capital Requirements

This line is the total of capital requirements for water facilities contained in Lines 1-14, and that part of Line 17 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), aproved 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).

- Miscellaneous Receipts, 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.

To date, general obligation bonds have financed the largest segment of the SWP construction. 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 millon 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 facilites and for the Davis-Grunsky Act program.

Monies deposited in the California Water Fund are appropriated for purposes of the Burns-Porter Act. Such deposits are derived from a portion of the State's Tideland Oil 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, 1986, DWR has sold $1.6 billion of revenue bonds. This includes $206.7 million of Power Facilities Revenue Bonds, Series H, sold June 10, 1986, at a true interest cost of 7.9 percent. The Series H bonds will (1) refund a portion of the Reid Gardner Project Series C Revenue Bonds issued in November 1982, (2) refund a portion of the South Geysers Project and the Small Hydro Project Series D Revenue Bonds issued in November 1982, and (3) provide additional monies needed to pay a portion of the cost of Pyramid, Alamo, and Reid Gardner projects. The refunding portion will result in a savings in interest cost over the life of the bonds of about $29.7 million.

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 the payment of (1) bond interest during the construction period, and for one year following completion of construction, and (2) operation and maintenance costs for one year after completion of construction.

Miscellaneous receipts 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, miscellaneous receipts 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 21 through 35.

Line 21: Power Bonds through Reid Gardner Series C

This line shows the proceeds from power revenue bonds for the Oroville, Devil Canyon, Castaic, Pyramid and the Reid Gardner Projects.

All proceeds from the sale of Oroville Power Revenue Bonds in April 1968, (Series A) and in April 1969, (Series B) had been applied as of December 31, 1973.

Construction funds provided by the sale of Devil Canyon-Castaic Power Revenue Bonds, in August 1972, included (1) $98.9 million that reimbursed other SWP funds used to finance construction of the Devil Canyon and Castaic facilities prior to the delivery of the bonds, and (2) $27.5 million reserved to complete construction of the facilities. Of this amount, $2.5 million was not needed for construction and was transferred to the trustee during 1981 as required by the bond resolution.

Pyramid Hydroelectric Project power revenue bonds were sold in October 1979, for construction of the portion of the W. E. Warne Powerplant and related facilities allocated to power. The construction proceeds provided (1) $31.6 million that reimbursed other SWP funds used to finance construction of these facilities prior to delivery of the bonds, and (2) $42.4 million reserved to complete construction. The remaining proceeds are used for other requirements as shown in Line 17.

For the Reid Gardner Project, DWR sold Series B Power Facilities Revenue Bonds for $200 million on July 7, 1982. Approximately $143 million was set aside from the proceeds to repay the $150 million bond anticipation notes sold on June 30, 1981. About $22 million provided reimbursement of other SWP funds used to finance construction of these facilities prior to delivery of the bonds, and the remaining proceeds were used for other requirements as shown in Line 17. On March 13, 1985, DWR sold $239.5 million of Power Facilities Revenue Bonds, Series G, at a true interest cost of 9.5 percent. The proceeds from Series G bonds will refund all of the Series B bonds, which were sold at a true interest cost of 12.8 percent. The refunding will result in a net savings of interest cost over the life of the bonds of approximately $36.5 million.

DWR sold additional power revenue bonds of $125 million for the Reid Gardner Project on November 16, 1982 as Series C. About $47.1 million provided reimbursement of other SWP funds used to finance construction of these facilities prior to delivery of the bonds, and about $44 million remained to complete construction of the facilities. The remaining proceeds

were used for other requirements as shown in Line 17.

Line 22: Small Hydro-South Geysers Series D

On November 16, 1982, DWR sold $75 million of power revenue bonds to fund the initial costs of Small Hydro Project I and the South Geysers Project. The bond proceeds provided (1) $10.6 million for reimbursement to the State for construction prior to delivery of the Series D bonds, and (2) $39.0 million for deposit to the Central Valley Water Project Construction Fund for a portion of the remaining construction cost of these facilities. The remaining proceeds are used for other requirements as shown in Line 17.

Line 23: Bottle Rock Series E

DWR sold $125 million of power revenue bonds on April 27, 1983 for construction of Bottle Rock Powerplant. Approximately $76.9 million was set aside to repay the Bottle Rock Bond Anticipation Notes sold on December 1, 1981 (redeemed December 1, 1983). About $20.0 million was for completion of this facility, and the remaining proceeds were used for other requirements as shown in Line 17.

Line 24: Alamo-South Geysers Series F

On April 27, 1983, DWR sold $75 million of power revenue bonds for a portion of the construction cost of the Alamo Project and South Geysers Project. Approximately $25.6 million was set aside to repay the Alamo Bond Anticipation Notes sold on December 1, 1981 (redeemed December 1, 1983). The bond proceeds provided (1) $4.5 million for reimbursement of other SWP funds used to finance construction of the Alamo Project prior to delivery of the bonds, and (2) $29.0 million for construction of these facilities. The remaining proceeds were used for other requirements as shown in Line 17.

Line 25: Power Revenue Bond Series H

On June 10, 1986, DWR sold $206.7 million of power revenue bonds for refunding portions of Series C and D power revenue bonds and to provide $22.2 million of additional monies for power facilities capital costs. The additional monies provided (1) $5.0 million for reimbursement of other SWP funds used to complete construction of the Pyramid Hydroelectric Project, (2) $1.7 million for a portion of the remaining construction costs of the Alamo Project, and (3) $15.5 million for construction costs of additional capital improvements at the Reid Gardner Project. The remaining additional money was used for other requirements as shown in Line 17.

Line 26: Assumed Future Power Revenue Bonds

Future power revenue bonds (those sold after June 30, 1986) are needed to provide $60 million for completion of South Geysers Power Project and for special capital requirements under revenue bond financing (interest for two years following bond sale, the first year of operating cost, and discount and finance costs of the bonds). The financial analysis assumes that the additional power revenue bonds will be sold in late 1987. (See schedule for projected future bond sales shown in Table 22.)

Line 27: Subtotal Power Revenue Bonds

This line is the total of Lines 21-26.

Line 28: 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 provdes 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 29: Application of Proceeds from Sale of Water Bonds, Davis-Grunsky Act Program

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 $12.25 million in authorized Davis-Grunsky bonds will be sold in 1987.

TABLE 22: PROJECTED BOND SALES

Bond Sale	Purpose	Date of Sale
Series W Water Bonds ($ 12,250,000)	Davis-Grunsky Act Program	Second Quarter of 1987
Power Facilities Revenue Bonds ($ 60,000,000)	South Geysers Powerplant	Fourth Quarter of 1987
Water System Revenue Bonds ($175,000,000)	SWP Construction Program	First Quarter of 1987
Water System Revenue Bonds ($160,000,000)	East Branch Enlargement	Second Quarter of 1989

Line 30: 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

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a) Plus $2,467,000 for non-SWP purposes.
b) All for non-SWP purposes.

The financial analysis assumes that appropriations of Tidelands Oil revenues will be made as needed to fund future costs of the Los Banos Demonstration Desalting Facility and the San Joaquin drainage monitoring program (see Line 13).

Line 31: Application of Miscellaneous Receipts to Construction

This line shows the application of Miscellaneous Receipts for capital expenditures (see description for Line 36).

Line 32: 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 67 and 68), and subsequently reappropriated to construction.

Lines 33 and 33A: Application of Proceeds from Sale of Supplemental Water System Revenue Bonds

These two lines show the application of bond proceeds from Water System Revenue Bonds needed for completion of capital expenditures shown in this analysis. Line 33 assumes a $175 million bond sale in 1987. Line 33A shows the application of proceeds of bonds sold to finance the East Branch Enlargement and the associated short term interest earnings on unexpended proceeds. On July 15, 1986, DWR sold $132 million of Water System Revenue Bonds for the enlargement. It is anticipated that a $160 million sale will be required in 1989 to complete work on the East Branch Enlargement.

Line 34: Subtotal Other Capital Financing

This line is the total of Lines 28-33A.

Line 35: Total Financing of Capital Requirements

This line is the total of Lines 27 and 34.

TABLE 23: REVENUE BOND PROCEEDS AFFECTING THE PROJECT INTEREST RATE

(in millions)

Revenue Bond Proceeds	Devil Canyon Castaic Revenue Bonds	Pyramid William A. Warne Hydroelectric Revenue Bonds (Series A)	Alamo Hydroelectric Bond Anticipation Note	Small Hydro Project I Revenue Bonds (Series D)	Alamo Hydroelectric Revenue Bonds (Series F)
Applied to construction costs	$125.3	$71.2	$16.8	$25.4	$38.9
Less portion of such proceeds derived from interest earnings prior to delivery of bonds	1.5	0.5	0.1	0.2	0.3
Plus bond discount and financing costs	1.4	1.1	0.3	1.5	0.7
Subtotal, proceeds included in calculating the Project Interest Rate	$125.2	$71.8	$17.0	$26.7	$39.3
Principal amount of bonds	$139.2	$95.8	$24.4	$37.5	$50.0
Percent total principal amount included in calculating the Project Interest Rate	90%	75%	70%	71%	79%

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, including interest earnings on any unexpended proceeds from the sale of general obligation bonds. 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 36: Miscellaneous Receipts

Sources of Miscellaneous Receipts 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 unexpended miscellaneous receipts, 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 for the 1986-87 fiscal year. Because of the uncertainties over future legislative action no appropriations are shown for 1986 through 1995. DWR is considering an offset between the amount owed to the SWP by the State for costs allocated to recreation and the amount the SWP owes the California Water Fund.

Lines 37-40: Water Contractor Payments

These lines show the separate elements of water contractor payments. The

payments identified in Lines 37-40 are described in detail in Appendix B, with supplemental discussion in the following paragraphs. Line 39 also includes revenues sufficient to cover costs associated with sales of excess power.

OMP&R costs currently are paid under the Transportation Charge 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. In addition, proceeds from the sale of power revenue bonds for Off-Aqueduct power facilities are not included in the calculation. Table 23 shows the percentage of total proceeds from revenue bond issues that affect the Project Interest Rate.

In 1982, a contract amendment was signed by all contractors (except Coachella Valley Water District, which signed the amendment in 1985) that deals in part with cost allocation of Off-Aqueduct power plants. That amendment excludes financing for Off-Aqueduct power facilities (such as Reid Gardner Unit #4) from the Project Interest Rate calculation. The amendment shifts such costs from the capital component of the Transportation Charge to the minimum OMP&R component.

Table 24 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 1987 water charges, which were billed July 1, 1986. However, the following are significant differences between the sum of future charges shown in Line 42 and the substantiation of 1987 charges discussed in Appendix B.

- Future capital costs discussed in Appendix B are based upon prices prevailing on December 31, 1985. Those shown in the financial analysis include allowances for price escalation.

- Pre-1986 charges discussed in Appendix B represent what the charges should have been under presently known conditions. Pre-1986 charges shown in Table 19 are those actually paid under previously determined bills.

- Charges discussed in Appendix B are unadjusted for past over- or underpayments. Table 19 charges for 1986 and thereafter include

TABLE 24: ACTUAL BOND SALES AND PROJECT INTEREST RATES

Bond Sales	Date of Sale	Dollar-Years(a (in 1,000s)	Interest Cost ($1,000)	Percent Interest Cost(b	Project Interest Rate (%)(c
	(1)	(2)	(3)	(4)	(5)
Actual Issues					
$ 50,000,000 Bond Anticipation Notes	11/21/63	26,944	531	1.970	1.970
$100,000,000 Series A Water Bonds	2/18/64	3,402,000	119,750	3.520	3.508
$ 50,000,000 Series B Water Bonds	5/5/64	1,726,000	60,986	3.533	3.516
$100,000,000 Series C Water Bonds	10/7/64	3,452,000	123,764	3.585	3.544
$100,000,000 Series D Water Bonds	2/16/65	3,497,900	122,403	3.499	3.531
$100,000,000 Series E Water Bonds	11/23/65	3,497,900	130,029	3.717	3.573
$100,000,000 Series F Water Bonds	6/8/66	3,497,900	137,359	3.927	3.638
$100,000,000 Series G Water Bonds	11/22/66	3,497,900	143,788	4.111	3.711
$100,000,000 Series H Water Bonds	3/21/67	3,497,900	129,261	3.695	3.709
$100,000,000 Series J Water Bonds	7/18/67	3,497,900	143,199	4.094	3.754
$100,000,000 Series K Water Bonds	11/14/67	3,497,900	163,887	4.685	3.853
$150,000,000 Revenue Bonds, Oroville Division, Series A	4/3/68	5,228,700	270,289	5.197	-
$100,000,000 Series L Water Bonds	7/11/68	3,497,900	166,918	4.772	3.941
$100,000,000 Series M Water Bonds	10/22/68	3,497,900	169,989	4.860	4.021
$ 94,995,000 Revenue Bonds, Oroville Division, Series B	4/1/69	3,423,460	195,902	5.767	-
$ 46,761,000 Cumulative 1970 General Fund Borrowing, repaid 7/10/70	-	4,938	346	7.007	4.021
$200,000,000 Series N and P Bond Anticipation Notes.	6/16/70	200,000	11,660	5.830	4.030
$100,000,000 Series N Water Bonds	2/2/71	3,447,900	190,292	5.519	4.148
$100,000,000 Series Q Bond Anticipation Notes	3/10/71	100,000	2,349	2.350	4.143
$100,000,000 Series P Water Bonds	4/21/71	3,397,900	193,377	5.691	4.255
$150,000,000 Series Q and R Water Bonds	11/9/71	5,171,850	265,734	5.138	4.342
$ 40,000,000 Series S Water Bonds	3/28/72	1,399,160	76,509	5.468	4.371
$139,165,000 Devil Canyon-Castaic Revenue Bonds(d	8/8/72	4,776,204	258,839	5.419	4.457
$ 10,000,000 Series T Water Bonds	3/20/73	185,265	9,491	5.122	4.459
$ 10,000,000 Series U Water Bonds	1/13/76	158,750	8,731	5.50	4.462
$ 10,000,000 Series V Water Bonds	11/15/77	158,750	7,573	4.769	4.462
$ 95,800,000 Pyramid Hydroelectric Revenue Bonds(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 Bond Anticipation Notes	12/1/81	264,600	25,137	9.500	-
$ 24,400,000 Alamo 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	7/7/82	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	8.435	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	4/13/85	4,502,728	425,840	9.457	-
Total (excluding Oroville CVP Revenue Bonds and Power Revenue Bonds for Off-Aqueduct Facilities)		67,904,359	3,422,828		

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 Central Valley Project Revenue Bonds, Oroville Division, and Power Revenue Bonds for Off-Aqueduct Facilties, which do not affect the "Project Interest 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

adjustments for any apparent over- or underpayments of pre-1986 charges.

No payments are included in these lines for East Branch Enlargement expenditures that are included in Line 9. It is assumed that these expenditures will be financed with water system revenue bonds. Repayment of these bonds is shown in Line 41.

Line 41: Water Revenue Bond Payments

This line shows the additional payments to support the supplemental water revenue bonds required from the water contractors. This includes bonds to finance the East Branch enlargement as well as supplemental bonds to finance other SWP capital costs. It is anticipated that the annual payments would match the annual bond service.

Line 42: Subtotal Water Contractor Payments

This line is the total of Lines 37-41.

Line 43: Off-Aqueduct Cover Adjustment

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. Cover is collected as required by the bond resolutions to provide security to the bondholders. This amount is charged annually to contractors and collected through the minimum OMP&R component of the Transportation Charge; if not needed to meet annual bond service, it is credited back to the contractors in the following year. The amount varies in proportion to the debt service for these facilities.

Line 44: 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 was reviewed in 1980 and changed to 44.47 percent through December 31, 1985. A revision of this percentage is currently under review. Pending final approval of a revised percentage, the amounts shown in Line 44 are based on the assumption that the 44.47 percent federal share will continue.

Line 45: 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 1986-87, no funds were appropriated for this purpose. Because of the uncertainties over future legislative action no appropriations are shown for 1986 through 1995. DWR is considering an offset between the amount owed to the SWP by the State for costs allocated to recreation and the amount the SWP owes the California Water Fund.

Line 46: Local Agency Payments under Davis-Grunsky Loan Repayment Contracts

Over $46 million of loan funds have been disbursed as of December 31, 1985. Loan repayments received through December 31, 1985 are shown in the history column. The future amounts on Line 46 are based on 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 47: Miscellaneous Revenues

Miscellaneous revenues include interest earnings on unexpended proceeds from sale of general obligation bonds, interest on operating reserves, and other short-term investment earnings on SWP revenues. Based upon experience to date, interest earnings for 1987 and beyond are estimated at $10 million per year.

This line also includes bond proceeds that are special reserves under revenue bond financing, described in Line 17. 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 and revenue bond service.

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 1952-1985 entry includes final settlement of payments under the contract.

Line 49: Subtotal Other Revenues

This is the total of Lines 44-48.

Line 50: Total Operating Revenues

This is the total of Lines 42 and 49.

Line 51: Total Operating Revenues and Miscellaneous Receipts

This is the total of Lines 36 and 50.

Project Expenses

Project expenses include operation, maintenance, and power (OM&P) costs, deposits to replacement reserves, deposits to special reserves (see Line 54 description), debt service, deposits to operating reserves, repayment of the California Water Fund, and application of miscellaneous receipts for construction (see Line 31 description).

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 52: Project Operation, Maintenance, and Power Costs

Historical and projected OM&P costs are presented in Table 25 by project facility, by composition, and by project purpose. Line 52 shows the OM&P portion of the Table 25 costs. Table 25 and Line 52 also include the

TABLE 25: SWP OPERATION, MAINTENANCE, POWER, AND REPLACEMENT COSTS

(in Thousands of Dollars)

FEATURE	Calendar Year												Total
	1962-1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996-2035	
BY PROJECT FACILITY													
Feather River Facilities	138,169	-5,799	-5,500	-6,282	-6,462	-7,947	-8,048	-8,058	-8,050	-8,062	-8,096	-309,636	-243,771
North Bay Aqueduct	2,863	174	150	914	939	962	970	984	1,005	1,020	1,054	69,092	80,127
Suisun Marsh	0	773	912	884	899	899	901	901	901	901	901	36,040	44,912
South Bay Aqueduct	43,858	5,843	6,189	5,778	5,779	5,839	5,834	5,869	5,976	6,017	6,110	336,394	439,486
California Aqueduct													
Delta to Edmonston	542,924	87,957	111,862	92,124	92,529	91,865	92,695	94,191	95,811	94,109	98,910	7,062,687	8,557,664
Edmonston to Perris	375,212	66,150	80,925	60,201	60,583	61,309	61,564	60,568	62,045	62,954	63,455	6,257,214	7,272,180
West Branch	37,265	-6,401	-6,743	-9,463	-10,183	-10,127	-10,219	-10,153	-10,810	-9,536	-11,241	-290,304	-347,915
Coastal Branch	20,189	2,482	3,020	2,944	2,787	2,805	2,789	2,788	3,261	3,167	3,261	155,557	205,050
Off-Aqueduct Power Generating Facilities	113,355	64,003	72,334	74,005	76,409	85,568	87,190	86,124	85,057	80,743	84,524	1,189,184	2,098,496
Water Quality Monitoring	15,158	5,391	6,041	6,007	5,104	4,288	5,451	5,452	5,452	5,452	5,452	160,880	230,128
Davis-Grunsky Act Program	1,452	150	150	150	150	150	150	150	150	150	150	6,000	8,952
SUBTOTAL: Charges to SWP Contractors	1,290,445	220,723	269,340	227,262	228,534	235,611	239,277	238,816	240,798	236,915	244,480	14,673,108	18,345,309
Payments to/Credits from PGandE under Comprehensive Agreement	30,026	1,873	-4,324	-4,185	-4,046	-3,908	-3,769	-3,630	-3,491	-3,352	-3,213	-22,821	-24,840
TOTAL OMP&R COSTS	1,320,471	222,596	265,016	223,077	224,488	231,703	235,508	235,186	237,307	233,563	241,267	14,650,287	18,320,469
BY COMPOSITION													
Salaries and Expenses of Headquarters Personnel	281,321	32,346	34,072	32,899	32,488	31,569	31,092	31,128	30,944	30,944	30,944	1,236,166	1,835,913
Salaries and Expenses of Field Personnel	537,140	62,055	67,574	69,542	68,378	68,652	70,138	69,835	69,705	69,705	69,703	2,741,375	3,963,802
Pumping Power													
Used by Pumping Plants	463,673	111,982	159,473	116,582	115,350	118,062	118,731	118,275	121,461	126,223	123,647	12,741,978	14,435,437
Produced by Generation Plants	-108,439	-56,950	-74,849	-76,585	-74,596	-77,503	-78,163	-77,339	-77,650	-82,089	-77,715	-3,865,707	-4,727,585
Payments to/Credits from PGandE Under Comprehensive Agreement	30,026	1,873	-4,324	-4,185	-4,046	-3,908	-3,769	-3,630	-3,491	-3,352	-3,213	-22,821	-24,840
Off-Aqueduct Power Generating Facilities Requirement	113,355	64,003	72,334	74,005	76,409	85,568	87,190	86,124	85,057	80,743	84,524	1,189,184	2,098,496
Oroville-Thermalito Insurance Premiums	5,235	405	405	405	405	405	405	405	405	405	405	6,075	15,360
Less: Portion of Costs Incurred During Construction	-78,711	-916	-942	-299	-256	-231	-335	-366	-82	-82	-82	-1,530	-83,832
SUBTOTAL	1,243,600	214,798	253,743	212,364	214,132	222,614	225,289	224,432	226,349	222,497	228,213	14,024,720	17,512,751
Deposits to Replacement Reserves	76,871	7,798	11,273	10,713	10,356	9,089	10,219	10,754	10,958	11,066	13,054	625,567	807,718
TOTAL OMP&R COSTS	1,320,471	222,596	265,016	223,077	224,488	231,703	235,508	235,186	237,307	233,563	241,267	14,650,287	18,320,469
BY PROJECT PURPOSE													
Water Supply and Power Generation	1,213,154	210,389	256,706	215,135	216,384	224,538	226,948	225,953	227,814	224,251	229,592	14,045,916	17,516,780
Payments to/Credits from PGandE under Comprehensive Agreement	30,026	1,873	-4,324	-4,185	-4,046	-3,908	-3,769	-3,630	-3,491	-3,352	-3,213	-22,821	-24,840
Recreation and Fish and Wildlife Enhancement	24,819	4,213	4,567	4,242	4,228	4,183	4,389	4,375	4,399	4,522	4,392	212,292	280,621
Flood Control	847	124	141	136	130	130	130	130	131	132	131	6,120	8,282
Miscellaneous Purposes													
Federal Share, San Luis and Delta Facilities	47,251	5,621	7,519	7,326	7,373	6,341	7,391	7,939	8,035	7,591	9,946	392,020	514,353
Other (Davis-Grunsky, Drainage, City of Los Angeles)	4,374	376	407	423	419	419	419	419	419	419	419	16,760	25,273
TOTAL OMP&R COSTS	1,320,471	222,596	265,016	223,077	224,488	231,703	235,508	235,186	237,307	233,563	241,267	14,650,287	18,320,469

operation and maintenance costs for the federal share of joint facilities and those OM&P costs allocated to recreation, which are intended to be offset by revenues shown in Lines 44 and 45, respectively. Allowances for cost escalation are included in OM&P costs through 1988. 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 52 also includes costs associated with power transactions that result in the sale of power not required for the delivery of water.

Line 53: Deposits to Replacement Reserves

This line includes funds set aside as required by contract for replacement of existing SWP facilities. As of December 31, 1985, $6.4 million had been spent for replacement costs; the balance of the replacement reserve as of this date was $70 million. Replacement reserve amounts are also shown in Table 25.

Line 54: Deposits to Special Reserves under Revenue Bond Financing

Line 54 includes two major components: special reserves deposits, and the amount of miscellaneous receipts carry-over 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:

- o proceeds set aside to pay bond interest through one year following construction (capitalized interest);
- o proceeds set aside for the first year of operating costs (capitalized O&M);
- o water contractor payments for debt service reserves; and
- o water contractor payments for power revenue bond cover requirements.

The history entry for Line 54 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:

- o total capitalized interest paid out;
- o total capitalized O&M paid out; and
- o debt service cover payments returned to water contractors.

Special reserves are reduced over time as reserved amounts are used for their respective purposes. The amount shown each\year in Line 54 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 55-56: Payment of Service on Bonds Sold through June 30, 1986

These two lines show the total

principal and interest payments on bonds sold to date. Table 26 summarizes payments on general obligation bonds (Series A through V), Oroville Revenue Bonds, Devil Canyon-Castaic Project Revenue Bonds, Pyramid Hydroelectric Project Revenue Bonds, Reid Gardner Project Revenue Bonds, Small Hydro Project I Revenue Bonds, South Geysers Project Revenue Bonds, Bottle Rock Project Revenue Bonds, and Alamo Project Revenue Bonds.

The last bonds sold were the Series H Power Revenue Bonds in June 1986. Proceeds from the Series H bonds were used to refund portions of Series C and D bonds sold November 16, 1982. The principal and interest schedules for Series C and D have been revised to reflect this refunding.

Annual interest and principal payments on an individual series of general obligation bonds and the two series of Oroville Revenue Bonds are shown in the following bulletins:

Bond Series	Bulletin	Table
General Obligation		
A-R	132-72	13
S	132-73	10
T	132-74	10
U	132-76	11
V	132-79	11
Oroville Revenue		
A and B	132-72	12

Since 1978, the 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

The schedule for service of Oroville Revenue Bonds shown in Table 26 is based upon a revised bond maturity schedule that reflects these early bond retirements.

Line 56 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 57-58: Payments on Projected Future Power Revenue Bonds

These lines show the projected annual service for future power revenue bonds shown on Line 26. Assumptions concerning the service on these future bonds are as follows:

- the interest costs for the power revenue bonds are estimated to average 9.0 percent; and
- for Off-Aqueduct power facilities, the debt service pattern would provide for initial maturities in the year following bond sale, with the latest maturities in 2016. For other power facilites, maturities would begin in the year of the bond sale and extend through 2022.

Lines 59-60: Payments on Projected Future Water Bonds

These lines show the annual service on the projected sale of $12.25 million of Davis-Grunsky bonds in 1987 at an assumed net interest cost averaging 8.5 percent. Bonds were assumed to be a 20-year issues, with maturities commencing in 1988.

Also included in these lines is the annual service on the $132 million in water system revenue bonds solds on July 15, 1986, as well as the other water revenue bonds projected to be sold.

TABLE 26: ANNUAL SERVICE ON BONDS SOLD THROUGH JUNE 30, 1986

Calendar Year	Amounts in Thousands of Dollars									
	Series A through V Water Bonds		Oroville Revenue Bonds		Devil Canyon-Castaic Project Revenue Bonds		Pyramid Hydroelectric Bonds Sold October 23, 1979		Reid Gardner Project Revenue Bonds Sold July 7, 1982	
	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	1,725	12,637	0	7,708	0	0	0	0
1979	13,650	68,690	1,815	12,540	0	7,708	0	0	0	0
1980	16,050	67,968	1,915	12,441	0	7,708	0	7,900	0	0
1981	18,050	67,109	2,020	12,334	0	7,708	0	7,292	0	0
1982	19,250	66,162	2,130	12,221	0	7,708	0	7,292	0	7,972(b
1983	20,520	65,148	2,245	12,101	900	7,708	0	7,292	0	23,917(b
1984	21,785	64,068	2,365	11,982	955	7,647	640	7,292	0	23,917(b
1985	22,555	63,932	2,485	8,417	1,010	7,583	675	7,238	8,355(c	15,407(c
1986	23,830	61,742	2,605	7,972	1,070	7,515	715	7,180	2,565	21,198
1987	25,495	60,492	2,735	7,839	1,135	7,442	755	7,120	2,710	21,054
1988	26,770	59,165	2,870	7,699	1,205	7,366	795	7,055	2,865	20,898
1989	28,145	57,825	3,015	7,549	1,275	7,284	840	6,988	3,040	20,719
1990	29,385	56,473	3,175	8,223	1,355	7,198	890	6,916	3,250	20,514
1991	30,365	55,070	3,335	7,219	1,435	7,107	940	6,841	3,485	20,278
1992	31,295	53,640	3,510	7,041	1,520	7,010	995	6,761	3,755	20,008
1993	32,940	52,183	3,695	7,415	1,610	6,907	1,050	6,693	4,050	19,708
1994	34,525	50,660	3,885	6,657	1,705	6,799	1,115	6,622	4,390	19,376
1995	35,660	49,073	4,085	6,450	1,810	6,684	1,180	6,545	4,755	19,007
1996	36,900	47,436	4,300	6,474	1,920	6,561	1,250	6,464	5,165	18,598
1997	36,595	45,818	4,525	6,002	2,035	6,432	1,325	6,376	5,615	18,143
1998	36,675	44,226	4,760	5,760	2,155	6,295	1,405	6,283	6,125	17,638
1999	37,600	42,655	5,005	5,497	2,285	6,160	1,490	6,184	6,685	17,081
2000	38,890	41,033	5,280	5,211	2,420	6,040	1,580	6,078	7,295	16,466
2001	39,980	39,351	5,565	4,909	2,565	5,912	1,680	5,964	7,975	15,787
2002	41,120	37,620	5,865	4,592	2,720	5,773	1,785	5,842	8,725	15,038
2003	42,970	35,835	6,180	4,257	2,885	5,626	1,900	5,712	9,545	14,218
2004	45,160	33,957	6,520	3,902	3,055	5,470	2,020	5,573	10,450	13,311
2005	46,450	31,995	6,870	3,529	3,240	5,305	2,150	5,424	11,445	12,318
2006	47,740	29,971	7,245	3,135	3,435	5,130	2,290	5,268	12,530	11,231
2007	49,230	27,883	7,635	2,720	3,640	4,945	2,445	5,102	13,725	10,040
2008	51,220	25,727	8,050	2,282	3,860	4,749	2,605	4,925	15,025	8,736
2009	53,560	23,478	8,490	1,820	4,090	4,540	2,780	4,736	16,470	7,294
2010	55,250	21,134	7,470	1,435	4,335	4,319	2,960	4,534	18,045	5,713
2011	56,740	18,717	3,935	1,173	4,595	4,085	3,160	4,305	19,785	3,981
2012	58,530	16,216	0	939	4,875	3,837	3,370	4,060	21,680	2,081
2013	60,370	13,676	0	691	5,165	3,574	3,600	3,799	0	0
2014	57,900	11,244	0	428	5,475	3,303	3,840	3,520	0	0
2015	53,690	8,838	0	149	5,805	3,015	4,095	3,222	0	0
2016	46,130	6,626	100	3	6,150	2,710	4,370	2,905	0	0
2017	38,060	4,614	0	0	6,520	2,388	4,665	2,566	0	0
2018	25,350	2,980	0	0	6,910	2,045	4,975	2,204	0	0
2019	16,890	1,778	0	0	7,325	1,682	5,310	1,819	0	0
2020	17,320	934	0	0	7,765	1,298	5,665	1,407	0	0
2021	8,510	301	0	0	8,230	890	6,045	968	0	0
2022	1,800	48	0	0	8,725	458	6,450	500	0	0
TOTAL	1,570,000	2,377,577	156,060(h	351,813(h	139,165	283,872	95,800	228,767	239,505	481,647

a) Serial maturities or mandatory redemption requirements for term bonds.
b) Interest on the Series B bonds is capitalized to August 1, 1984.
c) Principal and interest amounts on the Series B bonds are replaced by the amounts for the Series G bonds beginning in 1985.
d) Interest on the Series C bonds is capitalized to August 1, 1984.

(continued)

TABLE 26: ANNUAL SERVICE ON BONDS

Calendar Year	Amounts in Thousands of Dollars									
	Reid Gardner Project Revenue Bonds Sold November 16, 1982		South Geysers and Small Hydro I Revenue Bonds Sold November 16, 1982		Bottle Rock Project Revenue Bonds Sold April 27, 1983		South Geysers and Alamo Project Revenue Bonds Sold April 27, 1983		Subtotal	
	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest	Principal(a	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	14,425	89,657
1979	0	0	0	0	0	0	0	0	15,465	89,938
1980	0	0	0	0	0	0	0	0	17,965	96,017
1981	0	0	0	0	0	0	0	0	20,070	94,443
1982	0	0	0	0	0	0	0	0	21,380	101,355
1983	0	11,802(d	0	7,286(e	0	6,017(f	0	3,666(g	23,665	144,937
1984	0	11,802(d	0	7,286(e	0	10,315(f	0	6,285(g	25,745	150,594
1985	1,070	11,802	0	7,286(e	0	10,315(f	0	6,285(g	36,150	137,265
1986	1,175	1,138	0	1,827	1,240	10,315	0	6,285	33,200	125,172
1987	1,285	1,003	0	1,827	1,305	10,253	255	6,285	35,675	123,315
1988	1,405	887	480	1,827	1,390	10,181	500	6,271	38,280	121,349
1989	1,540	778	520	1,790	1,470	10,098	535	6,241	40,380	119,272
1990	1,685	655	570	1,748	1,575	10,002	570	6,206	42,455	117,935
1991	1,830	517	615	1,701	1,680	9,892	610	6,166	44,295	114,791
1992	2,005	363	665	1,649	1,805	9,771	655	6,122	46,205	112,365
1993	2,170	191	725	1,591	1,940	9,637	700	6,074	48,880	110,399
1994	0	0	790	1,525	2,085	9,490	755	6,021	49,250	107,150
1995	0	0	860	1,454	2,245	9,328	815	5,962	51,410	104,503
1996	0	0	945	1,374	2,425	9,151	880	5,898	53,785	101,956
1997	0	0	1,030	1,287	2,625	8,957	955	5,827	54,705	98,842
1998	0	0	1,120	1,190	2,840	8,744	1,025	5,750	56,105	95,886
1999	0	0	1,230	1,083	3,075	8,511	1,115	5,666	58,485	92,837
2000	0	0	1,345	965	3,340	8,256	1,215	5,573	61,365	89,622
2001	0	0	1,475	835	3,625	7,979	1,310	5,473	64,175	86,210
2002	0	0	1,615	690	3,945	7,675	1,430	5,362	67,205	82,592
2003	0	0	1,770	530	4,285	7,343	1,555	5,242	71,090	78,763
2004	0	0	1,940	415	4,675	6,979	1,695	5,110	75,515	74,717
2005	0	0	2,125	289	5,085	6,582	1,845	4,966	79,210	70,408
2006	0	0	2,325	151	5,545	6,149	2,010	4,809	83,120	65,844
2007	0	0	0	0	6,045	5,678	2,190	4,638	84,910	61,006
2008	0	0	0	0	6,585	5,164	2,390	4,452	89,735	56,035
2009	0	0	0	0	7,185	4,604	2,605	4,249	95,180	50,721
2010	0	0	0	0	7,830	3,994	2,840	4,028	98,730	45,157
2011	0	0	0	0	8,545	3,328	3,095	3,786	99,855	39,375
2012	0	0	0	0	9,325	2,602	3,380	3,523	101,160	33,258
2013	0	0	0	0	10,175	1,809	3,685	3,236	82,995	26,785
2014	0	0	0	0	11,110	944	4,030	2,923	82,355	22,362
2015	0	0	0	0	0	0	4,395	2,580	67,985	17,804
2016	0	0	0	0	0	0	4,800	2,707	61,550	14,451
2017	0	0	0	0	0	0	2,795	1,799	52,040	11,367
2018	0	0	0	0	0	0	3,055	1,561	40,290	8,790
2019	0	0	0	0	0	0	3,335	1,301	32,860	6,580
2020	0	0	0	0	0	0	3,645	1,018	34,395	4,657
2021	0	0	0	0	0	0	3,980	708	26,765	2,867
2022	0	0	0	0	0	0	4,350	370	21,325	1,376
TOTAL	14,165(i	40,938(i	22,145(i	47,606(i	125,000	240,063	75,000	179,924	2,436,840	4,232,207

e) Interest on the Series D bonds is capitalized to December 1, 1985.
f) Interest on the Series E bonds is capitalized to October 1, 1985.
g) Interest on the Series F bonds is capitalized to December 1, 1985.
h) Principal and interest schedule is adjusted to reflect early redemption of bonds.
i) Principal and interest schedule is adjusted to reflect partial refunding by Series H bonds.

SOLD THROUGH JUNE 30, 1986

Calendar Year	Amounts in Thousands of Dollars							
	Power Facilities Revenue Bonds, Series H Sold June 10, 1986							
	Refunding Portion		Construction Funds		Total		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	14,425	89,657
1979	0	0	0	0	0	0	15,465	88,938
1980	0	0	0	0	0	0	17,965	96,017
1981	0	0	0	0	0	0	20,070	94,443
1982	0	0	0	0	0	0	21,380	101,355
1983	0	0	0	0	0	0	23,665	144,937
1984	0	0	0	0	0	0	25,745	150,594
1985	0	0	0	0	0	0	36,150	137,265
1986	65	7,174	0	774	65	7,948	33,265	133,120
1987	650	14,345	260	1,548	910	15,893	36,585	139,208
1988	770	14,316	285	1,537	1,055	15,853	39,335	137,202
1989	905	14,279	280	1,523	1,185	15,802	41,565	135,074
1990	945	14,231	310	1,508	1,255	15,739	43,710	133,674
1991	1,005	14,177	315	1,490	1,320	15,667	45,615	130,458
1992	1,065	14,116	340	1,472	1,405	15,588	47,610	127,953
1993	1,145	14,050	355	1,450	1,500	15,500	50,380	125,899
1994	3,505	13,975	390	1,427	3,895	15,402	53,145	122,552
1995	3,740	13,741	405	1,401	4,145	15,142	55,555	119,645
1996	3,975	13,483	435	1,373	4,410	14,856	58,195	116,812
1997	4,250	13,204	465	1,343	4,715	14,547	59,420	113,389
1998	4,535	12,903	490	1,309	5,025	14,212	61,130	110,098
1999	4,845	12,576	535	1,274	5,380	13,850	63,865	106,687
2000	5,170	12,222	570	1,236	5,740	13,458	67,105	103,080
2001	5,545	11,840	605	1,193	6,150	13,033	70,325	99,243
2002	5,900	11,424	655	1,148	6,555	12,572	73,760	95,164
2003	6,320	10,976	700	1,097	7,020	12,073	78,110	90,836
2004	6,755	10,489	760	1,044	7,515	11,533	83,030	86,250
2005	7,205	9,969	805	985	8,010	10,954	87,220	81,362
2006	7,685	9,410	875	923	8,560	10,333	91,680	76,177
2007	10,715	8,815	940	855	11,655	9,670	96,565	70,676
2008	11,455	7,958	1,015	780	12,470	8,738	102,205	64,773
2009	12,220	7,041	1,090	699	13,310	7,740	108,490	58,461
2010	13,060	6,064	1,185	611	14,245	6,675	112,975	51,832
2011	13,970	5,019	1,265	517	15,235	5,536	115,090	44,911
2012	15,200	3,901	1,375	416	16,575	4,317	117,735	37,575
2013	4,695	2,685	265	306	4,960	2,991	87,955	29,776
2014	5,020	2,310	285	284	5,305	2,594	87,660	24,956
2015	5,300	1,908	305	262	5,605	2,170	73,590	19,974
2016	2,145	1,484	335	237	2,480	1,721	64,030	16,172
2017	2,295	1,312	360	210	2,655	1,522	54,695	12,889
2018	2,455	1,129	385	182	2,840	1,310	43,130	10,100
2019	2,615	932	420	151	3,035	1,083	35,895	7,663
2020	2,800	723	450	117	3,250	840	37,645	5,497
2021	2,975	499	490	81	3,465	580	30,230	3,447
2022	3,265	261	525	42	3,790	303	25,115	1,679
TOTAL	186,165	314,941	20,525	32,805	206,690	347,745	2,643,530	4,579,952

Lines 61-62: Total Payments of Bond Service

This is the total of interest payments shown on Lines 56, 58, and 60 and the total of principal payments shown on Lines 55, 57, and 59, respectively.

Line 63: Subtotal Debt Service

This is the total of Lines 61 and 62.

Line 64: California Water Fund Appropriation to Non-SWP Purposes

In 1982 and 1983, DWR transferred $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.

Line 65: Total Operating Expenses and Debt Service

This is the total of Lines 52, 53, 54, 63, and 64.

Line 66: Deposits to Operating Reserves Added

DWR policy for proper fiscal management of the SWP and protection of the interests of bondholders is to maintain reserves of $48 million for payment of operation and maintenance costs, and debt service. The financial analysis indicates that the maximum reserve amount will have been reached by the end of 1989. Entries in this line are annual deposits or expenditures into or out of the reserve.

Line 67: 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 1995 shown in Line 67 are required for financing scheduled capital expenditures.

Line 68: California Water Fund Repayment Available for Future Construction

Line 68 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 64). The amount shown could be transferred to Line 67 if additional facilities are scheduled for construction which would require funding.

Line 69: Miscellaneous Receipts Used for Construction

This line is the same as Line 31.

Line 70: Total Project Expenses

This is equal to the sum of Lines 65 through 69.

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 27 represent future costs of water by SWP service area. The Table 27 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

TABLE 27: ESTIMATED FUTURE UNIT WATER CHARGES

SWP Service Area	Dollars per Acre-Foot(a			
	1990		2000	
	Unescalated	Escalated(b	Unescalated	Escalated(b
Feather River				
Capital OM&R(c(d	25	27	18	23
North Bay				
Capital, OM&R	224	229	120	137
Power(e	16	16	14	20
Total	240	245	134	157
South Bay				
Capital, OM&R	52	55	47	54
Power(e	37	38	36	51
Total	89	93	83	105
San Joaquin				
Capital, OM&R	29	31	29	35
Power(e	18	18	17	25
Total	47	49	46	60
Southern California				
Capital, OM&R	138	144	113	124
Power(e	108	110	107	157
Total	246	254	220	281

a) These estimated unit water charges differ from those in Table 27 of Bulletin 132-85 due to a number of factors, primarily (1) changes in projected water deliveries in some service areas, (2) increased OM&R costs projected for future years, and (3) changes in projected power costs.
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.

able to deliver full contractor requests for water.

The unit water charges shown in Table 27 are shown both as unescalated 1986 dollars, and escalated rates reflecting assumed future inflation. DWR estimates of future capital expenditures include allowances for escalation of construction costs at 3 percent per year through 1986 and at 6 percent per year thereafter. The escalated unit rates for future power sources reflect escalation varying from 7.5 percent to 10 percent, depending upon the source of energy.

Chapter VIII

PROFILES OF SWP CONTRACTORS

Thirty local water agencies have long-term contracts for SWP water supplies. Brief profiles of contracting agencies, six in each annual issue, have appeared in the past three bulletins.

The first series of profiles, in Bulletin 132-83, featured Antelope Valley-East Kern Water Agency, Desert Water Agency, Devil's Den Water District, Oak Flat Water District, Plumas County Flood Control and Water Conservation District, and Santa Clara Valley Water District.

Featured in Bulletin 132-84 were: Alameda County Water District, Kern County Water District, Napa County Flood Control and Water Conservation District, Solano County Flood Control and Water Conservation District, The Metropolitan Water District of Southern California, and Tulare Lake Basin Water Storage District. Bulletin 132-85 presented profiles of Alameda County Flood Control and Water Conservation District, Zone 7, Castaic Lake Water Agency, Coachella Valley Water District, Crestline-Lake Arrowhead Water Agency, Dudley Ridge Water District, and San Bernardino Valley Municipal Water District.

The six agencies profiled in this bulletin are the County of Butte, the County of Kings, Empire West Side Irrigation District, Littlerock Creek Irrigation District, Palmdale Irrigation District, and San Gabriel Valley Municipal Water District. Of these six agencies, one is located in the Feather River area, two are in the San Joaquin Valley, and the three remaining agencies are in Southern California.

These contractors typify the diversity of both California and the SWP. Some, like Butte County, cover a large area while others, like Empire West Side Irrigation District, service a relatively small territory. Contractor uses for SWP water supplies vary as well. Most contractors use the water for agricultural, or municipal and industrial use; but one, County of Kings, will use its entitlement strictly for recreational purposes.

County of Butte

The County of Butte is located in the northeastern portion of California. Its 1,069,000 acres makes it the tenth largest SWP contracting agency by total area. It contains both valley and mountain regions; and in the foothill transition zone the Sacramento Valley slopes gently into the Sierra Nevada. The lowest elevation is under 100 feet, the highest is over 7,000 feet (near Summit Lake). The entire County has a population of approximately 160,970. Principal cities are Chico, Gridley, Oroville, and Paradise.

The Sacramento River forms the County's western boundary. The Feather River flows through the County; other principal streams include Big Chico Creek, Little Chico Creek, and Butte Creek. Among the smaller drainages are Clear Creek, Dry Creek, and Gold Run Creek.

Hot, dry summers and cool, wet winters typify the climate. Average annual rainfall ranges from 18 inches in the valley to 80 inches at the higher elevations. Snow falls at higher elevations, but very irregularly on the valley floor. From late fall through early spring heavy fog is common below 1,000 feet.

The County of Butte is one of the State's original 27 general law

counties, established by the Act of 1850. The Maidu Indians were living in the region when the first settlers -- gold miners and trappers -- came into the area. As gold mining waned, the County's economic base changed to agriculture and lumber. Recreation, already a part of the County's economy, was augmented by the completion of Lake Oroville, Thermalito Forebay, and Thermalito Afterbay in the late 1960s.

The three main sources of water in Butte County are local surface water purchased from numerous local water districts and PGandE, ground water, and SWP water from Lake Oroville. Butte County was the first agency in the Feather River Area to contract for SWP water (1963).

During the first years of the contract, Butte County acted as a wholesaler of SWP water to two retail water purveyors: Limesaddle Community Services District (LCSD) and California Water Service Company (CWSC). A subsequent contract amendment allows DWR to sell the County's entitlement water directly to the retailers, although LCSD has so far chosen not to purchase any SWP water. CWSC, which serves the City of Oroville, takes delivery of SWP water from Lake Oroville.

Under Water Code provisions, Butte County may acquire, develop, distribute, and sell water to County inhabitants. It may also acquire, construct, and manage a water system and all other works necessary for supplying water for County and residential use. To date, the County has chosen not to do so.

All SWP water is treated and delivered by CWSC directly to the consumer for domestic use. SWP deliveries to CWSC began in 1971. Since then about 300 acre-feet per year have been supplied to CWSC.

Water delivered by CWSC is principally used in urbanized areas. Residential customers account for most of the water use, although industrial use is significant.

County of Kings

The County of Kings, in the south central portion of the San Joaquin Valley, has a total area of 893,300 acres. Most of the area is flat, fertile farmland with elevations ranging from 200 to 300 feet. The western section of the county includes part of the Coast Range, with elevations reaching upwards of 3,000 feet.

Considered one of the top 20 agricultural counties in the United States, Kings County boasts four rivers -- the Kings, Tule, Kaweah, and Kern -- and a "closed" lake bed, all of which contribute to this designation. Terminus for three of the rivers is the Tulare Lake Basin in the south central portion of the County. The Kings River drains into the San Joaquin via Fresno Slough. Dams built on each of the rivers between 1947 and 1962 help control flooding and permit nearly continuous farming on the lake bed. The Tulare Lake Basin is considered "closed" because it has no outlet to the sea.

The climate is typical of Central Valley weather: sunny, dry, and warm. Summers are hot, dry, and relatively cloudless; winters are mild and semiarid with a fair amount of humidity. Ninety percent of all rainfall, about 6 to 8 inches annually, occurs during the months of November through April. There is considerable night fog during winter months. Severe freezing rarely occurs and in warmer areas of the County, no frost forms at all.

Kings County has a population of 84,900, about 70 percent higher than

the 1960 census of 49,954. The area is mainly farmland except for agricultural related business development around the Lemoore Naval Air Station. Hanford, the County seat, is the largest city in the area. Other communities include Lemoore, Corcoran, Armona, Stratford, and Avenal.

The County is authorized to enter into contracts with the State for the purchase of water, which it did with the SWP in 1967. Kings County took delivery of all 3,400 acre-feet of its entitlement in 1985. The County's entitlement to SWP water will reach its maximum, 4,000 acre-feet, in 1987. The County will use its SWP water solely for recreational use and will be the only SWP contractor to do so.

Four other SWP contractors (Devil's Den Water District, Dudley Ridge Water District, Empire West Side Irrigation District, and the Tulare Lake Basin Water Storage District) are entirely or partially located within the County of Kings. These districts serve the agricultural/municipal water needs of their respective areas. The weirs used by these districts to divert irrigation water were "informally" used by County residents for swimming and picnics. In the early 1960s, the County's planning commission wrote a recreation and park development plan. This plan included stabilizing the widely fluctuating water level in eight ponds created by weirs along the Kings River.

The development plan, instituted in 1968, called for the complete development of these eight ponds and improvements in two County parks during the ensuing 20 years. The County parks, Burris and Hickey, occupy 55 acres and 47 acres, respectively. The improvement to Burris Park consisted of developing a five-acre pond for fishing and swimming. The Hickey Park improvement plan, originally scheduled for 1986 implementation, calls for the addition of a reflective pool.

The park sites, in addition to Burris and Hickey parks, are located on the Kings River. These sites are: Laton-Kingston, Empire Weir #1, Dutch John Cut Weir, Empire Weir #2, Crescent Weir, Island Weir, Lemoore Weir, and Last Chance Weir.

Under prior water rights the total flow of the Kings River goes to the



Laton-Kingston Park, located along the Kings River, is one of several parks in Kings County which receive SWP water.

agricultural users. The County, therefore, requested a water supply from the SWP for its recreation plan. Since there is no practical way of conveying water from the California Aqueduct to the sites, the County entered into an exchange agreement with the Tulare Lake Basin Water Storage District (TLBWSD). The District was chosen because it too was a SWP contractor and it had rights to Kings River water. The County will exchange its Project water for the District's Kings River water.

TLBWSD will take delivery of the County's water by the same means it receives its contract water. Under the terms of the agreement, Kings County will have its SWP water delivered to the District and, in turn, will receive an equal amount of TLBWSD's Kings River allocation. Kings County, using existing weir facilities, will divert, store, and use Kings River water at its park sites. The County also will share losses with users upstream from the various points of diversion in the same manner as the District.

Empire West Side Irrigation District

Empire West Side Irrigation District (EWSID), in central Kings County, is adjacent to the northwest edge of the Tulare Lakebed. EWSID encompasses about 7,400 acres of nearly level lands at elevations of 190 to 210 feet. The only major stream in the area is the Kings River, which forms the District's eastern boundary.

Summers are hot and dry, and winters are mild with some frost. Average annual precipitation is about 8 inches. Fog is common during the winter. The population of the District is only about 50, and no significant industrial or urban development is anticipated.

EWSID was formed in 1931 from the older, larger Empire Ranch, under California Irrigation District Law, to control, distribute, and store water for its service area. The District obtains funds through water charges and ad valorem assessments of land. EWSID is governed by a Board of Directors elected at large by the landowners. The EWSID headquarters is in Stratford, about 2 miles east of the District boundary.

The economy of EWSID is based upon agriculture. For many years, all irrigable land (7,000 acres) has been irrigated when sufficient water is available. The principal crops grown are cotton and grain. The applied water demand ranges up to about 18,000 acre-feet per year. The District's main water supply comes from its water rights to Kings River runoff. The supply available from the Kings River varies widely from year to year, with very meager supplies in dry years and excess supplies during flood years. On the average, Kings River supplies meet about half of the irrigation requirements of the EWSID area. Privately owned ground water wells furnish a significant share of the remaining water needs, but the ground water is somewhat saline.

SWP water is used to supplement EWSID's other water sources. The District has contracted for an entitlement of 3,000 acre-feet per year of SWP water. Actual SWP water deliveries vary with conditions. In nearly half the years since SWP deliveries began in 1968, EWSID has used its full entitlement and taken delivery of an approximately equal amount of surplus or unscheduled water. In 1983 and 1984, EWSID took no SWP water because of abundant local supplies; in 1985, the District took delivery of 5,197 acre-feet of entitlement and carry-over water.

The District lies about 10 miles northeast of the California Aqueduct. Its southern boundary adjoins the Tulare Lake Basin Water Storage District (TLBWSD), another SWP contractor. EWSID water is conveyed from the California Aqueduct via

TLBWSD's Lateral A, in which EWSID owns a percentage share. An interior canal system is used to distribute SWP water and Kings River water through the District.

Littlerock Creek Irrigation District

Littlerock Creek Irrigation District (LCID) is 40 miles north of Los Angeles, in the southeast portion of Antelope Valley. Located along the Mojave Division of the California Aqueduct, LCID currently services an area of approximately 11,300 acres; its boundary encompasses an area of 43,300 acres. Twenty-six percent of the District's service area is irrigated land. Although there is potential for urban growth, the District is sparsely populated. Population within the District is less than 2,000; the largest subdivided tract has approximately 600 residents.

Gently sloping lands, with elevations ranging from 2,700 to 3,500 feet above sea level, characterize the terrain. Principal streams are Littlerock and Big Rock creeks, which flow north from the San Gabriel Mountains. Wide changes in climate -- hot summers, cold winters, strong winds, low humidity -- and scant rainfall (5 to 8 inches annually) are typical of the area.

LCID is the sole survivor of the six original Antelope Valley irrigation districts organized in the 1890s. A board of directors, elected by the registered voters in the District, governs LCID.

The District's primary function is to sell water to service-area customers for domestic uses and irrigation. Ground water, local surface water, and imported SWP supplies are the District's three main sources of water.

Ground water is supplied by the southern part of the Antelope Valley ground water basin. The quality of the ground water is such that no treatment is necessary for municipal or irrigation use. The 2,700 acre-foot Littlerock Dam/Reservoir is used for flood control and does not offer long-term carryover capacity. The dam was built jointly by the District and the Palmdale Water District in 1924. The reservoir has a capacity restriction for safety reasons. Under agreement, LCID has exclusive rights to the first 13 cfs reservoir inflow. Flow in excess of that is shared, 75 percent to Palmdale Water District and 25 percent to LCID.

LCID took its first delivery of SWP water in 1972 via the East Branch of the Aqueduct. In recent years the District has used little of its 2,300 acre-foot maximum entitlement. This is partly due to the steady decline of irrigated agriculture. All SWP water is delivered directly to the users for agricultural irrigation. Some SWP supplies may eventually be used in urban areas.

Palmdale Water District

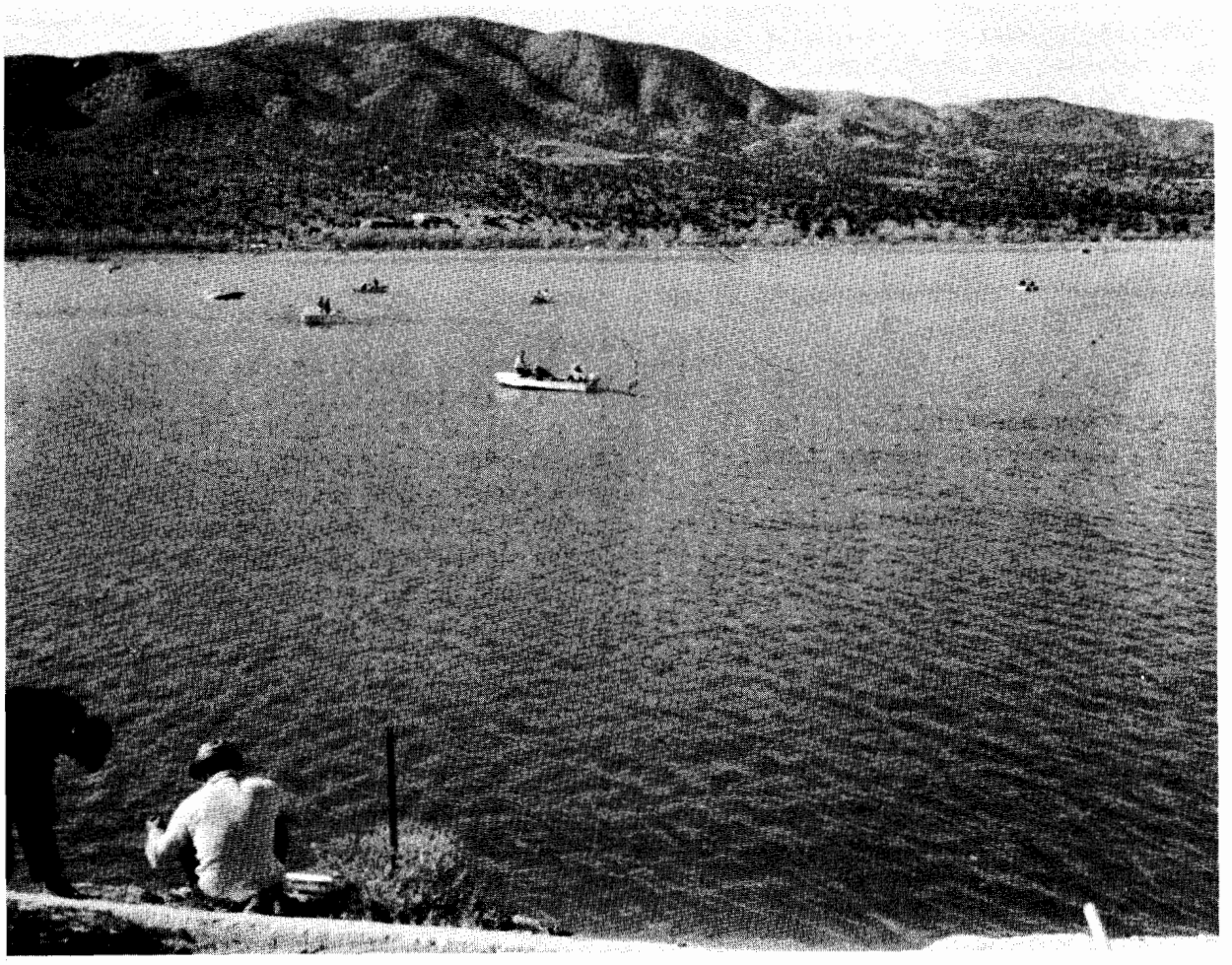
Palmdale Water District (PWD) is 40 miles north of Los Angeles. Formerly known as the Palmdale Irrigation District, the District was originally formed in 1918. PWD encompasses 73,900 acres, 33,000 acres of which are watershed lands in the Angeles National Forest. The City of Palmdale and adjoining urban areas comprise the primary service areas. The Palmdale area is experiencing rapid urban growth; service sites to the south and east of the primary service area were recently annexed. District population is up 46 percent from 1960, to 30,900, with most of the people living in the City of Palmdale. Most of the serviceable area is still uninhabited, but there is considerable potential for urban, commercial, and industrial development. Because of the District's size, available expansion space, and proximity to Los Angeles, continued population growth can reasonably be expected over the next decade.

The District is bordered on the south by the San Gabriel Mountains. Principal streams are Littlerock and Big Rock creeks. Elevations range from 2,500 to 4,000 feet. The terrain is characterized by gently sloping lands reaching to the foot of the San Gabriel Mountains.

Like the nearby Littlerock Creek Irrigation District, PWD's climate fluctuates widely. Hot summers, cold winters, strong winds, low humidity, and scant rainfall are typical of the climate. Average annual rainfall is 5 to 8 inches.

The District's primary function is to provide municipal water service to the City of Palmdale and surrounding areas. No agricultural deliveries are made. A five-member board of directors, elected at large with representatives from each division, governs the water district.

Ground water pumped from the southern portion of the Antelope Valley ground water basin is the District's main source of water. Although its contract established entitlements to SWP water beginning in 1972, the District didn't take its first delivery until 1985. Initial deliveries are made through treatment and distribution facilities of the Antelope Valley-East Kern Water Agency, which abuts the PWD service area. PWD is currently constructing a 12-million gallon per day domestic water treatment plant for SWP water.



Palmdale Water District's reservoir, Lake Palmdale, is used for recreation such as fishing. The reservoir will eventually store SWP water deliveries and act as forebay for the 12-million gallon per day water treatment plant now under construction.

The Littlerock Dam was jointly built by PWD and Littlerock Creek Irrigation District in 1924. Under agreement, Littlerock has exclusive rights to the first 13 cfs measured at point of inflow to the reservoir. Flow in excess of that is shared, 75 percent to PWD and 25 percent to Littlerock. Each district is entitled to 50 percent of the reservoir's storage capacity (current level is restricted for safety reasons). Littlerock Reservoir does not offer long-term carryover capacity.

Another facility used by PWD is the 4,200 acre-foot Lake Palmdale. The lake is currently being used as a recreational facility and for emergency water reserve.

San Gabriel Valley Municipal Water District

San Gabriel Valley Municipal Water District (SGVMWD) is in the San Gabriel Valley on the coastal plain of Southern California. There are three service areas in the District: the City of Sierra Madre, the City of Azusa, and the cities of Monterey Park and Alhambra. Those four cities constitute the 16,300 acres in the District and have a combined population of 175,800.

Because the three service areas of SGVMWD are in different regions in the San Gabriel Valley, elevations in the District range from 250 to 2,300 feet. The average annual rainfall throughout the District is approximately 18 inches. Typical climate for the region is described as a "mediterranean-type, subtropical climate," with hot, dry summers and mild, wet winters.

SGVMWD was established in 1959 under the Municipal Water District Act. The District's primary purpose is to obtain a supplemental water supply for its member cities. Although the District obtains the necessary water, the supply is not given directly to the member cities. SGVMWD instead uses the water for ground water replenishment. The only water source for this purpose is the SWP.

The District's Devil Canyon-Azusa Pipeline conveys SWP water to spreading grounds owned and operated by the Los Angeles County Flood Control District. There are two turnouts from the pipeline, one north of Azusa and one near San Dimas. Azusa and Monterey Park pump from the San Gabriel Basin, Sierra Madre from the Raymond Basin, and Alhambra pumps from both basins.

Both basins are recharged by precipitation, surface inflow, subsurface inflow, reclaimed waste water, and imported water from the SWP and the Colorado River.

A Watermaster is responsible for management of the San Gabriel Basin. The San Gabriel Watermaster consists of nine members elected from the area. The Raymond Basin is managed by a Watermaster (DWR) assisted by a court appointed Advisory Board.

The Watermaster annually establishes the safe yield of each basin for the next five years, then notifies each water agency of its respective share. If an agency exceeds its share, it is assessed for replacement water. The Watermaster distributes SWP water from SGVMWD to the District's member cities.

Since service began in 1974, SWP deliveries to SGVMWD have averaged about 5,000 acre-feet per year. The District's maximum annual entitlement to SWP water is 28,800 acre-feet.

APPENDIX B
DATA AND COMPUTATIONS USED IN DETERMINING WATER CHARGES FOR 1987

APPENDIX B

DATA AND COMPUTATIONS USED IN DETERMINING WATER CHARGES FOR 1987

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APPENDIX B
DATA AND COMPUTATIONS USED IN DETERMINING WATER CHARGES FOR 1987

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", which provides that:

"...All such statements shall be accompanied by the latest revised copies of the document amendatory to Article 22 and of Tables B, C, D, E, F, and G of this contract, together with such other data and computations used by the State in determining the amounts of the above charges as the State deems appropriate."

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 1987 and is based upon established data, both known and projected, about the SWP as of June 30, 1986. The computational procedures and interrelationships between tabulations in this appendix are outlined in Figure B-1. All B-tables shown in Figure B-1 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 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:

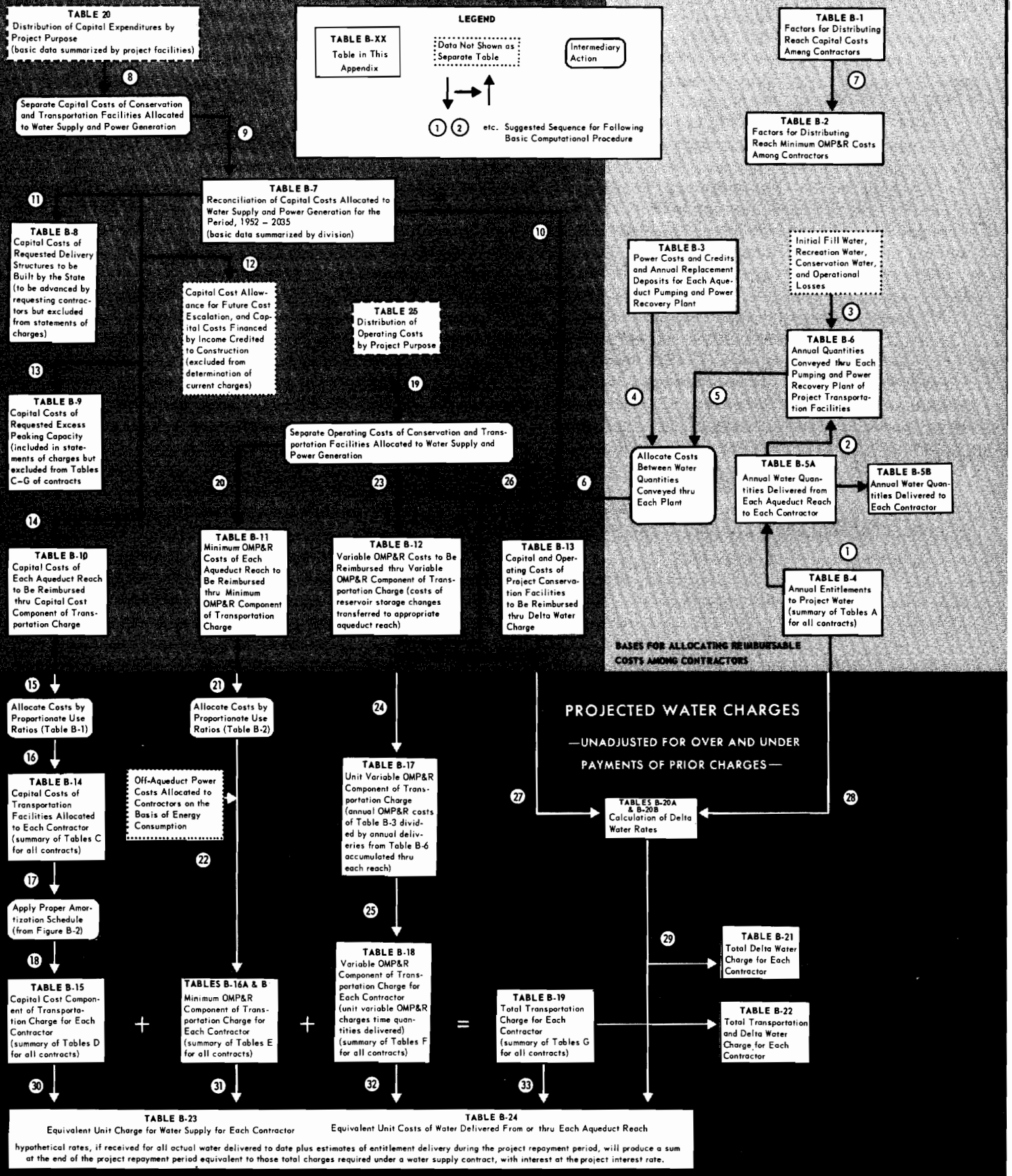
Project Conservation Facilities

- 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 California Aqueduct from the Delta to Dos Amigos Pumping Plant; and
- San Luis Dam, Reservoir, and Pumping-Generating Plant.

Project Transportation Facilities

- Grizzly Valley Pipeline;
- North Bay Aqueduct;
- South Bay Aqueduct (including Del Valle Dam and Lake Del Valle);

FIGURE B-1: RELATIONSHIP OF DATA USED TO SUBSTANTIATE STATEMENTS OF CHARGES



- 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

- 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.

Composition and Timing of Water Charges

As detailed in Figure B-2, 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.

The Transportation Charges do not include certain credits from contractor payments under supplemental agreements including the following:

- payments for State construction of requested delivery structures that exceed actual construction costs of such structures; and

- payments for State construction of requested excess capacity in Project transportation facilities that exceed actual construction costs of such excess capacity.

Article 28 of the Standard Provisions provides that Transportation Charges be redetermined each year. Transportation

FIGURE B-2: COMPOSITION OF DELTA WATER CHARGE AND TRANSPORTATION CHARGE

DELTA WATER 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 6. Credits for a portion of Hyatt-Thermalito power generation
	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. Costs and credits for San Luis Reservoir storage changes 6. Value of power used and generated by San Luis Pumping-Generating Plant
TRANSPORTATION CHARGE	CAPITAL COST COMPONENT	1. Planning, design, right of way, and construction costs of transportation facilities 2. O&M costs for newly constructed transportation facilities prior to initial operation 3. Activation costs for newly constructed transportation facilities 4. Power costs allocated to initial filling of Southern California reservoirs 5. Capitalized O&M costs (major repair work, etc.) for transportation facilities
	MINIMUM OMP&R COMPONENT	1. Direct O&M costs a. Headquarters and field divisions (portion) b. Insurance and FERC costs (portion) 2. General O&M costs allocated 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 refill Southern California reservoirs (storage changes) 4. Power costs for pumping water to replenish losses from transportation facilities 5. Other power costs a. Station service at transportation facility power and pumping plants b. Transmission service costs related to "backbone" 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
	VARIABLE OMP&R COMPONENT	1. Power purchase costs a. Capacity b. Energy c. Pine Flat bond service, O&M, and transmission costs allocated to aqueduct pumping plants 2. Alamo, Devil Canyon, Warne, and Castaic power generation credited at the power plant reach and charged to aqueduct pumping plants 3. Hyatt-Thermalito and Thermalito Diversion Dam Powerplant generation charged to aqueduct pumping plants (credits for this generation are are reflected in the Delta Water Rate) 4. Replacement deposits for equipment at pumping plants and power plants 5. Credits from sale of excess SWP system power

Charges for prior years through 1985 do not equal those amounts actually paid by contractors. All differences between actual payments and amounts computed in this redetermination are accumulated, with interest credits or debits, and through a "one-shot" adjustment, are deducted from or added to the redetermined amounts of the Transportation Charge to be paid by respective contractors during 1987. An exception to this procedure is adjustment to the capital cost component associated with agricultural use by Kern County Water Agency, Devil's Den Water District, Dudley Ridge Water District, Empire West Side Irrigation District, Oak Flat Water District, and Tulare Lake Basin Water Storage District. Differences between actual payments and amounts computed in this redetermination are amortized for these water contractors and paid during the remaining years of their 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 with the Statement of Charges.

The formula for computing the Delta Water Rate, Article 22(f) of the Standard Provisions, provides that all adjustments for prior overpayments or underpayments of the 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 period. This report includes a redetermination of the Delta Water Rate for 1987.

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:

- o advances of funds pursuant to Article 24(d) of the Standard Provisions, for excess capacity constructed by the State at the request of contractors; and

- o 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.

- o 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-24. Net revenues resulting from "noncontractor" service are applied as described in Bulletin 132-71, page 24.

- o 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-6, 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 Aqueduct, (2) the South Bay Aqueduct, (3) the California Aqueduct from the Delta to the Coastal Branch, and (4) the Coastal Branch.

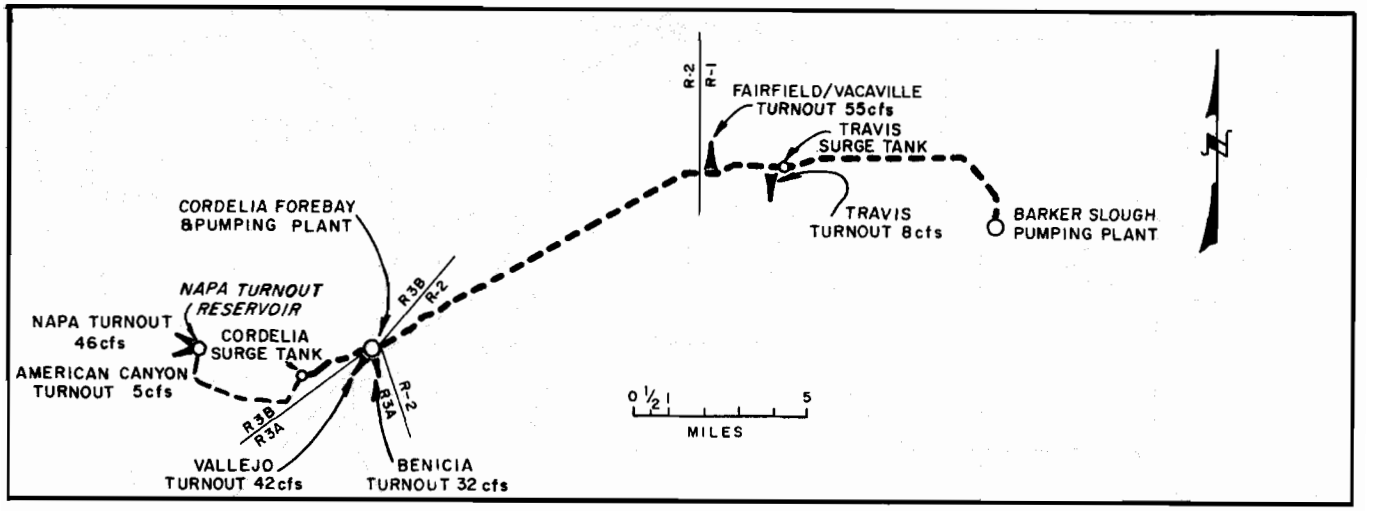
Figure B-3 shows a redetermination of proportionate use ratios for the North Bay Aqueduct. The redetermination reflects contract amendments executed in October 1985 (Solano) and February 1986 (Napa) to: (1) transport non-Project water for delivery to the City of Vallejo, (2) provide excess peaking capacity for Solano County Flood Control and Water Conservation District, and (3) include capacity at Cordelia Pumping Plant for a portion of Solano's water. (See "Contract Amendments", Chapter III.)

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.

Table B-1 presents the reach ratios

FIGURE B-3: DETERMINATION OF PROPORTIONATE USE OF EACH REACH OF THE NORTH BAY AQUEDUCT



Reach/Item	Napa County Flood Control and Water Conservation District		Solano County Flood Control and Water Conservation District		North Bay Aqueduct Totals	
	Acre-Feet Per Year	Cubic Feet Per Second	Acre-Feet Per Year	Cubic Feet Per Second	Acre-Feet Per Year	Cubic Feet Per Second
REACH 1: BARKER SLOUGH THRU FAIRFIELD/VACAVILLE TURNOUT						
Maximum Entitlement Delivered from Reach	0	0.00000	19,200.0	35.00712	19,200.0	35.00712
Estimated Operational Losses within Reach	3.3	0.00543	7.7	0.01268	11.0	0.01811
Capacity Provided in Reach						
For Delivery of Entitlements	25,000.0	45.58219	59,287.0(a	108.09808(b	84,287.0(a	153.68027(b
For Compensation of Operational Losses	21.4	0.03522	28.6	0.04708	50.0	0.08230
Subtotal	25,021.4	45.61741	59,315.6(a	108.14516(b	84,337.0(a	153.76257(b
For Requested Excess Peaking	0	0.00000	0	20.00000	0	20.00000
Total	25,021.4	45.61741	59,315.6(a	128.14516(b	84,337.0(a	173.76257(b
Proportionate Use for Allocation of Capital Costs						
Ratios of Reach Use (from Capacity Subtotals)	0.29668354	0.29667435	0.70331646	0.70332565	1.00000000	1.00000000
Average of Ratios	0.29667895		0.70332105		1.00000000	
Proportionate Use for Allocation of Minimum OMP&R						
Ratios of Reach Use (from Capacity Totals)	0.29668354	0.26252725	0.70331646	0.73747275	1.00000000	1.00000000
Average of Ratios	0.27960540		0.72039460		1.00000000	
REACH 2: FAIRFIELD/VACAVILLE TURNOUT TO CORDELIA FOREBAY						
Maximum Entitlement Delivered from Reach	0	0.00000	0	0.00000	0	0.00000
Estimated Operational Losses within Reach	11.1	0.01827	17.9	0.02946	29.0	0.04773
Capacity Provided in Reach						
For Delivery of Entitlements	25,000.0	45.58219	40,087.0(a	73.09096(b	65,087.0(a	118.67315(b
For Compensation of Operational Losses	18.1	0.02979	20.9	0.03440	39.0	0.06419
Subtotal	25,018.1	45.61198	40,107.9(a	73.12536(b	65,126.0(a	118.73734(b
For Requested Excess Peaking	0	0.00000	0	0.00000	0	0.00000
Total	25,018.1	45.61198	40,107.9(a	73.12536(b	65,126.0(a	118.73734(b
Proportionate Use for Allocation of Capital Costs						
Ratios of Reach Use (from Capacity Subtotals)	0.38414919	0.38414184	0.61585081	0.61585816	1.00000000	1.00000000
Average of Ratios	0.38414551		0.61585449		1.00000000	
Proportionate Use for Allocation of Minimum OMP&R						
Ratios of Reach Use (from Capacity Totals)	0.38414919	0.38414184	0.61585081	0.61585816	1.00000000	1.00000000
Average of Ratios	0.38414551		0.61585449		1.00000000	
REACH 3A: CORDELIA FOREBAY THRU BENICIA AND VALLEJO TURNOUTS						
Maximum Entitlement Delivered from Reach	0	0	40,087.0(a	73.09096(b	40,087.0(a	73.09096(b
Estimated Operational Losses within Reach	0	0	3.0	0.00494	3.0	0.00494
Capacity Provided in Reach						
For Delivery of Entitlements	0	0	40,087.0(a	73.09096(b	40,087.0(a	73.09096(b
For Compensation of Operational Losses	0	0	3.0	0.00494	3.0	0.00494
Subtotal	0	0	40,090.0(a	73.09590(b	40,090.0(a	73.09590(b
For Requested Excess Peaking	0	0	0	0.00000	0	0.00000
Total	0	0	40,090.0(a	73.09590(b	40,090.0(a	73.09590(b
Proportionate Use for Allocation of Capital Costs						
Ratios of Reach Use (from Capacity Subtotals)	0	0	1.00000000	1.00000000	1.00000000	1.00000000
Average of Ratios	0		1.00000000		1.00000000	
Proportionate Use for Allocation of Minimum OMP&R						
Ratios of Reach Use (from Capacity Totals)	0	0	1.00000000	1.00000000	1.00000000	1.00000000
Average of Ratios	0		1.00000000		1.00000000	
REACH 3B: CORDELIA FOREBAY THRU NAPA TURNOUT RESERVOIR						
Maximum Entitlement Delivered from Reach	25,000.0	45.58219	0	0	25,000.0	45.58219
Estimated Operational Losses within Reach	7.0	0.01152	0	0	7.0	0.01152
Capacity Provided in Reach						
For Delivery of Entitlements	25,000.0	45.58219	0	0	25,000.0	45.58219
For Compensation of Operational Losses	7.0	0.01152	0	0	7.0	0.01152
Subtotal	25,007.0	45.59371	0	0	25,007.0	45.59371
For Requested Excess Peaking	0	0.00000	0	0	0	0.00000
Total	25,007.0	45.59371	0	0	25,007.0	45.59371
Proportionate Use for Allocation of Capital Costs						
Ratios of Reach Use (from Capacity Subtotals)	1.00000000	1.00000000	0	0	1.00000000	1.00000000
Average of Ratios	1.00000000		0		1.00000000	
Proportionate Use for Allocation of Minimum OMP&R						
Ratios of Reach Use (from Capacity Totals)	1.00000000	1.00000000	0	0	1.00000000	1.00000000
Average of Ratios	1.00000000		0		1.00000000	

a) Includes 17,287 acre-feet of non-Project water to be delivered to the City of Vallejo (treated as entitlement water in the determination of proportionate use factors under Amendment No. 10 to the water supply contract with Solano County Flood Control and Water Conservation District).
b) Includes 31.52 cfs for delivery of non-Project water to the City of Vallejo, as described in footnote a).

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.) The Article 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 power plant. 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 1984 and amounts projected from 1985 through 2035 are based upon a revised replacement schedule. This schedule was updated in 1982. 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. Beginning May 1, 1973, the rate structure for surplus water service was significantly changed. 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 of each water supply contract.

Table B-5A shows actual and projected water quantities delivered from each aqueduct reach to each contractor. Projected deliveries for 1986 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 historic deliveries to annual entitlements, see Table 3 in Chapter II.)

Table B-5B presents a summary of actual and projected annual water quantities delivered or to be delivered to each contractor.

Table B-6 summarizes the annual water quantities conveyed, or to be conveyed, through each aqueduct pumping plant or power plant for each of the following functions:

- made available to contractors at down-aqueduct delivery structures ("Deliveries -- Water Supply");
- required to initially fill down-aqueduct reaches and reservoirs, or for repayment of preconsolidation water used during construction ("Initial Fill Water");
- delivered to down-aqueduct recreation developments or used for fish and wildlife mitigation or enhancement ("Deliveries -- Recreation");
- lost through evaporation and seepage from all down-aqueduct reaches ("Operational Losses"); and
- placed in down-aqueduct reservoir storage after initial filling of the reservoirs ("Reservoir Storage Changes"). 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 between 1979 and 1982 (as negative amounts). The exception is at Banks Delta Pumping Plant, where the ground water additions and withdrawals are included in "Conservation Water".

In addition, Table B-6 summarizes the following under the heading "Conservation Water" (Column 20):

- 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.

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 Delta Pumping Plant (a joint transportation-conservation facility) that are allocated to the conveyance of annual "conservation water" quantities, are transferred to the capital costs of San Luis Reservoir (during initial fill) or to the minimum OMP&R costs of San Luis Reservoir (subsequent to initial fill). In years of net storage withdrawal from San Luis Reservoir, a portion of the minimum OMP&R cost of the reservoir is transferred to the variable OMP&R cost of the Banks Delta Pumping Plant. This transfer is equal to the variable OMP&R cost per acre-foot of delivery through the Banks Delta Pumping Plant for that year, multiplied by the acre-feet of deliveries derived from San Luis Reservoir storage for that year.

Bases for Reimbursable Costs

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, 1985; future

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	78.5	100.0
Antelope Dam and Lake	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
North Bay Aqueduct	100.0	100.0	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
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

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 power plants and switch yards.
b) Percentage shown consists of 48.0 percent recreation and 25.8 percent flood control.
c) Percentage shown consists of 44.9 percent recreation and 33.1 percent flood control.

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 of funds for the orginally 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 power plants 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 5 percent per year through 1988.

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) San Luis power credits. Included in Table B-13 are credits applied to the reimbursable capital costs of the Project conservation facilities pursuant to negotiated settlements concerning the magnitude of incurred planning costs for the period 1952 through 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 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 1987. 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 power plants 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. These estimated components, subsequently adjusted for prior overpayments or underpayments, are set forth in Table D of the respective water supply contracts. Credits for advance payment for excess capacity that exceeds actual costs of such capacity are applied to reduce the payment amounts set forth in Table D, but are not included in Table B-15. Both Table B-15 and Table D for the six contractors down-aqueduct from Devil Canyon and Castaic power plants include the debt service payments due under the Devil Canyon-Castaic Contract.

Table B-16A summarizes the minimum OMP&R components of the Transportation Charge for each year of the Project repayment period. 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.

Both Table B-16A and Table E for the six contractors down-aqueduct from Devil Canyon and Castaic power plants 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 the Agency, with the remaining reach costs allocated by application of the proportionate-use ratios:

Year	Direct Charge	Year	Direct Charge
1969	$ 46,510	1981	$ 78,553
1970	46,302	1982	90,020
1971	139,976	1983	92,490
1972	94,751	1984	100,953
1973	71,885	1985	149,834
1974	99,075	1986	148,836
1975	125,229	1987	182,047
1976	137,770	1988	183,073
1977	120,371	1989	166,236
1978	157,932	1990	166,364
1979	118,924	1991	166,548
1980	155,653	1992	166,628
		Total	$3,005,960

Table B-16B projects the annual charges for Off-Aqueduct power facilities allocated to each water contractor. 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 for 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 at the end of the year are refunded to the contractors in the next year.

The following tabulation summarizes Off-Aqueduct power facility charges for 1985. The net charges for 1985 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	1985
Charges	
Reid Gardner	$100,034,139
Bottle Rock	20,453,267
South Geysers	7,259,046
Total	$127,746,452
Credits	
Off-Aqueduct Power Sales	$ 9,568,050
Total	$ 9,568,050
Net Off-Aqueduct Power Charges	$118,178,402

The following tabulation shows projected charges for Off-Aqueduct power facilities and an amount equal to 25 percent of annual bond service for 1986 and each year thereafter.

YEAR	TOTAL ANNUAL COST	25% of BOND SERVICE
1986	131,129,499	13,454,272
1987	139,579,422	13,449,081
1988	148,734,027	13,595,768
1989	151,824,555	15,083,164
1990	161,027,532	15,092,164
1991	162,651,182	15,092,223
1992	161,614,678	15,098,226
1993	160,524,680	15,093,530
1994	156,211,870	15,093,705
1995	159,969,751	15,089,193
1996	159,963,844	15,088,011
1997	159,952,701	15,085,783
1998	157,925,138	15,084,102
1999	149,475,385	15,083,195
2000	148,138,764	15,078,630
2001	143,238,001	15,074,513
2002	138,351,953	15,073,439
2003	133,451,040	15,069,485
2004	126,104,421	15,075,185
2005	123,735,556	15,079,128
2006	118,874,585	15,083,453
2007	114,042,286	15,093,606
2008	109,118,505	15,085,569
2009	102,777,329	15,078,363
2010	99,271,394	15,069,885
2011	94,377,621	15,068,160
2012	89,823,544	15,134,472
2013	58,464,350	6,063,192
2014	58,544,228	6,079,168
2015	30,476,897	3,063,232
2016	23,620,607	2,090,350
2017	12,622,909	0
2018	13,168,857	0
2019	6,768,976	0
2020	0	0
2021	0	0
2022	0	0

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. A further adjustment is made the following year based upon actual entitlement water deliveries.

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.

Pumping Plant	kWh per acre-foot (a at Plant	Cumulative From Delta
North Bay Interim(b	515	515
Barker Slough	184	184
Cordelia-Solano	357	541
Cordelia-Napa	549	733
Banks Delta	296	296
South Bay	797	1,093
Del Valle	72	1,165
Dos Amigos	138	434
Las Perillas	77	511
Badger Hill	200	711

Buena Vista	242	676
Wheeler Ridge	295	971
Wind Gap	639	1,610
Edmonston	2,236	3,846
Pearblossom	703	4,549
Oso	280	4,126

a) Includes transmission losses
b) In service through 1987

Table B-17 presents a summary of actual and projected total variable OMP&R costs for each acre-foot of water conveyed through each aqueduct pumping plant and power plant for each year of the Project repayment period. 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 as shown below:

		Pumping Plant	
Year	Agency[a]	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

a) 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.

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 power plants 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 1987, in accordance with the amended Articles 22(e) and 22(g) of 29 contracts. Under the amended articles, future construction and operating costs of each additional and supplemental conservation facility will be included in the calculation of the rate in years when the State first incurs major construction costs. However, no costs of future conservation facilities are projected in the calculation of 1987 water charges.

One contract was not amended by the July 1, 1986 billing date for 1987 charges (Solano County Flood Control and Water Conservation District). The Delta Water Rate and future Delta Water Charges to this contractor are based upon determinations made under original provisions of the water supply contract.

Table B-20B shows the portion of the 1986 Delta Water Rate from Table B-20A that repays each Project conservation facility.

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.

Total Water Charges

Table B-22 summarizes total annual charges to each contractor (the sum of the Transportation Charge in Table B-19 and the Delta Water Charge in Table B-21).

Equivalent Total Water Charges

Table B-23 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 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; they also include an amount under the Transportation minimum OMP&R component for Off-Aqueduct power facilities. The Table B-23 equivalent unit Delta Water Charges are greater than those in Table B-20A because current estimates of future entitlement water service are appreciably less than the amounts shown in Table A for most contractors.

Equivalent Water Costs by Reach

Table B-24 presents a summary of the equivalent unit transportation cost of conveying entitlement water through respective aqueduct reaches of the Project transportation facilities. These unit costs provide the basis of charges assessed (1) for "extra service" (such as for delivery of entitlements down-aqueduct from a contractor's turnout) and, (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. The cumulative unit conveyance costs shown for reaches in Table B-24 do not necessarily equal the equivalent unit Transportation Charges to contractors served from such reaches. This is because the unit charges of Table B-23 account for the rate of water demand buildup and cost allocation factors of the individual contractors, whereas the unit costs of Table B-24 meld the effect of the respective buildups and

allocation criteria of all contractors whose entitlements are conveyed through a given reach.

Surplus Water Service

Surplus water has been delivered from 1968 through 1985, except for the drought year of 1977.

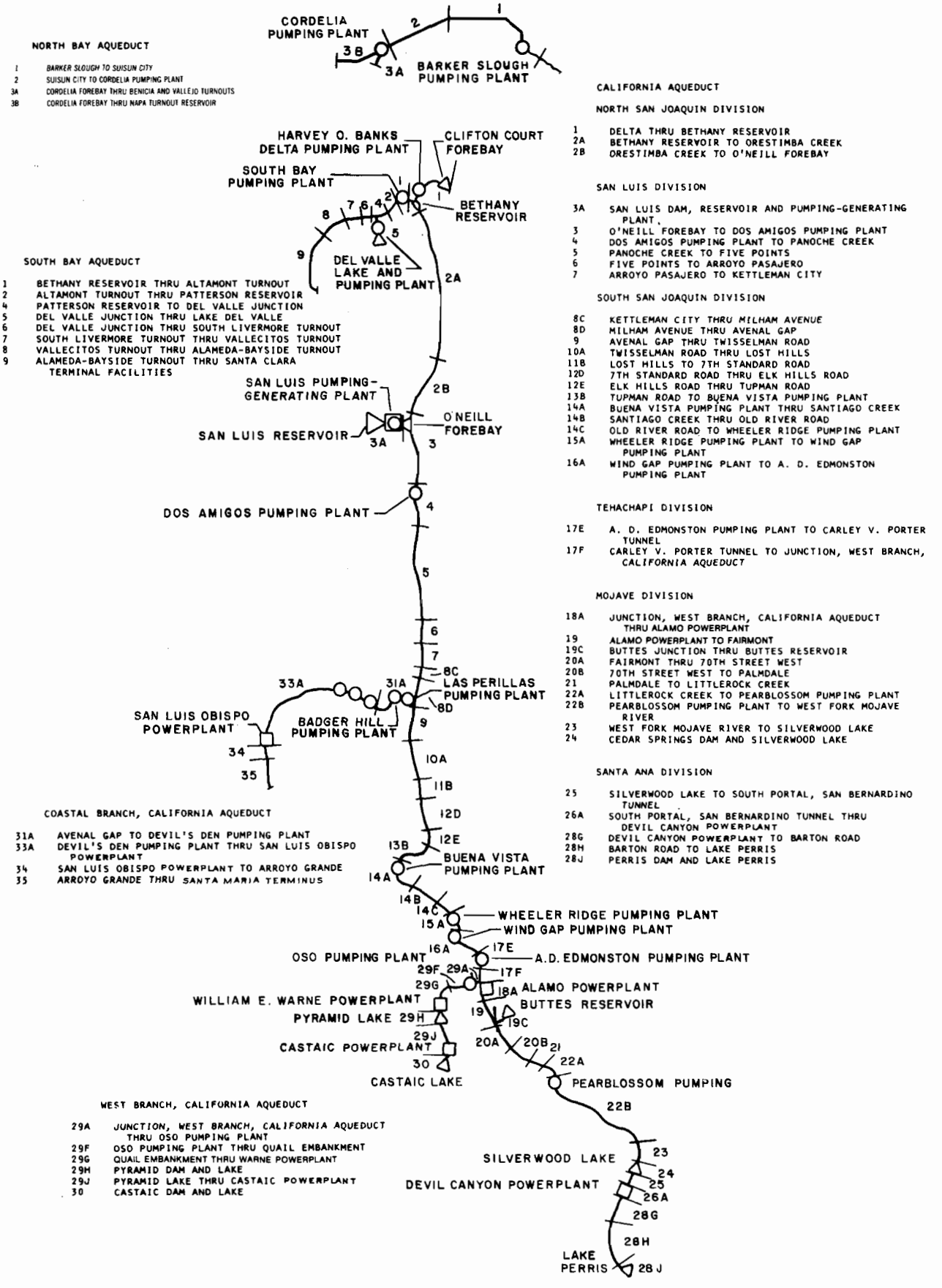
Table B-25 shows the quantities of surplus water delivered to long-term contractors during the period of May 1, 1973 through December 31, 1985.

Table B-26 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-25.

Table B-27 shows the actual charges to each contractor for delivery of the surplus water quantities shown in Table B-25. The method of determining these charges is discussed in Bulletin 132-77, page 117.

FIGURE B-6: REPAYMENT REACHES AND DESCRIPTIONS

PROJECT TRANSPORTATION FACILITIES



NORTH BAY AQUEDUCT

1 BARKER SLOUGH TO SUISUN CITY
2 SUISUN CITY TO CORDELIA PUMPING PLANT
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

Table B-1 begins on next page.

TABLE B-1: FACTORS FOR DISTRIBUTING

Reach No.	Reach Description	NORTH BAY AREA		SOUTH BAY AREA				TOTAL
		Napa County FC&WCD	Solano County FC&WCD	Alameda County FC&WCD Zone 7	Alameda County Water District	Santa Clara Valley Water District	Future Contractor	
	North Bay Aqueduct							
1	*Barker Slough thru Fairfield/Vacaville Turnout*	.29667895	.70332105					1.00000000
2	Fairfield/Vacaville Turnout to Cordelia Forebay	.38414551	.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*			.22599612	.20663022	.49237698	.07499668	1.00000000
2	Altamont Turnout thru Patterson Reservoir			.22599657	.20663060	.49237783	.07499500	1.00000000
4	Patterson Reservoir to Del Valle Junction			.19504794	.21450018	.51113249	.07931939	1.00000000
5	Del Valle Junction thru Lake Del Valle			.14436367	.12972254	.33715573	.38875806	1.00000000
6	Del Valle Junction thru South Livermore Turnout			.14599918	.21144710	.50574745	.13680627	1.00000000
7	South Livermore Turnout thru Vallecitos Turnout				.25176680	.60218448	.14604872	1.00000000
8	Vallecitos Turnout thru Alameda-Bayside Turnout				.06294980	.72065355	.21639665	1.00000000
9	Alameda-Bayside Turnout thru Santa Clara Terminal Facilities					1.00000000		1.00000000
	California Aqueduct							
1	Delta Thru Bethany Reservoir			.00954802	.00872977	.02080260	.00342519	— — —

Reach No.	Reach Description	CENTRAL COASTAL AREA		SOUTHERN				
		San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency
	California Aqueduct							
1	*Delta Thru Bethany Reservoir*	.00533047	.00983404	.02939503	.00890866	.00528393	.00133628	.00871425
2A	Bethany Reservoir to Orestimba Creek	.00557252	.01028060	.03072975	.00931319	.00552151	.00139638	.00910607
2B	Orestimba Creek to O'Neill Forebay	.00557864	.01029191	.03076360	.00932344	.00552915	.00139831	.00911867
3	O'Neill Forebay to Dos Amigos Pumping Plant	.00557758	.01028995	.03075777	.00932168	.00552856	.00139816	.00911771
4	Dos Amigos Pumping Plant to Panoche Creek	.00557646	.01028790	.03075165	.00931982	.00552794	.00139801	.00911670
5	Panoche Creek to Five Points	.00557506	.01028534	.03074401	.00931751	.00552717	.00139781	.00911543
6	*Five Points to Arroyo Pasajero*	.00557297	.01028147	.03073244	.00931400	.00552602	.00139750	.00911351
7	Arroyo Pasajero to Kettleman City	.00557229	.01028022	.03072873	.00931287	.00552565	.00139740	.00911289
8C	Kettleman City thru Milham Avenue	.00557143	.01027864	.03072405	.00931145	.00552517	.00139729	.00911211
8D	Milham Avenue thru Avenal Gap	.00568653	.01049097	.03135878	.00950380	.00564073	.00142650	.00930269
9	Avenal Gap thru Twisselman Road			.03437577	.01041612	.00618845	.00156502	.01020599
10A	Twisselman Road thru Lost Hills			.03492681	.01058510	.00628966	.00159061	.01037292
11B	Lost Hills to 7th Standard Road			.03848657	.01166387	.00694140	.00175542	.01144773
12D	7th Standard Road thru Elk Hills Road			.04046660	.01226391	.00730484	.00184732	.01204709
12E	Elk Hills Road thru Tupman Road			.04052108	.01228043	.00731580	.00185010	.01206514
13B	Tupman Road to Buena Vista Pumping Plant			.04397523	.01332721	.00794772	.00200992	.01310729
14A	Buena Vista Pumping Plant thru Santiago Creek			.04618687	.01399742	.00835456	.00211281	.01377821
14B	Santiago Creek thru Old River Road			.04702647	.01425185	.00851020	.00215219	.01403490
14C	Old River Road to Wheeler Ridge Pumping Plant			.04846556	.01468794	.00877627	.00221947	.01447369
15A	Wheeler Ridge Pumping Plant to Wind Gap Pumping Plant			.04927653	.01493368	.00892667	.00225752	.01472172
16A	Wind Gap Pumping Plant to A.D. Edmonston Pumping Plant			.05113509	.01549688	.00927017	.00234438	.01528821
17E	A.D. Edmonston Pumping Plant to Carley V. Porter Tunnel			.05355379	.01622984	.00971819	.00245767	.01602709
17F	Carley V. Porter Tunnel to Junction, West Branch, Calif. Aqueduct			.05366827	.01626453	.00973908	.00246295	.01606154
18A	Junction, West Branch, Calif. Aqueduct thru Alamo Powerplant			.13238112		.02399390	.00606795	.03957043
19	Alamo Powerplant to Fairmont			.13237766		.02399451	.00606811	.03957141
19C	Buttes Junction thru Buttes Reservoir			1.00000000				
20A	Fairmont thru 70th Street West			.06847930		.02576425	.00651573	.04249001
20B	70th Street West to Palmdale			.02276024		.02702917	.00683555	.04457607
21	Palmdale to Littlerock Creek			.02318952		.02754717	.00696651	.04543034
22A	Littlerock Creek to Pearblossom Pumping Plant			.01181870		.02794143	.00706621	.04608044
22B	Pearblossom Pumping Plant to West Fork Mojave River					.02827552	.00715074	.04663153
23	West Fork Mojave River to Silverwood Lake					.00324449	.00818122	.00535117
24	Cedar Springs Dam and Silverwood Lake					.01024605	.01251569	.01690478
25	Silverwood Lake to South Portal, San Bernardino Tunnel							
26A	South Portal, San Bernardino Tunnel thru Devil Canyon Pwp.							
28G	Devil Canyon Powerplant to Barton Road							
28H	Barton Road to Lake Perris							
28J	Perris Dam and Lake Perris							
29A	Junction, West Branch, Calif. Aqueduct thru Oso Pumping Plant				.02736564			
29F	Oso Pumping Plant thru Quail Embankment				.02736563			
29G	Quail Embankment thru Warne Powerplant				.02736564			
29H	Pyramid Dam and Lake				.02646380			
29J	Pyramid Lake thru Castaic Powerplant				.02736563			
30	Castaic Dam and Lake				.02637131			
31A	Avenal Gap to Devil's Den Pumping Plant	.10560302	.19482503					
33A	Devil's Den Pumping Plant thru San Luis Obispo Powerplant	.35150790	.64849210					
34	San Luis Obispo Powerplant to Arroyo Grande	.24688802	.75311198					
35	Arroyo Grande thru Santa Maria Terminus	.18022524	.81977476					

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	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District
					Municipal and Industrial	Agricultural			
California Aqueduct									
1	.00377824	.01707931	.00088687	.00254710	.02742073	.30633442	.00090702	.00167139	.03505306
2A	.00394038	.01781205	.00092491	.00266276	.02864588	.31948963	.00094755	.00174305	.03655686
2B	.00395099	.01786013	.00092740	.00266569	.02869070	.32034362	.00094904		.03665560
3	.00395208	.01786513	.00092766	.00266517	.02868917	.32043064	.00094899		.03666585
4	.00395323	.01787039	.00092794	.00266463	.02868756	.32052214	.00094893		.03667664
5	.00395466	.01787694	.00092828	.00266396	.02868556	.32063639	.00094886		.03669011
6	.00395684	.01788685	.00092879	.00266296	.02868253	.32080926	.00094875		.03671048
7	.00395753	.01789003	.00092896	.00266264	.02868156	.32086471	.00094872		.03671701
8C	.00395842	.01789405	.00092918	.00266223	.02868032	.32093468	.00094867		.03672526
8D	.00404591	.01828966		.00271722	.02928492	.32802221			.01821042
9					.03214521	.32838224			
10A					.03267760	.31755652			
11B					.03609912	.24768443			
12D					.03801001	.20879251			
12E					.03807068	.20769413			
13B					.01464596	.16664965			
14A					.00622935	.13374077			
14B					.00634719	.11790931			
14C					.00654829	.09078926			
15A					.00666217	.07549599			
16A					.00692172	.04047416			
17E					.00213551				
31A	.07364766			.05046239		.57546190			

Reach No.	CALIFORNIA AREA								
	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	TOTAL
1	.00049187	.01101303	.00369180	.02363192	.00650449	.00398446	.43940271	.00429334	1.00000000
2A	.00051421	.01151300	.00385943	.02469456	.00679800	.00416362	.45932579	.00448830	1.00000000
2B	.00051477	.01152575	.00386368	.02472869	.00680672	.00416938	.45985088	.00449324	1.00000000
3	.00051469	.01152359	.00386296	.02472605	.00680580	.00416893	.45976950	.00449238	1.00000000
4	.00051459	.01152131	.00386218	.02472327	.00680482	.00416846	.45968394	.00449149	1.00000000
5	.00051448	.01151846	.00386122	.02471980	.00680361	.00416788	.45957709	.00449037	1.00000000
6	.00051427	.01151416	.00385978	.02471455	.00680178	.00416698	.45941542	.00448869	1.00000000
7	.00051421	.01151278	.00385931	.02471286	.00680118	.00416671	.45936358	.00448816	1.00000000
8C	.00051414	.01151103	.00385874	.02471073	.00680044	.00416634	.45929816	.00448747	1.00000000
8D	.00052475	.01174889	.00393847	.02522753	.00694206	.00425349	.46880430	.00458017	1.00000000
9	.00057523	.01287942	.00431739	.02767698	.00761389	.00466647	.51396901	.00502081	1.00000000
10A	.00058444	.01308595	.00438660	.02812958	.00773752	.00474279	.52223261	.00510129	1.00000000
11B	.00064401	.01442004	.00483371	.03104405	.00853455	.00523416	.57558975	.00562119	1.00000000
12D	.00067713	.01516215	.00508241	.03266922	.00897859	.00550818	.60527969	.00591035	1.00000000
12E	.00067804	.01518261	.00508926	.03271816	.00899156	.00551643	.60610827	.00591831	1.00000000
13B	.00073586	.01647710	.00552311	.03554404	.00976456	.00599288	.65787670	.00642277	1.00000000
14A	.00077287	.01730602	.00580090	.03736329	.01026124	.00629961	.69105032	.00674576	1.00000000
14B	.00078692	.01762073	.00590636	.03805925	.01045073	.00641694	.70365858	.00686838	1.00000000
14C	.00081102	.01816015	.00608712	.03924904	.01077498	.00661755	.72526113	.00707853	1.00000000
15A	.00082461	.01846415	.00618901	.03992156	.01095807	.00673092	.73744044	.00719696	1.00000000
16A	.00085571	.01916080	.00642247	.04145755	.01137675	.00698987	.76533786	.00746838	1.00000000
17E	.00089617	.02006742	.00672629	.04346097	.01192239	.00732766	.80165539	.00782162	1.00000000
17F	.00089809	.02011032	.00674067	.04355439	.01194796	.00734341	.80337045	.00783834	1.00000000
18A	.00221525	.04960424	.01662681	.10730448	.02944860	.01809191	.57469531		1.00000000
19	.00221522	.04960300	.01662640	.10730707	.02944876	.01809229	.57469557		1.00000000
19C									1.00000000
20A	.00237800	.05324853	.01784830	.11522152	.03161799	.01942666	.61700971		1.00000000
20B	.00249470	.05586075	.01872390	.12087843	.03316986	.02038045	.64729088		1.00000000
21	.00254199	.05692052		.12319480	.03380324	.02077093	.65963498		1.00000000
22A		.05773081		.12495766	.03428605	.02106816	.66905054		1.00000000
22B		.05842135		.12645207	.03469614	.02132008	.67705257		1.00000000
23				.14467451	.03969010	.02439237	.77446614		1.00000000
24				.22243002	.04339444	.02843498	.66607404		1.00000000
25				.14947726	.03997502	.02520426	.78534346		1.00000000
26A				.14947726	.03997502	.02520426	.78534346		1.00000000
28G				.05126137			.94873863		1.00000000
28H							1.00000000		1.00000000
28J							1.00000000		1.00000000
29A							.95944607	.01318829	1.00000000
29F							.95944608	.01318829	1.00000000
29G							.95944609	.01318827	1.00000000
29H							.96446829	.00906791	1.00000000
29J							.95944608	.01318829	1.00000000
30							.96499830	.00863039	1.00000000
31A									1.00000000
33A									1.00000000
34									1.00000000
35									1.00000000

TABLE B-2: FACTORS FOR DISTRIBUTING REACH

Reach No.	Reach Description	NORTH BAY AREA		SOUTH BAY AREA				TOTAL
		Napa County FC&WCD	Solano County FC&WCD	Alameda County FC&WCD Zone 7	Alameda County Water District	Santa Clara Valley Water District	Future Contractor	
	North Bay Aqueduct							
1	**Barker Slough thru Fairfield/Vacaville Turnout**	.27960540	.72039460					1.00000000
2	**Fairfield/Vacaville Turnout to Cordelia Forebay**	.38414551	.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			.22599612	.20663022	.49237698	.07499668	1.00000000
2	Altamont Turnout thru Patterson Reservoir			.22599657	.20663060	.49237783	.07499500	1.00000000
4	Patterson Reservoir to Del Valle Junction			.19504794	.21450018	.51113249	.07931939	1.00000000
5	Del Valle Junction thru Lake Del Valle			.14436367	.12972254	.33715573	.38875806	1.00000000
6	Del Valle Junction thru South Livermore Turnout			.14599918	.21144710	.50574745	.13680627	1.00000000
7	South Livermore Turnout thru Vallecitos Turnout				.25176680	.60218448	.14604872	1.00000000
8	Vallecitos Turnout thru Alameda-Bayside Turnout				.06294980	.72065355	.21639665	1.00000000
9	Alameda-Bayside Turnout thru Santa Clara Terminal Facilities					1.00000000		1.00000000
	California Aqueduct							
1	Delta Thru Bethany Reservoir			.00954802	.00872977	.02080260	.00342519	— — —

Reach No.	Reach Description	CENTRAL COASTAL AREA		SOUTHERN				
		San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency
	California Aqueduct							
1	Delta Thru Bethany Reservoir	.00533047	.00983404	.02939503	.00890866	.00528393	.00133628	.00871425
2A	Bethany Reservoir to Orestimba Creek	.00557252	.01028060	.03072975	.00931319	.00552151	.00139638	.00910607
2B	Orestimba Creek to O'Neill Forebay	.00557864	.01029191	.03076360	.00932344	.00552915	.00139831	.00911867
3	O'Neill Forebay to Dos Amigos Pumping Plant	.00557758	.01028995	.03075777	.00932168	.00552856	.00139816	.00911771
4	Dos Amigos Pumping Plant to Panoche Creek	.00557646	.01028790	.03075165	.00931982	.00552794	.00139801	.00911670
5	Panoche Creek to Five Points	.00557506	.01028534	.03074401	.00931751	.00552717	.00139781	.00911543
6	Five Points to Arroyo Pasajero	.00557297	.01028147	.03073244	.00931400	.00552602	.00139750	.00911351
7	Arroyo Pasajero to Kettleman City	.00557229	.01028022	.03072873	.00931287	.00552565	.00139740	.00911289
8C	Kettleman City thru Milham Avenue	.00551634	.01017702	.03042012	.00921937	.00546665	.00138249	.00901561
8D	Milham Avenue thru Avenal Gap	.00562864	.01038416	.03103938	.00940703	.00557923	.00141095	.00920128
9	Avenal Gap thru Twisselman Road			.03398204	.01029883	.00611262	.00154585	.01008095
10A	Twisselman Road thru Lost Hills			.03451663	.01046082	.00621065	.00157063	.01024262
11B	Lost Hills to 7th Standard Road			.03796305	.01150525	.00684053	.00172992	.01128139
12D	7th Standard Road thru Elk Hills Road			.03987187	.01208371	.00719023	.00181834	.01185809
12E	Elk Hills Road thru Tupman Road			.03992308	.01209924	.00720053	.00182095	.01187505
13B	Tupman Road to Buena Vista Pumping Plant			.04324825	.01310695	.00780757	.00197447	.01287616
14A	Buena Vista Pumping Plant thru Santiago Creek			.04536499	.01374841	.00819606	.00207273	.01351685
14B	Santiago Creek thru Old River Road			.04616419	.01399059	.00834387	.00211013	.01376063
14C	Old River Road to Wheeler Ridge Pumping Plant			.04753264	.01440528	.00859629	.00217396	.01417689
15A	Wheeler Ridge Pumping Plant to Wind Gap Pumping Plant			.04830162	.01463830	.00873856	.00220995	.01441151
16A	Wind Gap Pumping Plant to A.D. Edmonston Pumping Plant			.05006206	.01517177	.00906311	.00229202	.01494676
17E	A.D. Edmonston Pumping Plant to Carley V. Porter Tunnel			.05234459	.01586347	.00948480	.00239865	.01564222
17F	Carley V. Porter Tunnel to Junction, West Branch, Calif. Aqueduct			.05245355	.01589650	.00950462	.00240367	.01567491
18A	Junction, West Branch, Calif. Aqueduct thru Alamo Powerplant			.13238112		.02399390	.00606795	.03957043
19	Alamo Powerplant to Fairmont			.13237766		.02399451	.00606811	.03957141
19C	Buttes Junction thru Buttes Reservoir			1.00000000				
20A	Fairmont thru 70th Street West			.06847930		.02576425	.00651573	.04249001
20B	70th Street West to Palmdale			.02276024		.02702917	.00683555	.04457607
21	Palmdale to Littlerock Creek			.02318952		.02754717	.00696651	.04543034
22A	Littlerock Creek to Pearblossom Pumping Plant			.01181870		.02794143	.00706621	.04608044
22B	Pearblossom Pumping Plant to West Fork Mojave River					.02827552	.00715074	.04663153
23	West Fork Mojave River to Silverwood Lake					.00324449	.00818122	.00535117
24	Cedar Springs Dam and Silverwood Lake					.01024605	.01251569	.01690478
25	Silverwood Lake to South Portal, San Bernardino Tunnel							
26A	South Portal, San Bernardino Tunnel thru Devil Canyon Pwp.							
28G	Devil Canyon Powerplant to Barton Road							
28H	Barton Road to Lake Perris							
28J	Perris Dam and Lake Perris							
29A	Junction, West Branch, Calif. Aqueduct thru Oso Pumping Plant			.00304299	.02728237			
29F	Oso Pumping Plant thru Quail Embankment			.00304379	.02728234			
29G	Quail Embankment thru Warne Powerplant				.02736564			
29H	Pyramid Dam and Lake				.02646380			
29J	Pyramid Lake thru Castaic Powerplant				.02736563			
30	Castaic Dam and Lake				.02637131			
31A	Avenal Gap to Devil's Den Pumping Plant	.10560302	.19482503					
33A	Devil's Den Pumping Plant thru San Luis Obispo Powerplant	.35150790	.64849210					
34	San Luis Obispo Powerplant to Arroyo Grande	.24688802	.75311198					
35	Arroyo Grande thru Santa Maria **terminus**	.18022524	.81977476					

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	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District
					Municipal and Industrial	Agricultural			
California Aqueduct									
1	.00377824	.01707931	.00088687	.00254710	.02742073	.30633442	.00090702	.00167139	.03505306
2A	.00394038	.01781205	.00092491	.00266276	.02864588	.31948963	.00094755	.00174305	.03655686
2B	.00395099	.01786013	.00092740	.00266569	.02869070	.32034362	.00094904		.03665560
3	.00395208	.01786513	.00092766	.00266517	.02868917	.32043064	.00094899		.03666585
4	.00395323	.01787039	.00092794	.00266463	.02868756	.32052214	.00094893		.03667664
5	.00395466	.01787694	.00092828	.00266396	.02868556	.32063639	.00094886		.03669011
6	.00395684	.01788685	.00092879	.00266296	.02868253	.32080926	.00094875		.03671048
7	.00395753	.01789003	.00092896	.00266264	.02868156	.32086471	.00094872		.03671701
8C	.00390372	.01764648	.00091632	.00263593	.02836374	.31651560	.00093819		.03621709
8D	.00398843	.01802948		.00268958	.02895220	.32337797			.01795137
9					.03173493	.32315570			
10A					.03225002	.31237848			
11B					.03555316	.24304304			
12D					.03738966	.20458362			
12E					.03744664	.20348854			
13B					.01437747	.16288986			
14A					.00610657	.13050491			
14B					.00621833	.11497394			
14C					.00640883	.08842321			
15A					.00651639	.07347673			
16A					.00676126	.03933050			
17E					.00208231				
31A	.07364766			.05046239		.57546190			

Reach No.	CALIFORNIA AREA								
	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	TOTAL
1	.00049187	.01101303	.00369180	.02363192	.00650449	.00398446	.43940271	.00429334	1.00000000
2A	.00051421	.01151300	.00385943	.02469456	.00679800	.00416362	.45932579	.00448830	1.00000000
2B	.00051477	.01152575	.00386368	.02472869	.00680672	.00416938	.45985088	.00449324	1.00000000
3	.00051469	.01152359	.00386296	.02472605	.00680580	.00416893	.45976950	.00449238	1.00000000
4	.00051459	.01152131	.00386218	.02472327	.00680482	.00416846	.45968394	.00449149	1.00000000
5	.00051448	.01151846	.00386122	.02471980	.00680361	.00416788	.45957709	.00449037	1.00000000
6	.00051427	.01151416	.00385978	.02471455	.00680178	.00416698	.45941542	.00448869	1.00000000
7	.00051421	.01151278	.00385931	.02471286	.00680118	.00416671	.45936358	.00448816	1.00000000
8C	.00050905	.01139703	.00382056	.02444913	.00673013	.00412224	.46619410	.00444309	1.00000000
8D	.00051940	.01162908	.00389834	.02495260	.00686817	.00420714	.47575203	.00453354	1.00000000
9	.00056864	.01273174	.00426793	.02733801	.00752279	.00460932	.52108733	.00496332	1.00000000
10A	.00057757	.01293209	.00433507	.02777636	.00764260	.00468324	.52938182	.00504140	1.00000000
11B	.00063524	.01422367	.00476794	.03059312	.00841338	.00515813	.58274744	.00554474	1.00000000
12D	.00066717	.01493906	.00500769	.03215687	.00884093	.00542180	.61234745	.00582351	1.00000000
12E	.00066803	.01495830	.00501414	.03220286	.00885312	.00542956	.61318897	.00583099	1.00000000
13B	.00072369	.01620441	.00543178	.03491750	.00959624	.00588725	.66464178	.00631662	1.00000000
14A	.00075911	.01699773	.00569765	.03665478	.01007092	.00618017	.69750337	.00662575	1.00000000
14B	.00077249	.01729729	.00579803	.03731574	.01025102	.00629159	.70996969	.00674247	1.00000000
14C	.00079541	.01781020	.00596992	.03844447	.01055888	.00648190	.73127981	.00694231	1.00000000
15A	.00080829	.01809845	.00606653	.03908064	.01073222	.00658915	.74327705	.00705461	1.00000000
16A	.00083775	.01875829	.00628766	.04053196	.01112817	.00683383	.77068316	.00731170	1.00000000
17E	.00087593	.01961383	.00657438	.04241764	.01164221	.00715176	.80626315	.00764506	1.00000000
17F	.00087775	.01965466	.00658807	.04250631	.01166651	.00716671	.80794577	.00766097	1.00000000
18A	.00221525	.04960424	.01662681	.10730448	.02944860	.01809191	.57469531		1.00000000
19	.00221522	.04960300	.01662640	.10730707	.02944876	.01809229	.57469557		1.00000000
19C									1.00000000
20A	.00237800	.05324853	.01784830	.11522152	.03161799	.01942666	.61700971		1.00000000
20B	.00249470	.05586075	.01872390	.12087843	.03316986	.02038045	.64729088		1.00000000
21	.00254199	.05692052		.12319480	.03380324	.02077093	.65963498		1.00000000
22A		.05773081		.12495766	.03428605	.02106816	.66905054		1.00000000
22B		.05842135		.12645207	.03469614	.02132008	.67705257		1.00000000
23				.14467451	.03969010	.02439237	.77446614		1.00000000
24				.22243002	.04339444	.02843498	.66607404		1.00000000
25				.11825184	.03722720	.01993915	.82458181		1.00000000
26A				.14947726	.03997502	.02520426	.78534346		1.00000000
28G				.05126137			.94873863		1.00000000
28H							1.00000000		1.00000000
28J							1.00000000		1.00000000
29A							.95652648	.01314816	1.00000000
29F							.95652573	.01314814	1.00000000
29G							.95944609	.01318827	1.00000000
29H							.96446829	.00906791	1.00000000
29J							.95944608	.01318829	1.00000000
30							.96499830	.00863039	1.00000000
31A									1.00000000
33A									1.00000000
34									1.00000000
35									1.00000000

TABLE B-3: POWER COSTS AND CREDITS AND ANNUAL REPLACEMENT

(in dollars)

Calendar Year	NORTH BAY AQUEDUCT			SOUTH BAY AQUEDUCT	CALIFORNIA AQUEDUCT					
	Reach 1 Barker Slough Pumping Plant	Reach 3A Cordelia Pumping Plant (Solano)	Reach 3B Cordelia Pumping Plant (Napa) [b]	Reach 1 South Bay and Del Valle Pumping Plant [c]	Reach 1 Harvey O. Banks Delta Pumping Plant	Reach 4 Dos Amigos Pumping Plant	Reach 14A Buena Vista Pumping Plant	Reach 15A Wheeler Ridge Pumping Plant	Reach 16A Ira J. Chrisman Wind Gap Pumping Plant	Reach 17E A.D. Edmonston Pumping Plant
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
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	19,936	523,445	2,267,876	1,097,085	1,007,198	997,877	2,018,282	6,671,880
1981	0	0	21,711	636,352	2,356,369	1,972,317	1,399,024	1,396,092	3,003,046	9,914,147
1982	0	0	12,476	477,004	3,695,443	1,554,440	1,344,306	1,401,413	2,989,994	9,798,574
1983	0	0	2,550	134,783	1,513,781	433,456	398,278	372,162	643,913	1,883,835
1984	0	0	5,157	275,155	1,788,084	925,173	722,072	668,800	1,224,298	3,776,231
1985	0	0	9,769	516,797	3,466,039	1,805,731	1,721,130	1,784,366	3,684,774	12,359,464
1986	0	0	19,957	1,056,501	7,138,464	3,315,045	3,103,419	3,201,852	6,388,485	21,380,954
1987	0	0	20,102	1,355,867	12,417,589	5,410,470	5,704,687	6,223,523	12,314,582	41,369,682
1988	30,986	36,897	19,049	1,190,011	8,682,167	4,147,228	4,319,465	4,692,014	9,110,675	29,678,540
1989	39,650	45,975	22,417	1,343,921	9,506,676	4,476,391	4,565,151	4,887,353	9,711,252	31,748,230
1990	44,740	51,259	24,878	1,345,709	9,531,483	4,503,245	4,501,645	4,842,123	9,667,967	31,853,703
1991	50,013	55,401	30,353	1,437,022	10,294,782	4,757,326	4,784,834	5,204,281	10,487,320	34,605,674
1992	56,066	58,007	35,342	1,487,947	10,435,565	4,810,377	4,835,099	5,258,944	10,601,680	34,989,273
1993	66,071	64,699	42,776	1,649,743	11,241,470	5,205,504	5,076,917	5,520,372	11,148,010	36,937,608
1994	80,293	74,762	52,945	1,888,792	12,457,319	6,000,142	6,049,626	6,640,746	13,501,441	44,972,086
1995	93,064	72,702	55,722	1,826,001	11,589,908	5,504,832	5,347,457	5,819,684	11,788,757	39,132,264
1996	113,128	82,270	65,185	2,008,825	13,554,523	6,367,046	6,491,663	7,148,368	14,560,560	48,582,830
1997	112,734	82,735	67,533	1,967,216	12,709,040	6,106,961	6,006,680	6,572,309	13,377,314	44,365,793
1998	126,932	94,076	78,820	2,154,624	14,977,602	7,000,528	7,176,363	7,927,506	16,312,231	54,140,337
1999	128,807	96,329	82,596	2,126,171	13,953,171	6,740,918	6,631,890	7,287,509	15,019,400	49,481,711
2000	139,020	104,178	92,022	2,241,128	15,230,562	7,400,168	7,440,882	8,241,715	17,078,484	56,261,209
2001	146,519	110,314	99,092	2,305,722	15,840,052	7,652,800	7,695,338	8,492,642	17,651,982	57,985,695
2002	195,710	150,225	134,935	3,005,768	20,415,465	9,739,796	9,981,000	11,061,536	23,003,698	76,177,965
2003	205,285	159,351	144,054	3,077,524	21,207,647	10,047,750	10,435,001	11,583,514	24,002,652	79,658,575
2004	218,206	171,403	155,761	3,196,793	22,329,621	10,528,712	11,065,221	12,345,822	25,500,698	84,751,854
2005	220,466	169,388	161,661	3,192,358	22,200,205	10,536,363	11,108,390	12,401,011	25,567,091	84,924,090
2006	227,405	172,105	171,141	3,241,204	22,835,090	10,795,358	11,513,065	12,826,748	26,455,898	87,856,610
2007	234,204	174,652	180,569	3,288,356	23,278,078	10,994,695	11,761,785	13,111,546	27,085,003	90,062,511
2008	241,224	177,366	190,535	3,335,386	23,556,657	11,209,110	12,057,932	13,456,573	27,793,286	92,504,484
2009	291,746	211,373	236,123	3,974,899	28,439,908	13,353,348	14,619,587	16,374,098	33,957,518	113,684,226
2010	296,349	211,552	245,482	3,977,293	28,491,091	13,234,956	14,415,168	16,116,616	33,410,637	111,894,071
2011	304,559	215,860	258,752	4,021,105	29,051,611	13,668,282	15,073,329	16,888,135	35,051,798	117,597,544
2012	311,404	217,510	271,613	4,049,879	29,615,641	13,662,634	15,039,287	16,839,891	34,930,076	117,287,766
2013	319,889	219,629	285,322	4,089,323	29,833,829	13,892,604	15,566,829	17,474,310	36,277,991	121,911,803
2014	327,880	221,540	299,374	4,123,919	30,244,587	13,880,557	15,505,659	17,400,430	36,118,356	121,397,314
2015	384,852	256,135	359,985	4,766,747	34,961,437	16,196,163	18,388,880	20,726,365	42,911,672	145,626,012
2016	392,084	257,787	374,576	4,796,349	35,789,609	15,984,708	18,010,914	20,276,149	41,955,246	142,329,945
2017	396,520	257,446	386,356	4,787,683	35,868,674	16,373,346	18,793,401	21,227,326	44,001,060	149,384,844
2018	401,006	257,206	398,716	4,782,060	35,614,855	16,240,735	18,628,118	21,031,490	43,612,614	148,045,627
2019	461,800	292,452	468,346	5,437,360	41,401,337	18,209,788	20,990,045	23,628,162	49,375,513	168,078,164
2020	465,713	291,246	481,414	5,414,936	39,922,333	18,392,838	21,347,420	24,147,264	50,786,959	173,017,774
2021	463,700	289,751	479,456	5,385,850	41,981,737	18,353,463	21,101,111	24,055,772	50,906,032	173,465,666
2022	464,979	290,376	481,119	5,397,468	39,873,143	17,989,585	20,836,502	23,752,507	50,166,502	171,445,028
2023	462,868	288,849	478,776	5,366,504	41,173,258	18,181,751	21,282,327	24,305,217	51,125,789	175,325,631
2024	463,992	289,316	479,923	5,373,899	40,400,835	17,903,868	21,197,984	24,200,308	50,653,027	174,359,210
2025	464,127	289,141	480,117	5,370,626	41,325,975	17,891,808	21,181,732	24,181,517	50,458,048	174,120,970
2026	505,223	314,459	522,160	5,840,921	44,494,037	19,616,793	23,324,698	26,654,264	55,531,413	192,187,757
2027	503,053	312,922	519,606	5,812,351	44,818,188	19,761,824	23,633,427	27,039,053	56,276,628	195,090,283
2028	504,159	313,468	520,515	5,822,517	44,593,188	19,630,880	23,385,280	26,733,515	55,625,977	192,795,871
2029	502,643	312,415	518,639	5,801,541	44,654,025	19,713,233	23,569,983	26,940,048	56,119,154	194,543,103
2030	502,835	312,676	518,450	5,799,428	45,031,028	19,580,443	23,534,358	26,872,238	56,028,120	194,121,683
2031	499,041	310,316	514,538	5,755,661	44,512,683	19,773,310	24,052,565	27,624,119	57,689,150	199,775,824
2032	499,267	310,457	514,771	5,758,269	44,953,137	19,557,822	23,760,434	27,271,297	57,181,643	197,872,778
2033	533,679	331,856	550,252	6,155,160	48,426,945	21,469,272	26,258,672	30,205,517	63,686,164	220,054,837
2034	532,603	331,187	549,142	6,142,750	49,423,306	21,466,705	26,244,858	30,098,609	63,716,188	220,069,898
2035	527,824	328,215	544,215	6,087,634	49,480,170	21,816,640	26,927,819	30,932,534	65,615,397	226,754,873

a) Includes: the costs of electric capacity and energy used by pumping plants, exclusive of associated power transmission and station service charges; the value of electric capacity and energy produced by power recovery plants (treated as negative costs); the payments to sinking fund reserves that will finance periodic replacement of electro-mechanical equipment; and the plant capacity and energy costs associated with surplus water service prior to May 1, 1973.

DEPOSITS FOR EACH AQUEDUCT PUMPING AND POWER RECOVERY PLANT[a]

(in dollars)

CALIFORNIA AQUEDUCT									
Reach 18A Alamo Powerplant	Reach 22B Pear-blossom Pumping Plant	Reach 26A Devil Canyon Powerplant	Reach 29A Oso Pumping Plant	Reach 29G William E Warne (Pyramid) Powerplant	Reach 29J Castaic Powerplant	Reach 31A Las Perillas and Badger Hill Pumping Plants	Reach 33A Devil's Den Sawtooth and Polonio PP's and San Luis Obispo Pwp.	Grand Total	Calendar Year
(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	
0	0	0	0	0	0	0	0	38,130	1962
0	0	0	0	0	0	0	0	58,871	1963
0	0	0	0	0	0	0	0	75,239	1964
0	0	0	0	0	0	0	0	146,297	1965
0	0	0	0	0	0	0	0	198,643	1966
0	0	0	0	0	0	6,517	0	263,128	1967
0	0	0	0	0	0	120,278	0	2,034,449	1968
0	0	0	0	0	0	79,620	0	1,366,635	1969
0	0	0	0	0	0	137,449	0	1,188,765	1970
0	64,807	0	1,696	0	0	171,389	0	1,725,032	1971
0	103,584	-3,112	180,005	0	-385,696	240,651	0	4,645,065	1972
0	615,309	-931,697	274,450	0	-1,193,216	128,730	0	5,854,986	1973
0	595,646	-939,072	322,440	0	-1,823,397	129,345	0	6,272,395	1974
0	616,327	-1,101,445	457,487	0	-2,835,302	101,109	0	7,156,363	1975
0	914,440	-1,520,412	314,669	0	-2,512,021	151,211	0	7,192,331	1976
0	318,880	-1,216,060	53,119	0	-1,723,847	85,538	0	739,780	1977
0	1,801,373	-3,298,247	251,373	0	-2,196,163	197,217	0	11,983,358	1978
0	1,813,744	-3,335,069	157,934	0	-2,749,296	209,088	0	10,273,049	1979
0	1,866,161	-3,508,195	170,688	0	-2,721,871	182,996	0	10,593,358	1980
0	2,198,826	-3,771,112	497,911	0	-2,875,478	188,425	0	16,937,630	1981
0	1,708,650	-3,507,944	623,111	-974,222	-3,485,691	180,522	0	15,818,076	1982
0	355,381	-4,831,563	158,553	122,801	-1,040,895	13,936	0	160,971	1983
0	688,165	-7,766,780	352,176	-2,304,676	3,224,702	110,641	0	3,689,198	1984
0	1,275,974	-10,370,912	1,286,759	-8,493,752	-15,075,570	159,676	0	-5,869,755	1985
-892,475	3,400,811	-14,072,584	1,489,349	-5,698,900	-10,784,375	323,020	0	19,369,523	1986
-2,079,471	6,712,843	-21,422,875	2,816,607	-8,695,692	-15,668,700	431,036	0	46,910,250	1987
-2,388,563	5,074,554	-22,122,213	2,104,809	-8,478,608	-14,870,550	318,307	0	21,544,768	1988
-2,380,745	5,546,058	-21,556,065	2,061,460	-7,956,788	-13,895,450	357,438	0	28,522,924	1989
-2,434,231	5,536,950	-22,028,156	2,043,297	-8,196,837	-14,181,350	358,411	0	27,464,836	1990
-2,589,386	6,232,422	-22,172,350	2,166,777	-8,492,104	-14,604,500	371,480	0	32,619,345	1991
-2,568,348	6,234,727	-22,340,219	2,206,893	-8,479,076	-14,645,900	376,649	0	33,353,026	1992
-2,680,059	6,986,327	-23,620,907	2,095,493	-7,687,514	-13,204,950	627,297	0	39,468,857	1993
-2,779,138	8,017,539	-23,593,350	2,749,251	-9,327,871	-15,831,800	696,817	0	51,649,600	1994
-2,737,567	7,551,456	-24,030,395	2,102,063	-7,350,679	-12,683,800	663,431	0	44,744,900	1995
-2,949,133	8,800,583	-25,606,327	2,864,064	-9,427,980	-16,018,150	721,958	0	52,666,011	1996
-2,964,932	8,581,435	-26,048,207	2,335,637	-7,807,576	-13,427,750	699,453	0	68,670,603	1997
-3,184,998	10,054,463	-26,755,624	3,100,694	-9,466,778	-16,040,600	766,087	0	62,692,880	1998
-3,109,907	9,669,038	-27,369,534	2,601,215	-7,883,675	-13,484,100	755,971	0	73,051,470	1999
-3,275,385	10,711,890	-28,411,697	3,107,779	-9,008,175	-15,226,950	796,844	0	77,327,117	2000
-3,309,569	11,106,979	-28,590,938	3,170,772	-8,882,101	-15,039,800	819,811	0	125,208,742	2001
-3,445,301	14,981,335	-29,379,872	3,836,279	-8,636,826	-14,589,850	1,068,702	0	133,092,458	2002
-3,550,929	15,814,934	-30,241,888	3,949,023	-8,641,034	-14,594,950	1,094,229	0	124,350,738	2003
-3,530,626	16,318,855	-30,635,521	4,536,482	-9,371,863	-15,838,000	1,136,636	0	132,880,054	2004
-3,756,955	17,406,960	-31,704,230	4,137,435	-8,381,365	-14,152,000	1,135,059	0	135,165,927	2005
-3,750,798	17,633,376	-32,246,975	4,463,255	-8,928,583	-15,088,900	1,152,426	0	139,328,425	2006
-3,832,749	18,196,612	-32,776,592	4,460,057	-8,855,257	-14,929,950	1,169,191	0	143,602,711	2007
-3,898,255	18,727,307	-33,262,153	4,520,077	-8,902,856	-15,023,050	1,185,913	0	147,869,586	2008
-4,092,871	23,352,752	-34,289,605	5,210,134	-8,943,838	-15,092,600	1,413,296	0	192,700,094	2009
-4,064,954	23,012,059	-34,858,588	5,075,485	-8,688,746	-14,706,800	1,414,147	0	189,475,818	2010
-4,189,089	23,955,596	-35,096,312	5,432,257	-9,261,972	-15,570,900	1,429,724	0	198,798,291	2011
-4,261,766	24,514,418	-36,108,826	5,090,193	-8,525,994	-14,505,100	1,439,955	0	199,824,731	2012
-4,307,181	24,971,884	-36,535,898	5,524,899	-9,215,289	-15,572,300	1,453,980	0	206,153,164	2013
-4,458,359	26,048,651	-36,646,817	4,879,134	-8,112,631	-13,714,650	1,466,280	0	208,981,224	2014
-4,446,004	29,860,316	-37,553,752	6,360,971	-9,418,576	-15,813,350	1,694,842	0	255,262,695	2015
-4,496,601	30,330,640	-37,772,335	5,605,406	-8,293,630	-13,916,900	1,705,367	0	253,329,314	2016
-4,598,926	30,942,514	-38,484,752	6,307,243	-9,353,422	-15,654,650	1,702,285	0	262,336,948	2017
-4,648,392	31,191,580	-38,743,262	5,955,865	-8,883,289	-14,855,100	1,700,286	0	260,730,115	2018
-4,718,221	35,894,747	-39,318,658	6,337,751	-8,562,094	-14,314,050	1,933,281	0	305,595,723	2019
-4,861,904	36,501,895	-39,921,393	6,682,155	-9,139,324	-15,279,100	1,925,308	0	310,175,534	2020
-4,917,919	36,638,619	-39,949,123	6,664,155	-9,155,825	-15,321,450	1,914,967	0	312,355,962	2021
-4,970,466	37,019,222	-40,818,573	6,190,905	-8,496,326	-14,232,050	1,919,097	0	307,309,018	2022
-4,972,869	36,709,861	-40,877,598	6,872,587	-9,451,000	-15,826,750	1,908,088	0	312,353,289	2023
-5,052,593	37,279,094	-41,036,251	6,452,869	-8,902,925	-14,869,650	1,910,717	0	311,103,623	2024
-5,138,300	37,450,822	-41,537,360	6,305,642	-8,759,875	-14,550,250	1,909,553	0	311,444,293	2025
-5,201,025	41,060,819	-41,801,735	6,974,967	-9,007,950	-14,921,500	2,076,770	0	348,172,071	2026
-5,271,350	41,301,917	-41,665,750	7,214,167	-9,334,375	-15,502,550	2,066,612	0	352,576,006	2027
-5,246,425	40,994,862	-42,143,150	6,806,238	-8,973,425	-14,926,800	2,070,226	0	348,506,896	2028
-5,378,275	41,814,182	-42,620,400	6,589,323	-8,744,575	-14,608,250	2,062,768	0	351,789,557	2029
-5,358,975	41,634,417	-42,443,200	6,581,233	-8,802,825	-14,680,900	2,062,016	0	351,293,025	2030
-5,488,875	42,427,600	-43,536,700	7,006,886	-9,465,575	-15,812,350	2,046,455	0	357,684,648	2031
-5,623,625	43,472,860	-44,586,900	6,215,872	-8,508,800	-14,232,950	2,047,382	0	356,463,714	2032
-5,839,300	48,268,986	-45,855,150	6,933,328	-8,989,275	-15,051,800	2,188,499	0	399,327,642	2033
-5,926,150	48,838,122	-46,893,600	6,523,985	-8,704,275	-14,552,050	2,184,086	0	400,045,364	2034
-6,096,850	49,802,912	-47,874,125	6,801,435	-9,357,750	-15,663,050	2,164,490	0	408,792,383	2035

b) Power costs for the period 1968 through 1987 are for an interim facility.
c) The costs of Del Valle Pumping Plant are combined with those of South Bay Pumping Plant to simplify the cost allocations.

TABLE B-4: ANNUAL ENTITLE-

(in acre-feet)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA[b]				CENTRAL COASTAL AREA		
	Napa[c] County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1967	0	0	0	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	2,300	2,300	28,000	32,100	88,000	148,100	10,000	18,210	28,210
1987	0	13,750	13,750	29,000	33,300	88,000	150,300	12,500	22,704	35,204
1988	5,745	15,660	21,405	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	1,867,430	2,745,930	2,494,607	2,459,248	6,510,783	11,464,638	1,227,000	2,231,494	3,458,494

a) From Tables A and Article 6(a) of water supply contracts as of June 30, 1986.

b) Entitlements 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.

c) District's Table A quantities exclude amounts during the period 1968 through 1987 that are assumed to be supplied by non-Project water.

MENTS TO PROJECT WATER[a]

(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
				M&I	Ag.	Total				
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
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 ENTITLE-

(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)
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

MENTS TO PROJECT WATER[a]

(in acre-feet)

Calendar Year	SOUTHERN CALIFORNIA AREA				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC & WCD	Total	South Bay	
	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
1967	0	0	0	0	0	0	0	0	0	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	3,293,190
1987	14,000	1,759,800	10,000	2,091,241	2,500	1,200	920	4,620	0	3,496,315
1988	15,100	1,860,400	13,000	2,212,782	2,900	1,200	960	5,060	0	3,694,269
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	236,213,403

TABLE B-5A: ANNUAL WATER QUANTITIES DELIVERED

(in acre-feet)

Calendar Year	Grizzly Valley Pipeline	NORTH BAY AQUEDUCT				TOTAL NORTH BAY AQUEDUCT	SOUTH BAY AQUEDUCT (c					
		Reach 1	Reach 2	Reach 3A	Reach 3B		Reach 1		Reach 2	Reach 4	Reach 5	
	PC FC&WCD	SC FC&WCD	SC FC&WCD	SC FC&WCD	NC FC&WCD (b		ACWD	AC FC&WCD	AC FC&WCD	AC FC&WCD	ACWD	AC FC&WCD
	(1)	(2)	(3)	(3A)	(3B)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
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	70	0	0	3,618	3,618	0	1,345	4,558	3,182	0	164
1971	64	64	0	0	2,521	2,521	0	546	1,908	2,403	0	160
1972	505	505	0	0	3,647	3,647	0	1,066	4,605	2,041	1,489	2,777
1973	679	679	0	0	3,792	3,792	0	430	1,123	1,193	0	229
1974	648	648	0	0	4,870	4,870	0	177	0	975	0	162
1975	405	405	0	0	6,840	6,840	0	137	1,783	1,864	0	120
1976	382	382	0	0	7,122	7,122	0	265	7,204	3,384	0	817
1977	303	303	0	0	8,226	8,226	0	210	4,491	2,213	0	524
1978	278	278	0	0	6,034	6,034	0	422	2,426	3,754	0	2,034
1979	329	329	0	0	6,561	6,561	0	197	4,283	5,567	0	3,937
1980	295	295	0	0	6,707	6,707	0	77	3,883	6,686	1,508	0
1981	355	355	0	0	9,001	9,001	0	1,250	4,648	5,273	5,752	1,157
1982	305	305	0	0	1,213	1,213	0	473	3,043	4,406	0	630
1983	262	262	0	0	2,287	2,287	0	179	2,712	1,714	0	50
1984	272	272	0	0	2,923	2,923	0	165	4,219	2,219	0	55
1985	860	860	0	0	4,039	4,039	0	213	5,199	2,060	0	63
1986	841	841	0	0	3,985	3,985	0	195	6,882	1,736	0	77
1987	920	920	0	0	3,879	3,879	0	197	7,116	2,051	0	123
1988	960	960	0	12,960	4,190	19,850	0	197	7,583	2,141	0	163
1989	1,000	1,000	0	15,020	4,443	22,863	0	197	7,996	2,141	0	163
1990	1,040	1,040	0	17,200	5,010	26,260	0	197	8,479	2,141	0	163
1991	1,080	1,080	0	17,600	5,844	28,144	0	197	9,406	2,141	0	163
1992	1,120	1,120	0	17,920	6,678	30,848	0	197	10,334	2,141	0	163
1993	1,160	1,160	0	18,330	7,512	33,642	0	197	11,262	2,141	0	163
1994	1,200	1,200	0	18,730	8,346	36,426	0	197	12,190	2,141	0	163
1995	1,250	1,250	0	19,140	9,180	43,420	0	197	13,117	2,141	0	163
1996	1,300	1,300	0	19,550	9,844	47,644	0	197	13,784	2,141	0	163
1997	1,350	1,350	0	19,950	10,508	48,758	0	197	14,450	2,141	0	163
1998	1,400	1,400	0	20,360	11,172	49,882	0	197	14,450	2,141	0	163
1999	1,450	1,450	0	20,770	11,836	51,006	0	197	14,450	2,141	0	163
2000	1,510	1,510	0	21,170	12,500	52,120	0	197	14,450	2,141	0	163
2001	1,570	1,570	0	21,580	13,060	53,140	0	197	14,450	2,141	0	163
2002	1,630	1,630	0	21,990	13,620	54,160	0	197	14,450	2,141	0	163
2003	1,690	1,690	0	22,400	14,180	55,180	0	197	14,450	2,141	0	163
2004	1,750	1,750	0	22,800	14,740	56,190	0	197	14,450	2,141	0	163
2005	1,810	1,810	0	22,800	15,300	56,800	0	197	14,450	2,141	0	163
2006	1,880	1,880	0	22,800	15,920	57,470	0	197	14,450	2,141	0	163
2007	1,950	1,950	0	22,800	16,540	58,140	0	197	14,450	2,141	0	163
2008	2,020	2,020	0	22,800	17,160	58,810	0	197	14,450	2,141	0	163
2009	2,090	2,090	0	22,800	17,780	59,480	0	197	14,450	2,141	0	163
2010	2,160	2,160	0	22,800	18,400	60,150	0	197	14,450	2,141	0	163
2011	2,240	2,240	0	22,800	19,100	60,900	0	197	14,450	2,141	0	163
2012	2,320	2,320	0	22,800	19,800	61,650	0	197	14,450	2,141	0	163
2013	2,410	2,410	0	22,800	20,500	62,400	0	197	14,450	2,141	0	163
2014	2,500	2,500	0	22,800	21,200	63,150	0	197	14,450	2,141	0	163
2015	2,600	2,600	0	22,800	21,900	63,900	0	197	14,450	2,141	0	163
2016	2,700	2,700	0	22,800	22,500	64,500	0	197	14,450	2,141	0	163
2017	2,700	2,700	0	22,800	23,100	65,100	0	197	14,450	2,141	0	163
2018	2,700	2,700	0	22,800	23,700	65,700	0	197	14,450	2,141	0	163
2019	2,700	2,700	0	22,800	24,300	66,300	0	197	14,450	2,141	0	163
2020	2,700	2,700	0	22,800	24,900	66,900	0	197	14,450	2,141	0	163
2021	2,700	2,700	0	22,800	24,920	66,920	0	197	14,450	2,141	0	163
2022	2,700	2,700	0	22,800	24,940	66,940	0	197	14,450	2,141	0	163
2023	2,700	2,700	0	22,800	24,960	66,960	0	197	14,450	2,141	0	163
2024	2,700	2,700	0	22,800	24,980	66,980	0	197	14,450	2,141	0	163
2025	2,700	2,700	0	22,800	25,000	67,000	0	197	14,450	2,141	0	163
2026	2,700	2,700	0	22,800	25,000	67,000	0	197	14,450	2,141	0	163
2027	2,700	2,700	0	22,800	25,000	67,000	0	197	14,450	2,141	0	163
2028	2,700	2,700	0	22,800	25,000	67,000	0	197	14,450	2,141	0	163
2029	2,700	2,700	0	22,800	25,000	67,000	0	197	14,450	2,141	0	163
2030	2,700	2,700	0	22,800	25,000	67,000	0	197	14,450	2,141	0	163
2031	2,700	2,700	0	22,800	25,000	67,000	0	197	14,450	2,141	0	163
2032	2,700	2,700	0	22,800	25,000	67,000	0	197	14,450	2,141	0	163
2033	2,700	2,700	0	22,800	25,000	67,000	0	197	14,450	2,141	0	163
2034	2,700	2,700	0	22,800	25,000	67,000	0	197	14,450	2,141	0	163
2035	2,700	2,700	0	22,800	25,000	67,000	0	197	14,450	2,141	0	163

a) Includes entitlement water, surplus water delivered prior to May 1, 1973, and non-Project water.

b) For the period 1968 through 1987, deliveries are non-Project water pumped through an interim facility.

FROM EACH AQUEDUCT REACH TO EACH CONTRACTOR [a]

(in acre-feet)

Calendar Year	SOUTH BAY AQUEDUCT [c] (continued)				TOTAL SOUTH BAY AQUEDUCT	CALIFORNIA AQUEDUCT					
						NORTH SAN JOAQUIN DIVISION	SOUTH SAN JOAQUIN DIVISION				
							Reach 8C			Reach 8D	
	Reach 6	Reach 7	Reach 8	Reach 9		Reach 2A					
	AC FC&WCD	ACWD	ACWD	SCVWD		OFWD	TLBWSD	EWSID	CK	KCWA (Ag.)	DRWD
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
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	13,332	24,419	8,759	88,000	143,420	5,107	54,099	3,800	3,700	0	50,249
1987	14,355	29,830	8,775	88,000	150,447	5,200	65,500	3,000	4,000	0	51,400
1988	15,306	31,390	8,775	88,000	153,555	5,400	65,500	3,000	4,000	0	53,500
1989	16,132	31,680	8,775	90,000	157,084	5,600	65,726	3,000	4,000	0	55,600
1990	17,103	31,905	8,775	92,000	160,763	5,700	63,500	3,000	4,000	0	57,700
1991	18,959	32,215	8,775	94,000	165,856	5,700	63,500	3,000	4,000	0	57,700
1992	20,815	31,125	8,775	96,000	169,550	5,700	63,500	3,000	4,000	0	57,700
1993	22,670	32,625	8,775	98,000	175,833	5,700	63,500	3,000	4,000	0	57,700
1994	24,526	33,225	8,775	100,000	181,217	5,700	63,500	3,000	4,000	0	57,700
1995	26,382	33,225	8,775	100,000	184,000	5,700	63,500	3,000	4,000	0	57,700
1996	27,715	33,225	8,775	100,000	186,000	5,700	63,500	3,000	4,000	0	57,700
1997	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
1998	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
1999	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2000	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2001	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2002	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2003	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2004	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2005	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2006	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2007	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2008	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2009	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2010	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2011	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2012	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2013	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2014	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2015	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2016	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2017	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2018	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2019	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2020	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2021	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2022	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2023	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2024	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2025	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2026	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2027	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2028	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2029	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2030	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2031	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2032	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2033	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2034	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700
2035	29,049	33,225	8,775	100,000	188,000	5,700	63,500	3,000	4,000	0	57,700

c) For the period June 1962 through November 1967, deliveries were supplied by non-Project water.

TABLE B-5A: ANNUAL WATER QUANTITIES DELIVERED

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (continued)										
	SOUTH SAN JOAQUIN DIVISION (continued)										
	Reach 8D (cont)		Reach 9		Reach 10A			Reach 11B		Reach 12E	
	CK	TLBWSD	KCWA (Ag.)	TLBWSD	KCWA (M&I)	KCWA (Ag.)	TLBWSD	KCWA (M&I)	KCWA (Ag.)	KCWA (M&I)	KCWA (Ag.)
	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
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	30,951	0	0	0	0	0	24,776	0	0
1969	0	0	24,489	0	0	0	2,842	0	64,682	0	0
1970	0	3,408	46,114	1,855	0	158	4,315	0	72,279	0	9,279
1971	0	41,579	58,356	0	0	9,973	0	0	63,773	0	28,056
1972	0	113,550	75,464	0	0	5,876	0	0	72,358	0	62,342
1973	0	24,147	54,583	0	0	22,948	0	0	67,544	0	13,082
1974	0	39,686	63,814	0	10,019	22,719	0	0	87,476	2,651	4,248
1975	0	44,722	50,021	0	2,791	72,121	0	0	85,675	0	10,787
1976	0	32,216	53,465	0	74	50,444	0	0	85,067	37,519	20,555
1977	0	5,097	24,668	0	201	34,451	0	3,981	29,603	20,280	1,737
1978	0	8,119	72,231	0	0	161,889	0	0	88,753	47,133	15,011
1979	0	80,363	74,524	0	285	153,245	0	484	108,379	50,740	61,567
1980	0	40,304	79,946	0	3,780	131,836	0	3,112	103,207	32,039	22,252
1981	0	32,550	76,508	0	341	133,500	0	494	104,395	59,917	58,470
1982	214	14,146	76,877	0	4,700	164,832	0	798	99,081	36,139	75,587
1983	0	5	86,790	0	0	146,493	0	2,069	94,117	0	10,950
1984	0	2,066	152,125	0	33,005	98,267	0	2,829	90,010	51,315	48,153
1985	0	41,153	67,696	0	6,495	154,873	0	10,666	118,646	69,839	84,117
1986	0	51,810	142,423	0	10,500	149,038	0	11,152	133,329	73,068	93,838
1987	0	53,000	113,577	0	10,500	203,347	0	15,000	130,159	74,750	103,854
1988	0	53,000	123,297	0	11,000	213,727	0	15,000	132,659	79,098	122,042
1989	0	52,774	129,810	0	9,500	221,761	0	15,000	134,059	84,898	135,745
1990	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
1991	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
1992	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
1993	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
1994	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
1995	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
1996	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
1997	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
1998	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
1999	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2000	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2001	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2002	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2003	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2004	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2005	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2006	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2007	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2008	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2009	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2010	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2011	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2012	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2013	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2014	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2015	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2016	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2017	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2018	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2019	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2020	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2021	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2022	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2023	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2024	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2025	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2026	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2027	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2028	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2029	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2030	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2031	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2032	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2033	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2034	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000
2035	0	55,000	135,540	0	9,500	234,601	0	15,000	134,059	91,298	147,000

FROM EACH AQUEDUCT REACH TO EACH CONTRACTOR (a

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (continued)											
	SOUTH SAN JOAQUIN DIVISION (continued)											TEHACHAPI DIVISION
	Reach 13 B		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)
	(33)	(34)	(35)	(36)	(37)	(37A)	(38)	(38A)	(39)	(40)	(41)	(42)
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	1,773	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	0	46,125	91	35,415	0	79,189	0	34,998	49,848	1,360	24,224	0
1985	0	67,711	206	33,103	0	72,855	0	31,758	44,078	1,309	16,820	0
1986	0	26,885	885	39,389	0	84,304	0	40,195	49,066	2,800	26,313	0
1987	0	29,563	1,050	35,600	0	80,700	0	35,600	52,100	2,800	28,400	0
1988	0	31,875	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
1989	0	33,625	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
1990	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
1991	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
1992	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
1993	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
1994	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
1995	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
1996	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
1997	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
1998	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
1999	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2000	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2001	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2002	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2003	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2004	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2005	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2006	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2007	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2008	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2009	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2010	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2011	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2012	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2013	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2014	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2015	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2016	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2017	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2018	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2019	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2020	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2021	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2022	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2023	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2024	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2025	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2026	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2027	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2028	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2029	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2030	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2031	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2032	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2033	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2034	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0
2035	0	35,500	1,002	35,600	0	80,700	0	35,600	52,100	2,800	28,900	0

TABLE B-5A: ANNUAL WATER QUANTITIES DELIVERED

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT C(continued)										
	MOJAVE DIVISION										
	Reach 18A	Reach 19	Reach 20A	Reach 20B		Reach 21	Reach 22A	Reach 22B			
	AVEKWA	AVEKWA	AVEKWA	PWD	AVEKWA	LCID	AVEKWA	MWD-SC (d	CVWD (d	DWA (d	MWA
	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)
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	0	0	0	0	338	0	0	0	0	55
1973	0	0	0	0	0	290	0	- 14,800	5,800	9,000	0
1974	0	1,223	0	0	0	400	0	- 16,400	6,400	10,000	0
1975	0	7,622	420	0	0	520	0	- 18,000	7,000	11,000	0
1976	3,808	23,063	471	0	416	589	0	- 19,600	7,600	12,000	0
1977	1,231	8,927	773	0	271	111	0	0	0	0	22
1978	1,321	36,333	5,549	0	934	208	0	- 25,384	10,084	15,300	0
1979	2,098	49,910	7,555	0	930	133	0	- 25,063	10,063	15,000	4,000
1980	2,610	61,534	7,605	0	655	191	3	- 27,884	10,884	17,000	4,000
1981	2,340	65,690	10,333	0	966	1,270	46	- 31,105	12,105	19,000	4,000
1982	1,669	41,127	7,313	0	8	0	174	- 34,326	13,326	21,000	10,500
1983	43	26,377	6,253	0	20	38	268	- 37,547	14,547	23,000	0
1984	90	22,462	9,558	0	2	1	550	- 40,768	15,768	25,000	0
1985	8	23,440	11,613	1,558	217	0	1,786	- 43,989	16,989	27,000	0
1986	8	21,896	13,197	2,969	280	604	2,134	- 47,210	18,210	29,000	0
1987	8	21,890	13,570	3000	280	100	2,045	- 50,931	19,431	31,500	0
1988	8	22,035	14,555	3800	280	100	2,150	- 54,652	20,652	34,000	0
1989	8	22,170	15,145	4,200	280	100	2,255	- 58,373	21,873	36,500	0
1990	8	22,310	15,770	4,600	280	100	2,360	- 61,200	23,100	38,100	0
1991	8	7,030	16,405	5,000	10	100	2,470	- 61,200	23,100	38,100	50,800
1992	8	7,155	17,182	5,625	10	1,900	2,587	- 61,200	23,100	38,100	50,800
1993	8	7,281	17,959	6,250	10	2,000	2,704	- 61,200	23,100	38,100	50,800
1994	8	7,406	18,736	6,875	10	2,100	2,821	- 61,200	23,100	38,100	50,800
1995	8	7,532	19,512	7,500	10	2,200	2,938	- 61,200	23,100	38,100	50,800
1996	8	7,729	20,732	8,200	10	2,300	3,121	- 61,290	23,100	38,100	50,800
1997	8	7,926	21,951	8,900	10	2,300	3,305	- 61,200	23,100	38,100	50,800
1998	8	8,123	23,170	9,600	10	2,300	3,489	- 61,200	23,100	38,100	50,800
1999	8	8,320	24,390	10,300	10	2,300	3,672	- 61,200	23,100	38,100	50,800
2000	8	8,517	25,609	11,000	10	2,300	3,856	- 61,200	23,100	38,100	50,800
2001	8	8,738	26,981	11,600	10	2,300	4,063	- 61,200	23,100	38,100	50,800
2002	8	8,960	28,353	12,200	10	2,300	4,269	- 61,200	23,100	38,100	50,800
2003	8	9,182	29,724	12,800	10	2,300	4,476	- 61,200	23,100	38,100	50,800
2004	8	9,403	31,097	13,400	10	2,300	4,682	- 61,200	23,100	38,100	50,800
2005	8	9,625	32,468	14,000	10	2,300	4,889	- 61,200	23,100	38,100	50,800
2006	8	9,920	34,298	14,660	10	2,300	5,164	- 61,200	23,100	38,100	50,800
2007	8	10,216	36,127	15,320	10	2,300	5,439	- 61,200	23,100	38,100	50,800
2008	8	10,511	37,956	15,980	10	2,300	5,715	- 61,200	23,100	38,100	50,800
2009	8	10,807	39,785	16,640	10	2,300	5,990	- 61,200	23,100	38,100	50,800
2010	8	11,102	41,614	17,300	10	2,300	6,266	- 61,200	23,100	38,100	50,800
2011	8	11,496	44,053	17,300	10	2,300	6,633	- 61,200	23,100	38,100	50,800
2012	8	11,890	46,492	17,300	10	2,300	7,000	- 61,200	23,100	38,100	50,800
2013	8	12,284	48,931	17,300	10	2,300	7,367	- 61,200	23,100	38,100	50,800
2014	8	12,678	51,370	17,300	10	2,300	7,734	- 61,200	23,100	38,100	50,800
2015	8	13,072	53,808	17,300	10	2,300	8,102	- 61,200	23,100	38,100	50,800
2016	8	13,441	56,095	17,300	10	2,300	8,446	- 61,200	23,100	38,100	50,800
2017	8	13,811	58,381	17,300	10	2,300	8,790	- 61,200	23,100	38,100	50,800
2018	8	14,180	60,668	17,300	10	2,300	9,134	- 61,200	23,100	38,100	50,800
2019	8	14,549	62,954	17,300	10	2,300	9,479	- 61,200	23,100	38,100	50,800
2020	8	14,919	65,240	17,300	10	2,300	9,823	- 61,200	23,100	38,100	50,800
2021	8	17,808	66,600	17,300	10	2,300	10,374	- 61,200	23,100	38,100	50,800
2022	8	22,182	66,600	17,300	10	2,300	10,800	- 61,200	23,100	38,100	50,800
2023	8	26,982	66,600	17,300	10	2,300	10,800	- 61,200	23,100	38,100	50,800
2024	8	31,782	66,600	17,300	10	2,300	10,800	- 61,200	23,100	38,100	50,800
2025	8	36,582	66,600	17,300	10	2,300	10,800	- 61,200	23,100	38,100	50,800
2026	8	42,682	66,600	17,300	10	2,300	10,800	- 61,200	23,100	38,100	50,800
2027	8	48,782	66,600	17,300	10	2,300	10,800	- 61,200	23,100	38,100	50,800
2028	8	54,882	66,600	17,300	10	2,300	10,800	- 61,200	23,100	38,100	50,800
2029	8	60,982	66,600	17,300	10	2,300	10,800	- 61,200	23,100	38,100	50,800
2030	8	60,982	66,600	17,300	10	2,300	10,800	- 61,200	23,100	38,100	50,800
2031	8	60,982	66,600	17,300	10	2,300	10,800	- 61,200	23,100	38,100	50,800
2032	8	60,982	66,600	17,300	10	2,300	10,800	- 61,200	23,100	38,100	50,800
2033	8	60,982	66,600	17,300	10	2,300	10,800	- 61,200	23,100	38,100	50,800
2034	8	60,982	66,600	17,300	10	2,300	10,800	- 61,200	23,100	38,100	50,800
2035	8	60,982	66,600	17,300	10	2,300	10,800	- 61,200	23,100	38,100	50,800

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 shown in Column 50 provides for compliance with provisions for the repayment of costs under the Agreement.

FROM EACH AQUEDUCT REACH TO EACH CONTRACTOR [a]

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	MOJAVE DIVISION (continued)		SANTA ANA DIVISION						
	Reach 23	Reach 24	Reach 26A				Reach 28G	Reach 28H	Reach 28J
	MWA	CLAWA	MWD-SC	SBVMWD	SGVMWD	SGPWA	MWD-SC	MWD-SC	MWD-SC
	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)	(62)
1962	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0
1972	0	464	0	1,275	0	0	0	0	0
1973	0	389	444	32,426	0	0	18,942	0	0
1974	14	627	84,981	16,605	612	0	0	0	0
1975	0	825	169,960	13,865	5,450	0	0	0	251
1976	0	1,002	215,312	12,273	6,071	0	0	55	2,000
1977	58	1,109	64,823	24,833	8,996	0	0	43	2,442
1978	0	1,209	297,708	4,055	7,771	0	0	48	64,054
1979	0	1,260	260,903	18	290	0	0	1,290	94,353
1980	0	1,239	300,345	0	1,085	0	0	3,013	91,532
1981	0	1,485	395,678	16,021	3,619	0	0	4,365	149,405
1982	0	1,238	214,566	8,409	12,599	0	0	3,961	155,629
1983	0	911	175,288	5,994	734	0	0	6,645	41,616
1984	0	1,128	122,311	5,556	7,656	0	0	37,791	74,513
1985	0	1,422	147,599	7,390	5,028	0	0	182,781	6,538
1986	0	1,509	304,193	9,551	9,500	0	0	139,458	4,732
1987	0	1,513	444,400	11,640	8,400	0	0	210,200	35,400
1988	0	1,778	434,100	16,560	8,400	3,000	0	208,500	47,400
1989	0	2,000	427,000	16,680	8,400	3,000	0	207,600	55,400
1990	0	2,175	425,100	21,600	10,000	3,000	0	209,100	55,800
1991	0	2,315	425,100	25,200	10,240	3,400	0	209,100	55,800
1992	0	2,430	439,480	27,150	10,480	3,800	0	219,920	55,800
1993	0	2,545	446,670	29,100	10,720	4,200	0	225,330	55,800
1994	0	2,660	453,860	31,050	10,960	4,600	0	230,740	55,800
1995	0	2,775	327,600	33,000	11,200	5,000	0	385,200	43,500
1996	0	2,890	353,120	35,200	11,480	8,800	0	390,960	44,220
1997	0	3,005	371,140	37,400	11,760	9,600	0	396,720	44,940
1998	0	3,120	389,160	39,600	12,040	10,400	0	402,480	45,660
1999	0	3,235	407,180	41,800	12,320	11,200	0	408,240	46,380
2000	0	3,350	413,200	44,000	12,600	12,000	0	414,000	47,100
2001	0	3,465	433,270	46,400	12,920	13,060	0	414,360	47,700
2002	0	3,580	453,340	48,800	13,240	14,120	0	414,720	48,300
2003	0	3,695	473,410	51,200	13,560	15,180	0	415,080	48,900
2004	0	3,810	493,460	53,600	13,880	16,260	0	415,440	49,500
2005	0	3,925	513,550	56,000	14,200	17,300	0	415,800	50,100
2006	0	4,040	534,680	58,400	14,560	17,300	0	416,160	50,700
2007	0	4,155	555,810	60,800	14,920	17,300	0	416,520	51,300
2008	0	4,270	576,940	63,200	10,000	17,300	0	416,880	51,900
2009	0	4,385	598,070	65,600	15,640	17,300	0	417,240	52,500
2010	0	4,500	619,200	68,000	16,000	17,300	0	417,600	53,100
2011	0	4,615	634,200	70,400	16,400	17,300	0	417,600	53,100
2012	0	4,730	649,200	72,800	16,800	17,300	0	417,600	53,100
2013	0	4,845	664,200	75,200	17,200	17,300	0	417,600	53,100
2014	0	4,960	679,200	77,600	17,600	17,300	0	417,600	53,100
2015	0	5,075	694,200	80,000	18,000	17,300	0	417,600	53,100
2016	0	5,190	709,200	84,000	18,440	17,300	0	417,600	53,100
2017	0	5,305	724,200	88,000	18,880	17,300	0	417,600	53,100
2018	0	5,420	739,200	92,000	19,320	17,300	0	417,600	53,100
2019	0	5,535	754,200	96,000	19,760	17,300	0	417,600	53,100
2020	0	5,650	769,200	100,000	20,200	17,300	0	417,600	53,100
2021	0	5,765	779,800	102,600	20,720	17,300	0	417,600	53,100
2022	0	5,800	790,400	102,600	21,240	17,300	0	417,600	53,100
2023	0	5,800	801,000	102,600	21,760	17,300	0	417,600	53,100
2024	0	5,800	811,600	102,600	22,280	17,300	0	417,600	53,100
2025	0	5,800	822,200	102,600	22,800	17,300	0	417,600	53,100
2026	0	5,800	831,020	102,600	23,360	17,300	0	417,600	53,100
2027	0	5,800	839,840	102,600	23,920	17,300	0	417,600	53,100
2028	0	5,800	848,660	102,600	24,480	17,300	0	417,600	53,100
2029	0	5,800	857,480	102,600	25,040	17,300	0	417,600	53,100
2030	0	5,800	866,300	102,600	25,600	17,300	0	417,600	53,100
2031	0	5,800	912,080	102,600	26,240	17,300	0	417,600	53,100
2032	0	5,800	957,860	102,600	26,880	17,300	0	417,600	53,100
2033	0	5,800	1,003,640	102,600	27,520	17,300	0	417,600	53,100
2034	0	5,800	1,049,420	102,600	28,160	17,300	0	417,600	53,100
2035	0	5,800	1,095,200	102,600	28,800	17,300	0	417,600	53,100

TABLE B-5A: ANNUAL WATER QUANTITIES DELIVERED FROM EACH AQUEDUCT REACH TO EACH CONTRACTOR[a]

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (continued)											Total California Aqueduct
	WEST BRANCH, CALIFORNIA AQUEDUCT					COASTAL BRANCH, CALIFORNIA AQUEDUCT						
	Reach 29F	Reach 29H	Reach 30			Reach 31A		Reach 33A	Reach 34	Reach 35		
	AVEKWA	VCFCD	MWD-SC	VCFCD	CLWA	KCWA (Ag.)	DDWD	SLOC FC&WCD	SLOC FC&WCD	SLOC FC&WCD	SBC FC&WCD	
	(63)	(64)	(65)	(66)	(67)	(68)	(69)	(70)	(71)	(72)	(73)	(74)
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	71,657	7,382	0	0	0	0	192,188
1969	0	0	0	0	0	52,094	9,970	0	0	0	0	195,705
1970	0	0	0	0	0	71,910	11,739	0	0	0	0	276,211
1971	0	0	0	0	0	98,481	12,490	0	0	0	0	553,081
1972	53	0	71,938	0	0	107,850	13,905	0	0	0	0	895,006
1973	20	0	155,297	0	0	69,227	9,418	0	0	0	0	638,930
1974	36	0	209,136	0	0	68,474	9,700	0	0	0	0	783,984
1975	26	0	374,280	0	0	74,516	10,700	0	0	0	0	1,129,728
1976	24	0	420,684	0	0	78,358	11,700	0	0	0	0	1,245,662
1977	0	0	122,447	0	0	35,504	5,075	0	0	0	0	465,442
1978	0	0	171,139	0	0	81,242	11,362	0	0	0	0	1,339,268
1979	0	0	145,591	0	7	104,017	19,138	0	0	0	0	1,537,075
1980	0	0	164,721	0	1,210	97,497	13,882	0	0	0	0	1,413,363
1981	0	0	277,503	0	5,761	97,054	12,700	0	0	0	0	1,779,479
1982	0	0	351,362	0	9,516	83,076	12,700	0	0	0	0	1,641,571
1983	0	0	157,519	0	9,476	87,859	12,659	0	0	0	0	1,089,626
1984	0	0	263,735	0	11,477	113,646	12,741	0	0	0	0	1,489,814
1985	0	0	390,696	0	12,401	108,724	12,099	0	0	0	0	1,863,544
1986	0	0	473,162	0	14,000	106,651	13,301	0	0	0	0	2,169,095
1987	0	0	510,000	0	15,284	106,500	12,700	0	0	0	0	2,496,030
1988	0	0	510,000	750	16,612	109,200	12,700	0	0	0	0	2,561,728
1989	0	0	510,000	1,500	17,960	111,200	12,700	0	0	0	0	2,605,398
1990	0	0	510,000	2,250	19,016	114,200	12,700	0	0	0	0	2,658,469
1991	0	250	510,000	3,000	20,299	114,200	12,700	0	0	0	0	2,701,527
1992	0	500	510,000	3,750	21,585	114,200	12,700	0	0	0	0	2,735,162
1993	0	750	510,000	4,500	22,870	114,200	12,700	10,000	5,000	10,000	45,486	2,824,983
1994	0	1,000	510,000	6,000	24,156	114,200	12,700	10,000	5,000	10,000	45,486	2,845,068
1995	0	1,250	506,800	7,500	25,441	114,200	12,700	10,000	5,000	10,000	45,486	2,865,252
1996	0	1,500	506,800	9,750	26,727	114,200	12,700	10,000	5,000	10,000	45,486	2,909,833
1997	0	2,000	506,800	12,000	28,013	114,200	12,700	10,000	5,000	10,000	45,486	2,944,064
1998	0	2,500	506,800	15,000	29,299	114,200	12,700	10,000	5,000	10,000	45,486	2,979,045
1999	0	3,250	506,800	15,000	30,585	114,200	12,700	10,000	5,000	10,000	45,486	3,011,276
2000	0	4,000	506,800	15,000	31,871	114,200	12,700	10,000	5,000	10,000	45,486	3,031,507
2001	0	4,200	506,800	15,000	33,482	114,200	12,700	10,000	5,000	10,000	45,486	3,060,643
2002	0	4,400	506,800	15,000	35,093	114,200	12,700	10,000	5,000	10,000	45,486	3,089,779
2003	0	4,600	506,800	15,000	36,704	114,200	12,700	10,000	5,000	10,000	45,486	3,118,915
2004	0	4,800	506,800	15,000	45,200	114,200	12,700	10,000	5,000	10,000	45,486	3,154,936
2005	0	5,000	506,800	15,000	39,926	114,200	12,700	10,000	5,000	10,000	45,486	3,177,187
2006	0	5,000	506,800	15,000	40,241	114,200	12,700	10,000	5,000	10,000	45,486	3,205,527
2007	0	5,000	506,800	15,000	40,556	114,200	12,700	10,000	5,000	10,000	45,486	3,233,867
2008	0	5,000	506,800	15,000	40,870	114,200	12,700	10,000	5,000	10,000	45,486	3,256,926
2009	0	5,000	506,800	15,000	41,185	114,200	12,700	10,000	5,000	10,000	45,486	3,290,546
2010	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,318,886
2011	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,340,001
2012	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,361,116
2013	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,382,231
2014	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,403,346
2015	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,424,461
2016	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,447,016
2017	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,469,571
2018	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,492,126
2019	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,514,681
2020	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,537,236
2021	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,555,871
2022	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,571,826
2023	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,587,746
2024	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,603,666
2025	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,619,586
2026	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,635,066
2027	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,650,546
2028	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,666,026
2029	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,681,506
2030	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,690,886
2031	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,737,306
2032	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,783,726
2033	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,830,146
2034	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,876,566
2035	0	5,000	506,800	15,000	41,500	114,200	12,700	10,000	5,000	10,000	45,486	3,922,986

Table B-5B begins on next page.

TABLE B-5B: ANNUAL WATER QUANTITIES

(in acre-feet)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA[c]				CENTRAL COASTAL AREA		
	Napa[b] County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	494	8,412	0	8,906	0	0	0
1963	0	0	0	1,731	10,914	0	12,645	0	0	0
1964	0	0	0	1,673	19,238	0	20,911	0	0	0
1965	0	0	0	2,605	16,407	15,014	34,026	0	0	0
1966	0	0	0	5,511	14,864	34,538	54,913	0	0	0
1967	0	0	0	4,780	12,882	39,101	56,763	0	0	0
1968	1,214	0	1,214	6,133	24,817	70,105	101,055	0	0	0
1969	2,687	0	2,687	6,635	813	62,264	69,712	0	0	0
1970	3,618	0	3,618	9,249	0	80,311	89,560	0	0	0
1971	2,521	0	2,521	5,017	5,961	87,606	98,584	0	0	0
1972	3,647	0	3,647	10,489	27,671	100,266	138,426	0	0	0
1973	3,792	0	3,792	2,975	2,521	88,582	94,078	0	0	0
1974	4,870	0	4,870	1,314	4	88,000	89,318	0	0	0
1975	6,840	0	6,840	4,618	986	88,000	93,604	0	0	0
1976	7,122	0	7,122	17,131	21,300	88,000	126,431	0	0	0
1977	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	3,985	0	3,985	22,242	33,178	88,000	143,420	0	0	0
1987	3,879	0	3,879	23,842	38,605	88,000	150,447	0	0	0
1988	4,190	15,660	19,850	25,390	40,165	88,000	153,555	0	0	0
1989	4,443	18,420	22,863	26,629	40,455	90,000	157,084	0	0	0
1990	5,010	21,250	26,260	28,083	40,680	92,000	160,763	0	0	0
1991	5,844	22,300	28,144	30,866	40,990	94,000	165,856	0	0	0
1992	6,678	24,170	30,848	33,650	39,900	96,000	169,550	0	0	0
1993	7,512	26,130	33,642	36,433	41,400	98,000	175,833	25,000	45,486	70,486
1994	8,346	28,080	36,426	39,217	42,000	100,000	181,217	25,000	45,486	70,486
1995	9,180	34,240	43,420	42,000	42,000	100,000	184,000	25,000	45,486	70,486
1996	9,844	37,800	47,644	44,000	42,000	100,000	186,000	25,000	45,486	70,486
1997	10,508	38,250	48,758	46,000	42,000	100,000	188,000	25,000	45,486	70,486
1998	11,172	38,710	49,882	46,000	42,000	100,000	188,000	25,000	45,486	70,486
1999	11,836	39,170	51,006	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2000	12,500	39,620	52,120	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2001	13,060	40,080	53,140	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2002	13,620	40,540	54,160	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2003	14,180	41,000	55,180	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2004	14,740	41,450	56,190	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2005	15,300	41,500	56,800	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2006	15,920	41,550	57,470	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2007	16,540	41,600	58,140	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2008	17,160	41,650	58,810	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2009	17,780	41,700	59,480	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2010	18,400	41,750	60,150	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2011	19,100	41,800	60,900	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2012	19,800	41,850	61,650	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2013	20,500	41,900	62,400	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2014	21,200	41,950	63,150	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	950,729	1,846,120	2,796,849	2,345,785	2,346,518	6,565,719	11,258,022	1,075,000	1,955,898	3,030,898

a) Includes entitlement water, surplus water delivered prior to May 1, 1973, and non-Project water.

b) For the period 1968 through 1987, deliveries are non-Project water pumped through an interim facility.

DELIVERED TO EACH CONTRACTOR[a]

(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
				M&I	Ag.	Total				
	(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	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	75,444	773,620
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	88,600	772,000	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	3,800	98,405	891,431	989,836	3,700	5,107	105,909	1,171,902
1987	12,700	51,400	3,000	104,100	919,400	1,023,500	4,000	5,200	118,500	1,218,300
1988	12,700	53,500	3,000	108,900	965,700	1,074,600	4,000	5,400	118,500	1,271,700
1989	12,700	55,600	3,000	113,200	999,100	1,112,300	4,000	5,600	118,500	1,311,700
1990	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
1991	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
1992	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
1993	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
1994	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
1995	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
1996	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
1997	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
1998	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
1999	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2000	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2001	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2002	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2003	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2004	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2005	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2006	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2007	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2008	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2009	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2010	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2011	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2012	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2013	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2014	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2015	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2016	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2017	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2018	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2019	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2020	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2021	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2022	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2023	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2024	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2025	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2026	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2027	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2028	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2029	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2030	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2031	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2032	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2033	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2034	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
2035	12,700	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,355,000
TOTAL	844,961	3,542,705	195,803	6,533,088	59,606,205	66,139,293	233,900	365,589	7,084,938	78,407,189

c) For the period June 1962 through November 1967, deliveries were supplied by non-Project water.

TABLE B-5B: ANNUAL WATER QUANTITIES

(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)
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	53	0	0	464	0	338	55	0	1,275	0
1973	20	0	5,800	389	9,000	290	0	0	32,426	0
1974	1,259	0	6,400	627	10,000	400	14	0	16,605	612
1975	8,068	0	7,000	825	11,000	520	0	0	13,865	5,450
1976	27,782	0	7,600	1,002	12,000	589	0	0	12,273	6,071
1977	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	1,558	7,390	5,028
1986	37,515	14,000	18,210	1,509	29,000	604	0	2,969	9,551	9,500
1987	37,793	15,284	19,431	1,513	31,500	100	0	3,000	11,640	8,400
1988	39,028	16,612	20,652	1,778	34,000	100	0	3,800	16,560	8,400
1989	39,858	17,960	21,873	2,000	36,500	100	0	4,200	16,680	8,400
1990	40,728	19,016	23,100	2,175	38,100	100	0	4,600	21,600	10,000
1991	25,923	20,299	23,100	2,315	38,100	100	50,800	5,000	25,200	10,240
1992	26,942	21,585	23,100	2,430	38,100	1,900	50,800	5,625	27,150	10,480
1993	27,962	22,870	23,100	2,545	38,100	2,000	50,800	6,250	29,100	10,720
1994	28,981	24,156	23,100	2,660	38,100	2,100	50,800	6,875	31,050	10,960
1995	30,000	25,441	23,100	2,775	38,100	2,200	50,800	7,500	33,000	11,200
1996	31,600	26,727	23,100	2,890	38,100	2,300	50,800	8,200	35,200	11,480
1997	33,200	28,013	23,100	3,005	38,100	2,300	50,800	8,900	37,400	11,760
1998	34,800	29,299	23,100	3,120	38,100	2,300	50,800	9,600	39,600	12,040
1999	36,400	30,585	23,100	3,235	38,100	2,300	50,800	10,300	41,800	12,320
2000	38,000	31,871	23,100	3,350	38,100	2,300	50,800	11,000	44,000	12,600
2001	39,800	33,482	23,100	3,465	38,100	2,300	50,800	11,600	46,400	12,920
2002	41,600	35,093	23,100	3,580	38,100	2,300	50,800	12,200	48,800	13,240
2003	43,400	36,704	23,100	3,695	38,100	2,300	50,800	12,800	51,200	13,560
2004	45,200	45,200	23,100	3,810	38,100	2,300	50,800	13,400	53,600	13,880
2005	47,000	39,926	23,100	3,925	38,100	2,300	50,800	14,000	56,000	14,200
2006	49,400	40,241	23,100	4,040	38,100	2,300	50,800	14,660	58,400	14,560
2007	51,800	40,556	23,100	4,155	38,100	2,300	50,800	15,320	60,800	14,920
2008	54,200	40,870	23,100	4,270	38,100	2,300	50,800	15,980	63,200	10,000
2009	56,600	41,185	23,100	4,385	38,100	2,300	50,800	16,640	65,600	15,640
2010	59,000	41,500	23,100	4,500	38,100	2,300	50,800	17,300	68,000	16,000
2011	62,200	41,500	23,100	4,615	38,100	2,300	50,800	17,300	70,400	16,400
2012	65,400	41,500	23,100	4,730	38,100	2,300	50,800	17,300	72,800	16,800
2013	68,600	41,500	23,100	4,845	38,100	2,300	50,800	17,300	75,200	17,200
2014	71,800	41,500	23,100	4,960	38,100	2,300	50,800	17,300	77,600	17,600
2015	75,000	41,500	23,100	5,075	38,100	2,300	50,800	17,300	80,000	18,000
2016	78,000	41,500	23,100	5,190	38,100	2,300	50,800	17,300	84,000	18,440
2017	81,000	41,500	23,100	5,305	38,100	2,300	50,800	17,300	88,000	18,880
2018	84,000	41,500	23,100	5,420	38,100	2,300	50,800	17,300	92,000	19,320
2019	87,000	41,500	23,100	5,535	38,100	2,300	50,800	17,300	96,000	19,760
2020	90,000	41,500	23,100	5,650	38,100	2,300	50,800	17,300	100,000	20,200
2021	94,800	41,500	23,100	5,765	38,100	2,300	50,800	17,300	102,600	20,720
2022	99,600	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	21,240
2023	104,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	21,760
2024	109,200	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	22,280
2025	114,000	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	22,800
2026	120,100	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	23,360
2027	126,200	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	23,920
2028	132,300	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	24,480
2029	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	25,040
2030	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	25,600
2031	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	26,240
2032	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	26,880
2033	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	27,520
2034	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,160
2035	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
TOTAL	4,086,904	1,825,823	1,273,332	229,723	2,087,900	105,393	2,308,649	675,777	3,515,251	908,731

DELIVERED TO EACH CONTRACTOR[a]

(in acre-feet)

Calendar Year	SOUTHERN CALIFORNIA AREA				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC & WCD	Total	South Bay	
	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
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	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	207,808	0	53	679	732	0	737,532
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	1,536,456
1981	0	795,846	0	938,482	0	221	355	576	0	1,918,563
1982	0	691,192	0	818,071	0	334	305	639	0	1,750,123
1983	0	343,521	0	431,182	0	325	262	587	0	1,187,156
1984	0	457,582	0	556,830	0	177	272	449	0	1,591,308
1985	0	683,625 (d	0	792,477	0	308	254	562	0	1,990,233
1986	0	874,335	0	997,193	1,400	1,200	841	3,441	0	2,319,941
1987	0	1,149,069	0	1,277,730	1,500	1,200	920	3,620	0	2,653,976
1988	3,000	1,145,348	750	1,290,028	1,800	1,200	960	3,960	0	2,739,093
1989	3,000	1,141,627	1,500	1,293,698	2,000	1,200	1,000	4,200	0	2,789,545
1990	3,000	1,138,800	2,250	1,303,469	2,100	1,200	1,040	4,340	0	2,849,832
1991	3,400	1,138,800	3,250	1,346,527	2,500	27,500	1,080	31,080	0	2,926,607
1992	3,800	1,164,000	4,250	1,380,162	2,550	27,500	1,120	31,170	0	2,966,730
1993	4,200	1,176,600	5,250	1,399,497	2,600	27,500	1,160	31,260	0	3,065,718
1994	4,600	1,189,200	7,000	1,419,582	2,650	27,500	1,200	31,350	0	3,094,061
1995	5,000	1,201,900	8,750	1,439,766	2,700	27,500	1,250	31,450	0	3,124,122
1996	8,800	1,233,900	11,250	1,484,347	3,000	27,500	1,300	31,800	0	3,175,277
1997	9,600	1,258,400	14,000	1,518,578	3,300	27,500	1,350	32,150	0	3,212,972
1998	10,400	1,282,900	17,500	1,553,559	3,600	27,500	1,400	32,500	0	3,249,427
1999	11,200	1,307,400	18,250	1,585,790	3,900	27,500	1,450	32,850	0	3,283,132
2000	12,000	1,319,900	19,000	1,606,021	4,200	27,500	1,510	33,210	0	3,304,837
2001	13,060	1,340,930	19,200	1,635,157	5,280	27,500	1,570	34,350	0	3,336,133
2002	14,120	1,361,960	19,400	1,664,293	6,360	27,500	1,630	35,490	0	3,367,429
2003	15,180	1,382,990	19,600	1,693,429	7,440	27,500	1,690	36,630	0	3,398,725
2004	16,260	1,404,000	19,800	1,729,450	8,520	27,500	1,750	37,770	0	3,436,896
2005	17,300	1,425,050	20,000	1,751,701	9,600	27,500	1,810	38,910	0	3,460,897
2006	17,300	1,447,140	20,000	1,780,041	9,600	27,500	1,880	38,980	0	3,489,977
2007	17,300	1,469,230	20,000	1,808,381	9,600	27,500	1,950	39,050	0	3,519,057
2008	17,300	1,491,320	20,000	1,831,440	9,600	27,500	2,020	39,120	0	3,542,856
2009	17,300	1,513,410	20,000	1,865,060	9,600	27,500	2,090	39,190	0	3,577,216
2010	17,300	1,535,500	20,000	1,893,400	9,600	27,500	2,160	39,260	0	3,606,296
2011	17,300	1,550,500	20,000	1,914,515	9,600	27,500	2,240	39,340	0	3,628,241
2012	17,300	1,565,500	20,000	1,935,630	9,600	27,500	2,320	39,420	0	3,650,186
2013	17,300	1,580,500	20,000	1,956,745	9,600	27,500	2,410	39,510	0	3,672,141
2014	17,300	1,595,500	20,000	1,977,860	9,600	27,500	2,500	39,600	0	3,694,096
2015	17,300	1,610,500	20,000	1,998,975	9,600	27,500	2,600	39,700	0	3,716,061
2016	17,300	1,625,500	20,000	2,021,530	9,600	27,500	2,700	39,800	0	3,739,316
2017	17,300	1,640,500	20,000	2,044,085	9,600	27,500	2,700	39,800	0	3,762,471
2018	17,300	1,655,500	20,000	2,066,640	9,600	27,500	2,700	39,800	0	3,785,626
2019	17,300	1,670,500	20,000	2,089,195	9,600	27,500	2,700	39,800	0	3,808,781
2020	17,300	1,685,500	20,000	2,111,750	9,600	27,500	2,700	39,800	0	3,831,936
2021	17,300	1,696,100	20,000	2,130,385	9,600	27,500	2,700	39,800	0	3,850,591
2022	17,300	1,706,700	20,000	2,146,340	9,600	27,500	2,700	39,800	0	3,866,566
2023	17,300	1,717,300	20,000	2,162,260	9,600	27,500	2,700	39,800	0	3,882,506
2024	17,300	1,727,900	20,000	2,178,180	9,600	27,500	2,700	39,800	0	3,898,446
2025	17,300	1,738,500	20,000	2,194,100	9,600	27,500	2,700	39,800	0	3,914,386
2026	17,300	1,747,320	20,000	2,209,580	9,600	27,500	2,700	39,800	0	3,929,866
2027	17,300	1,756,140	20,000	2,225,060	9,600	27,500	2,700	39,800	0	3,945,346
2028	17,300	1,764,960	20,000	2,240,540	9,600	27,500	2,700	39,800	0	3,960,826
2029	17,300	1,773,780	20,000	2,256,020	9,600	27,500	2,700	39,800	0	3,976,306
2030	17,300	1,782,600	20,000	2,265,400	9,600	27,500	2,700	39,800	0	3,985,686
2031	17,300	1,828,380	20,000	2,311,820	9,600	27,500	2,700	39,800	0	4,032,106
2032	17,300	1,874,160	20,000	2,358,240	9,600	27,500	2,700	39,800	0	4,078,526
2033	17,300	1,919,940	20,000	2,404,660	9,600	27,500	2,700	39,800	0	4,124,946
2034	17,300	1,965,720	20,000	2,451,080	9,600	27,500	2,700	39,800	0	4,171,366
2035	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,217,786
TOTAL	676,920	81,617,076	811,000	100,122,479	365,000	1,248,057	107,607	1,720,664	0	197,336,101

d) Excludes 13,558 acre-feet of 1978 ground water exchange and 1,301 acre-feet of 1982 ground water exchange.

TABLE B-6: ANNUAL WATER QUANTITIES CONVEYED THRU EACH PUMPING

(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[b]	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
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	1,214	1,214	24	-10	1,214	1,228
1969	0	0	0	0	0	0	2,687	2,687	0	2	2,687	2,689
1970	0	0	0	0	0	0	3,618	3,618	0	18	3,618	3,636
1971	0	0	0	0	0	0	2,521	2,521	0	4	2,521	2,525
1972	0	0	0	0	0	0	3,647	3,647	0	-10	3,647	3,637
1973	0	0	0	0	0	0	3,792	3,792	0	1	3,792	3,793
1974	0	0	0	0	0	0	4,870	4,870	0	10	4,870	4,880
1975	0	0	0	0	0	0	6,840	6,840	0	10	6,840	6,850
1976	0	0	0	0	0	0	7,122	7,122	0	4	7,122	7,126
1977	0	0	0	0	0	0	8,226	8,226	0	2	8,226	8,228
1978	0	0	0	0	0	0	6,034	6,034	0	-6	6,034	6,028
1979	0	0	0	0	0	0	6,561	6,561	0	1	6,561	6,562
1980	0	0	0	0	0	0	6,707	6,707	0	-3	6,707	6,704
1981	0	0	0	0	0	0	9,001	9,001	0	8	9,001	9,009
1982	0	0	0	0	0	0	1,213	1,213	0	-8	1,213	1,205
1983	0	0	0	0	0	0	2,287	2,287	0	-12	2,287	2,275
1984	0	0	0	0	0	0	2,923	2,923	0	-15	2,923	2,908
1985	0	0	0	0	0	0	4,039	4,039	0	9	4,039	4,048
1986	0	0	3,985	3,985	0	0	3,985	3,985	0	0	3,985	3,985
1987	0	0	3,879	3,879	0	0	3,879	3,879	0	0	3,879	3,879
1988	0	51	19,850	19,901	0	5	12,960	12,965	0	5	4,190	4,195
1989	0	51	22,863	22,914	0	5	15,020	15,025	0	5	4,443	4,448
1990	0	51	26,260	26,311	0	5	17,200	17,205	0	5	5,010	5,015
1991	0	51	28,144	28,195	0	5	17,600	17,605	0	5	5,844	5,849
1992	0	51	30,848	30,899	0	5	17,920	17,925	0	5	6,678	6,683
1993	0	51	33,642	33,693	0	5	18,330	18,335	0	5	7,512	7,517
1994	0	51	36,426	36,477	0	5	18,730	18,735	0	5	8,346	8,351
1995	0	51	43,420	43,471	0	5	19,140	19,145	0	5	9,180	9,185
1996	0	51	47,644	47,695	0	5	19,550	19,555	0	5	9,844	9,849
1997	0	51	48,758	48,809	0	5	19,950	19,955	0	5	10,508	10,513
1998	0	51	49,882	49,933	0	5	20,360	20,365	0	5	11,172	11,177
1999	0	51	51,006	51,057	0	5	20,770	20,775	0	5	11,836	11,841
2000	0	51	52,120	52,171	0	5	21,170	21,175	0	5	12,500	12,505
2001	0	51	53,140	53,191	0	5	21,580	21,585	0	5	13,060	13,065
2002	0	51	54,160	54,211	0	5	21,990	21,995	0	5	13,620	13,625
2003	0	51	55,180	55,231	0	5	22,400	22,405	0	5	14,180	14,185
2004	0	51	56,190	56,241	0	5	22,800	22,805	0	5	14,740	14,745
2005	0	51	56,800	56,851	0	5	22,800	22,805	0	5	15,300	15,305
2006	0	51	57,470	57,521	0	5	22,800	22,805	0	5	15,920	15,925
2007	0	51	58,140	58,191	0	5	22,800	22,805	0	5	16,540	16,545
2008	0	51	58,810	58,861	0	5	22,800	22,805	0	5	17,160	17,165
2009	0	51	59,480	59,531	0	5	22,800	22,805	0	5	17,780	17,785
2010	0	51	60,150	60,201	0	5	22,800	22,805	0	5	18,400	18,405
2011	0	51	60,900	60,951	0	5	22,800	22,805	0	5	19,100	19,105
2012	0	51	61,650	61,701	0	5	22,800	22,805	0	5	19,800	19,805
2013	0	51	62,400	62,451	0	5	22,800	22,805	0	5	20,500	20,505
2014	0	51	63,150	63,201	0	5	22,800	22,805	0	5	21,200	21,205
2015	0	51	63,900	63,951	0	5	22,800	22,805	0	5	21,900	21,905
2016	0	51	64,500	64,551	0	5	22,800	22,805	0	5	22,500	22,505
2017	0	51	65,100	65,151	0	5	22,800	22,805	0	5	23,100	23,105
2018	0	51	65,700	65,751	0	5	22,800	22,805	0	5	23,700	23,705
2019	0	51	66,300	66,351	0	5	22,800	22,805	0	5	24,300	24,305
2020	0	51	66,900	66,951	0	5	22,800	22,805	0	5	24,900	24,905
2021	0	51	66,920	66,971	0	5	22,800	22,805	0	5	24,920	24,925
2022	0	51	66,940	66,991	0	5	22,800	22,805	0	5	24,940	24,945
2023	0	51	66,960	67,011	0	5	22,800	22,805	0	5	24,960	24,965
2024	0	51	66,980	67,031	0	5	22,800	22,805	0	5	24,980	24,985
2025	0	51	67,000	67,051	0	5	22,800	22,805	0	5	25,000	25,005
2026	0	51	67,000	67,051	0	5	22,800	22,805	0	5	25,000	25,005
2027	0	51	67,000	67,051	0	5	22,800	22,805	0	5	25,000	25,005
2028	0	51	67,000	67,051	0	5	22,800	22,805	0	5	25,000	25,005
2029	0	51	67,000	67,051	0	5	22,800	22,805	0	5	25,000	25,005
2030	0	51	67,000	67,051	0	5	22,800	22,805	0	5	25,000	25,005
2031	0	51	67,000	67,051	0	5	22,800	22,805	0	5	25,000	25,005
2032	0	51	67,000	67,051	0	5	22,800	22,805	0	5	25,000	25,005
2033	0	51	67,000	67,051	0	5	22,800	22,805	0	5	25,000	25,005
2034	0	51	67,000	67,051	0	5	22,800	22,805	0	5	25,000	25,005
2035	0	51	67,000	67,051	0	5	22,800	22,805	0	5	25,000	25,005

Notes: "Reservoir Storage Changes" include projected net annual storage accretions (positive values) and withdrawals (negative values) for all down-aqueduct reservoirs of the project transportation facilities. Those variable OMP&R costs (Table B-12) that are allocable to storage accretions are assigned to the minimum OMP&R costs of the respective reservoirs.
"Water Supply Delivery" or "Deliveries, Water Supply", include certain hypothetical quantities to facilitate cost allocations for those years when deliveries are made from net annual storage withdrawals. The net annual amounts of storage withdrawals are hypothetically added to the actual amounts conveyed from the Delta to the reservoirs ... since deliveries made from storage withdrawals bear the same variable OMP&R costs per acre-foot as if the deliveries were actually conveyed that year, from the Delta. The hypothetical increases in the deliveries made from reservoir storage withdrawals are offset by equal credits to the minimum OMP&R costs of the respective reservoirs. Thus, the variable OMP&R components per acre-foot (Table B-17) may be applied to the total annual quantities delivered either from aqueduct reservoir storage or from the Delta.
"Conservation Water" includes initial fill water, operational losses, and net annual storage changes associated with San Luis Reservoir (and the portion of the aqueduct that is allocated to conservation). The same allocation procedure outlined above for transportation facilities applies also to conservation facilities ... except that the hypothetical cost increases are added to the variable OMP&R cost to be reimbursed through the Transportation Charge, and deducted from the minimum OMP&R costs to be reimbursed through the Delta Water Charge.

AND POWER RECOVERY PLANT OF PROJECT TRANSPORTATION FACILITIES[a]

(in acre-feet)

Calendar Year	SOUTH BAY AQUEDUCT						CALIFORNIA AQUEDUCT							
	SOUTH BAY PUMPING PLANT						NORTH SAN JOAQUIN DIVISION							
							BANKS DELTA PUMPING PLANT							
				Deliveries			Transportation Water							
										Deliveries				
	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Water Supply[c]	Recreation	Total	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Water Supply	Recreation	Total	Conservation Water	Total
	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
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	1,688,259	-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	0	62,633	-124,798	1,591,047	4,387	1,533,269	13,601	1,546,870
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	4,281	144	143,420	339	148,184	0	92,949	-60,579	2,312,515	7,153	2,352,038	41,499	2,393,537
1987	0	4,290	0	150,447	400	155,137	0	93,003	55,752	2,646,477	7,796	2,803,028	280,108	3,083,136
1988	0	3,690	0	153,555	400	157,645	0	79,559	21,995	2,715,283	7,896	2,824,733	30,152	2,854,885
1989	0	3,670	0	157,084	400	161,154	0	78,950	-21,075	2,762,482	10,026	2,830,383	35,853	2,866,236
1990	0	3,647	0	160,763	400	164,810	0	79,148	-1,493	2,819,232	12,696	2,909,583	30,975	2,940,558
1991	0	3,587	0	165,856	400	169,843	0	79,182	23,657	2,867,383	12,501	2,982,723	97,260	3,079,983
1992	0	3,534	0	169,550	400	173,484	0	79,044	-12,802	2,904,712	12,501	2,983,455	98,675	3,082,130
1993	0	3,431	0	175,833	400	179,664	0	79,241	-50,476	3,000,816	12,501	3,042,082	71,778	3,113,860
1994	0	3,340	0	181,217	400	184,957	0	79,262	67,826	3,026,285	12,501	3,185,874	-63,261	3,122,613
1995	0	3,292	0	184,000	400	187,692	0	79,128	-87,668	3,049,252	12,501	3,053,213	-15,689	3,037,524
1996	0	3,259	0	186,000	400	189,659	0	79,472	67,410	3,095,833	12,501	3,255,216	23,797	3,279,013
1997	0	3,229	0	188,000	400	191,629	0	79,064	-61,222	3,132,064	12,501	3,162,407	2,407	3,164,814
1998	0	3,229	0	188,000	400	191,629	0	79,179	78,829	3,167,045	12,501	3,337,554	89,143	3,426,697
1999	0	3,229	0	188,000	400	191,629	0	79,127	-78,763	3,199,276	12,501	3,212,141	21,505	3,233,646
2000	0	3,229	0	188,000	400	191,629	0	79,048	25,412	3,219,507	12,501	3,336,468	10,105	3,346,573
2001	0	3,229	0	188,000	400	191,629	0	78,950	22	3,248,643	12,501	3,340,116	46,330	3,386,446
2002	0	3,229	0	188,000	400	191,629	0	78,906	-3,680	3,277,779	12,501	3,365,506	16,576	3,382,082
2003	0	3,229	0	188,000	400	191,629	0	79,161	1,766	3,306,915	12,501	3,400,343	35,927	3,436,270
2004	0	3,229	0	188,000	400	191,629	0	79,150	9,311	3,342,936	12,501	3,443,898	46,141	3,490,039
2005	0	3,229	0	188,000	400	191,629	0	78,972	-6,557	3,365,187	12,501	3,450,103	24,321	3,474,424
2006	0	3,229	0	188,000	400	191,629	0	79,014	722	3,393,527	12,501	3,485,764	36,433	3,522,197
2007	0	3,229	0	188,000	400	191,629	0	78,989	-6,910	3,421,867	12,501	3,506,447	34,756	3,541,203
2008	0	3,229	0	188,000	400	191,629	0	78,859	-4,874	3,444,926	12,501	3,531,412	3,723	3,535,135
2009	0	3,229	0	188,000	400	191,629	0	78,962	27,870	3,478,546	12,501	3,597,879	7,287	3,605,166
2010	0	3,229	0	188,000	400	191,629	0	79,056	-32,264	3,506,886	12,501	3,566,179	43,375	3,609,554
2011	0	3,229	0	188,000	400	191,629	0	79,118	21,966	3,528,001	12,501	3,641,586	259	3,641,845
2012	0	3,229	0	188,000	400	191,629	0	79,115	-18,833	3,549,116	12,501	3,621,899	65,175	3,687,074
2013	0	3,229	0	188,000	400	191,629	0	79,099	17,963	3,570,231	12,501	3,679,794	-167	3,679,627
2014	0	3,229	0	188,000	400	191,629	0	79,026	-28,551	3,591,346	12,501	3,654,322	45,723	3,700,045
2015	0	3,229	0	188,000	400	191,629	0	79,306	30,706	3,612,461	12,501	3,734,974	-17,862	3,717,112
2016	0	3,229	0	188,000	400	191,629	0	78,545	-50,444	3,635,016	12,501	3,675,618	106,745	3,782,363
2017	0	3,229	0	188,000	400	191,629	0	78,740	30,553	3,657,571	12,501	3,779,365	18,014	3,797,379
2018	0	3,229	0	188,000	400	191,629	0	78,804	-8,650	3,680,126	12,501	3,762,781	17,173	3,779,954
2019	0	3,229	0	188,000	400	191,629	0	78,913	-30,331	3,702,681	12,501	3,763,764	119,917	3,883,681
2020	0	3,229	0	188,000	400	191,629	0	78,756	19,611	3,725,236	12,501	3,836,104	-69,741	3,766,363
2021	0	3,229	0	188,000	400	191,629	0	78,943	20,083	3,743,871	12,501	3,855,398	128,540	3,983,938
2022	0	3,229	0	188,000	400	191,629	0	78,964	-22,855	3,759,826	12,501	3,828,436	-50,269	3,778,167
2023	0	3,229	0	188,000	400	191,629	0	79,061	26,636	3,775,746	12,501	3,893,944	35,501	3,929,445
2024	0	3,229	0	188,000	400	191,629	0	79,028	-2,379	3,791,666	12,501	3,880,816	-24,202	3,856,614
2025	0	3,229	0	188,000	400	191,629	0	78,681	-18,374	3,807,586	12,501	3,880,394	73,292	3,953,686
2026	0	3,229	0	188,000	400	191,629	0	78,563	1,623	3,823,066	12,501	3,915,753	9,197	3,924,950
2027	0	3,229	0	188,000	400	191,629	0	78,627	31,347	3,838,546	12,501	3,961,021	17,859	3,978,880
2028	0	3,229	0	188,000	400	191,629	0	78,628	-15,157	3,854,026	12,501	3,929,998	31,885	3,961,883
2029	0	3,229	0	188,000	400	191,629	0	79,102	-2,298	3,869,506	12,501	3,958,811	33,021	3,991,832
2030	0	3,229	0	188,000	400	191,629	0	78,836	-14,347	3,878,886	12,501	3,955,876	81,973	4,037,849
2031	0	3,229	0	188,000	400	191,629	0	78,776	26,583	3,925,306	12,501	4,043,166	-10,274	4,032,892
2032	0	3,229	0	188,000	400	191,629	0	78,937	-41,008	3,971,726	12,501	4,022,156	53,144	4,075,300
2033	0	3,229	0	188,000	400	191,629	0	78,883	14,804	4,018,146	12,501	4,124,334	-17,200	4,107,134
2034	0	3,229	0	188,000	400	191,629	0	78,691	-23,884	4,064,566	12,501	4,131,874	68,234	4,200,108
2035	0	3,229	0	188,000	400	191,629	0	78,873	28,939	4,110,986	12,501	4,231,299	11,705	4,243,004

a) Includes entitlement water, surplus water delivered prior to May 1, 1973, and non-Project water.

b) For the period 1968 through 1987, deliveries are non-Project water pumped through an interim facility.

c) For the period June 1962 through November 1967, deliveries were supplied by non-Project water.

TABLE B-6: ANNUAL WATER QUANTITIES CONVEYED THRU EACH PUMPING

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (continued)											
	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)
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	0	63,337	-114,983	1,487,225	3,849	1,439,428	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	76,609	-60,723	2,163,988	6,134	2,186,008	0	54,922	-60,723	1,240,145	6,009	1,240,353
1987	0	76,654	55,752	2,490,830	6,690	2,629,926	0	54,967	55,752	1,513,980	6,580	1,631,279
1988	0	62,807	21,995	2,556,328	6,790	2,647,920	0	41,120	21,995	1,526,730	6,680	1,596,525
1989	0	62,218	-21,075	2,599,798	8,920	2,649,861	0	40,531	-21,075	1,530,400	8,810	1,558,666
1990	0	62,439	-1,493	2,652,769	11,590	2,725,305	0	40,752	-1,493	1,540,171	11,480	1,590,910
1991	0	62,533	23,657	2,695,827	11,395	2,793,412	0	40,846	23,657	1,583,229	11,285	1,659,017
1992	0	62,448	-12,802	2,729,462	11,395	2,790,503	0	40,761	-12,802	1,616,864	11,285	1,656,108
1993	0	62,748	-50,476	2,819,283	11,395	2,842,950	0	40,511	-50,476	1,636,199	11,285	1,637,519
1994	0	62,860	67,826	2,839,368	11,395	2,981,449	0	40,623	67,826	1,656,284	11,285	1,776,018
1995	0	62,774	-87,668	2,859,552	11,395	2,846,053	0	40,537	-87,668	1,676,468	11,285	1,640,622
1996	0	63,151	67,410	2,904,133	11,395	3,046,089	0	40,914	67,410	1,721,049	11,285	1,840,658
1997	0	62,773	-61,222	2,938,364	11,395	2,951,310	0	40,536	-61,222	1,755,280	11,285	1,745,879
1998	0	62,888	78,829	2,973,345	11,395	3,126,457	0	40,651	78,829	1,790,261	11,285	1,921,026
1999	0	62,836	-78,763	3,005,576	11,395	3,001,044	0	40,599	-78,763	1,822,492	11,285	1,795,613
2000	0	62,757	25,412	3,025,807	11,395	3,125,371	0	40,520	25,412	1,842,723	11,285	1,919,940
2001	0	62,659	22	3,054,943	11,395	3,129,019	0	40,422	22	1,871,859	11,285	1,923,588
2002	0	62,615	-3,680	3,084,079	11,395	3,154,409	0	40,378	-3,680	1,900,995	11,285	1,948,978
2003	0	62,870	1,766	3,113,215	11,395	3,189,246	0	40,633	1,766	1,930,131	11,285	1,983,815
2004	0	62,859	9,311	3,149,236	11,395	3,232,801	0	40,622	9,311	1,966,152	11,285	2,027,370
2005	0	62,681	-6,557	3,171,487	11,395	3,239,006	0	40,444	-6,557	1,988,403	11,285	2,033,575
2006	0	62,723	722	3,199,827	11,395	3,274,667	0	40,486	722	2,016,743	11,285	2,069,236
2007	0	62,698	-6,910	3,228,167	11,395	3,295,350	0	40,461	-6,910	2,045,083	11,285	2,089,919
2008	0	62,568	-4,874	3,251,226	11,395	3,320,315	0	40,331	-4,874	2,068,142	11,285	2,114,884
2009	0	62,671	27,870	3,284,846	11,395	3,386,782	0	40,434	27,870	2,101,762	11,285	2,181,351
2010	0	62,765	-32,264	3,313,186	11,395	3,355,082	0	40,528	-32,264	2,130,102	11,285	2,149,651
2011	0	62,827	21,966	3,334,301	11,395	3,430,489	0	40,590	21,966	2,151,217	11,285	2,225,058
2012	0	62,824	-18,833	3,355,416	11,395	3,410,802	0	40,587	-18,833	2,172,332	11,285	2,205,371
2013	0	62,808	17,963	3,376,531	11,395	3,468,697	0	40,571	17,963	2,193,447	11,285	2,263,266
2014	0	62,735	-28,551	3,397,646	11,395	3,443,225	0	40,498	-28,551	2,214,562	11,285	2,237,794
2015	0	63,015	30,706	3,418,761	11,395	3,523,877	0	40,778	30,706	2,235,677	11,285	2,318,446
2016	0	62,254	-50,444	3,441,316	11,395	3,464,521	0	40,017	-50,444	2,258,232	11,285	2,259,090
2017	0	62,449	30,553	3,463,871	11,395	3,568,268	0	40,212	30,553	2,280,787	11,285	2,362,837
2018	0	62,513	-8,650	3,486,426	11,395	3,551,684	0	40,276	-8,650	2,303,342	11,285	2,346,253
2019	0	62,622	-30,331	3,508,981	11,395	3,552,667	0	40,385	-30,331	2,325,897	11,285	2,347,236
2020	0	62,465	19,611	3,531,536	11,395	3,625,007	0	40,228	19,611	2,348,452	11,285	2,419,576
2021	0	62,652	20,083	3,550,171	11,395	3,644,301	0	40,415	20,083	2,367,087	11,285	2,438,870
2022	0	62,673	-22,855	3,566,126	11,395	3,617,339	0	40,436	-22,855	2,383,042	11,285	2,411,908
2023	0	62,770	26,636	3,582,046	11,395	3,682,847	0	40,533	26,636	2,398,962	11,285	2,477,416
2024	0	62,737	-2,379	3,597,966	11,395	3,669,719	0	40,500	-2,379	2,414,882	11,285	2,464,288
2025	0	62,390	-18,374	3,613,886	11,395	3,669,297	0	40,153	-18,374	2,430,802	11,285	2,463,866
2026	0	62,272	1,623	3,629,366	11,395	3,704,656	0	40,035	1,623	2,446,282	11,285	2,499,225
2027	0	62,336	31,347	3,644,846	11,395	3,749,924	0	40,099	31,347	2,461,762	11,285	2,544,493
2028	0	62,337	-15,157	3,660,326	11,395	3,718,901	0	40,100	-15,157	2,477,242	11,285	2,513,470
2029	0	62,811	-2,298	3,675,806	11,395	3,747,714	0	40,574	-2,298	2,492,722	11,285	2,542,283
2030	0	62,545	-14,347	3,685,186	11,395	3,744,779	0	40,308	-14,347	2,502,102	11,285	2,539,348
2031	0	62,485	26,583	3,731,606	11,395	3,832,069	0	40,248	26,583	2,548,522	11,285	2,626,638
2032	0	62,646	-41,008	3,778,026	11,395	3,811,059	0	40,409	-41,008	2,594,942	11,285	2,605,628
2033	0	62,592	14,804	3,824,446	11,395	3,913,237	0	40,355	14,804	2,641,362	11,285	2,707,806
2034	0	62,400	-23,884	3,870,866	11,395	3,920,777	0	40,163	-23,884	2,687,782	11,285	2,715,346
2035	0	62,582	28,939	3,917,286	11,395	4,020,202	0	40,345	28,939	2,734,202	11,285	2,814,771

AND POWER RECOVERY PLANT OF PROJECT TRANSPORTATION FACILITIES[a]

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (continued)											
	SOUTH SAN JOAQUIN DIVISION											
	WHEELER RIDGE PUMPING PLANT						CHRISMAN WIND GAP PUMPING PLANT					
	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries		Total	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries		Total
				Water Supply	Recreation					Water Supply	Recreation	
	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)
1962	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0
1970	198	2	0	0	0	200	0	0	0	0	0	0
1971	7,533	-112	0	3,552	0	10,973	7,366	-159	0	0	0	7,207
1972	100,274	12,765	-6,558	84,955	6,481	197,917	100,274	13,160	-6,558	78,891	6,481	192,248
1973	204,638	21,543	1,329	229,685	1,147	458,342	204,638	32,414	1,329	209,769	1,147	449,297
1974	237,554	11,843	-15,295	336,198	2,108	572,408	237,554	17,655	-15,295	318,198	2,108	560,220
1975	103,352	19,763	-693	621,706	3,358	747,486	103,352	25,326	-693	586,286	3,358	717,629
1976	61,122	18,552	-152,171	740,486	1,581	669,570	61,122	21,468	-152,171	700,935	1,581	632,935
1977	0	16,415	-116,219	246,349	560	147,105	0	15,698	-116,219	240,191	560	140,230
1978	65,027	28,820	121,904	631,121	674	847,546	65,027	26,705	121,904	599,973	674	814,283
1979	12,302	50,663	-51,299	625,561	502	637,729	12,302	50,580	-51,299	586,959	502	599,044
1980	0	48,825	-134,009	696,405	1,262	612,483	0	58,085	-134,009	658,588	1,262	583,926
1981	0	51,600	23,359	998,307	4,112	1,077,378	0	48,844	23,359	959,274	4,112	1,035,589
1982	0	44,876	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	51,292	-60,723	1,075,372	6,009	1,071,950	0	51,042	-60,723	1,026,306	6,009	1,022,634
1987	0	51,337	55,752	1,361,030	6,580	1,474,699	0	51,087	55,752	1,308,930	6,580	1,422,349
1988	0	37,490	21,995	1,373,828	6,680	1,439,993	0	37,240	21,995	1,321,728	6,680	1,387,643
1989	0	36,901	-21,075	1,377,498	8,810	1,402,134	0	36,651	-21,075	1,325,398	8,810	1,349,784
1990	0	37,122	-1,493	1,387,269	11,480	1,434,378	0	36,872	-1,493	1,335,169	11,480	1,382,028
1991	0	37,216	23,657	1,430,327	11,285	1,502,485	0	36,966	23,657	1,378,227	11,285	1,450,135
1992	0	37,131	-12,802	1,463,962	11,285	1,499,576	0	36,881	-12,802	1,411,862	11,285	1,447,226
1993	0	36,881	-50,476	1,483,297	11,285	1,480,987	0	36,631	-50,476	1,431,197	11,285	1,428,637
1994	0	36,993	67,826	1,503,382	11,285	1,619,486	0	36,743	67,826	1,451,282	11,285	1,567,136
1995	0	36,907	-87,668	1,523,566	11,285	1,484,090	0	36,657	-87,668	1,471,466	11,285	1,431,740
1996	0	37,284	67,410	1,568,147	11,285	1,684,126	0	37,034	67,410	1,516,047	11,285	1,631,776
1997	0	36,906	-61,222	1,602,378	11,285	1,589,347	0	36,656	-61,222	1,550,278	11,285	1,536,997
1998	0	37,021	78,829	1,637,359	11,285	1,764,494	0	36,771	78,829	1,585,259	11,285	1,712,144
1999	0	36,969	-78,763	1,669,590	11,285	1,639,081	0	36,719	-78,763	1,617,490	11,285	1,586,731
2000	0	36,890	25,412	1,689,821	11,285	1,763,408	0	36,640	25,412	1,637,721	11,285	1,711,058
2001	0	36,792	22	1,718,957	11,285	1,767,056	0	36,542	22	1,666,857	11,285	1,714,706
2002	0	36,748	-3,680	1,748,093	11,285	1,792,446	0	36,498	-3,680	1,695,993	11,285	1,740,096
2003	0	37,003	1,766	1,777,229	11,285	1,827,283	0	36,753	1,766	1,725,129	11,285	1,774,933
2004	0	36,992	9,311	1,813,250	11,285	1,870,838	0	36,742	9,311	1,761,150	11,285	1,818,488
2005	0	36,814	-6,557	1,835,501	11,285	1,877,043	0	36,564	-6,557	1,783,401	11,285	1,824,693
2006	0	36,856	722	1,863,841	11,285	1,912,704	0	36,606	722	1,811,741	11,285	1,860,354
2007	0	36,831	-6,910	1,892,181	11,285	1,933,387	0	36,581	-6,910	1,840,081	11,285	1,881,037
2008	0	36,701	-4,874	1,915,240	11,285	1,958,352	0	36,451	-4,874	1,863,140	11,285	1,906,002
2009	0	36,804	27,870	1,948,860	11,285	2,024,819	0	36,554	27,870	1,896,760	11,285	1,972,469
2010	0	36,898	-32,264	1,977,200	11,285	1,993,119	0	36,648	-32,264	1,925,100	11,285	1,940,769
2011	0	36,960	21,966	1,998,315	11,285	2,068,526	0	36,710	21,966	1,946,215	11,285	2,016,176
2012	0	36,957	-18,833	2,019,430	11,285	2,048,839	0	36,707	-18,833	1,967,330	11,285	1,996,489
2013	0	36,941	17,963	2,040,545	11,285	2,106,734	0	36,691	17,963	1,988,445	11,285	2,054,384
2014	0	36,868	-28,551	2,061,660	11,285	2,081,262	0	36,618	-28,551	2,009,560	11,285	2,028,912
2015	0	37,148	30,706	2,082,775	11,285	2,161,914	0	36,898	30,706	2,030,675	11,285	2,109,564
2016	0	36,387	-50,444	2,105,330	11,285	2,102,558	0	36,137	-50,444	2,053,230	11,285	2,050,208
2017	0	36,582	30,553	2,127,885	11,285	2,206,305	0	36,332	30,553	2,075,785	11,285	2,153,955
2018	0	36,646	-8,650	2,150,440	11,285	2,189,721	0	36,396	-8,650	2,098,340	11,285	2,137,371
2019	0	36,755	-30,331	2,172,995	11,285	2,190,704	0	36,505	-30,331	2,120,895	11,285	2,138,354
2020	0	36,598	19,611	2,195,550	11,285	2,263,044	0	36,348	19,611	2,143,450	11,285	2,210,694
2021	0	36,785	20,083	2,214,185	11,285	2,282,338	0	36,535	20,083	2,162,085	11,285	2,229,988
2022	0	36,806	-22,855	2,230,140	11,285	2,255,376	0	36,556	-22,855	2,178,040	11,285	2,203,026
2023	0	36,903	26,636	2,246,060	11,285	2,320,884	0	36,653	26,636	2,193,960	11,285	2,268,534
2024	0	36,870	-2,379	2,261,980	11,285	2,307,756	0	36,620	-2,379	2,209,880	11,285	2,255,406
2025	0	36,523	-18,374	2,277,900	11,285	2,307,334	0	36,273	-18,374	2,225,800	11,285	2,254,984
2026	0	36,405	1,623	2,293,380	11,285	2,342,693	0	36,155	1,623	2,241,280	11,285	2,290,343
2027	0	36,469	31,347	2,308,860	11,285	2,387,961	0	36,219	31,347	2,256,760	11,285	2,335,611
2028	0	36,470	-15,157	2,324,340	11,285	2,356,938	0	36,220	-15,157	2,272,240	11,285	2,304,588
2029	0	36,944	-2,298	2,339,820	11,285	2,385,751	0	36,694	-2,298	2,287,720	11,285	2,333,401
2030	0	36,678	-14,347	2,349,200	11,285	2,382,816	0	36,428	-14,347	2,297,100	11,285	2,330,466
2031	0	36,618	26,583	2,395,620	11,285	2,470,106	0	36,368	26,583	2,343,520	11,285	2,417,756
2032	0	36,779	-41,008	2,442,040	11,285	2,449,096	0	36,529	-41,008	2,389,940	11,285	2,396,746
2033	0	36,725	14,804	2,488,460	11,285	2,551,274	0	36,475	14,804	2,436,360	11,285	2,498,924
2034	0	36,533	-23,884	2,534,880	11,285	2,558,814	0	36,283	-23,884	2,482,780	11,285	2,506,464
2035	0	36,715	28,939	2,581,300	11,285	2,658,239	0	36,465	28,939	2,529,200	11,285	2,605,889

TABLE B-6: ANNUAL WATER QUANTITIES CONVEYED THRU EACH PUMPING

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (continued)											
	TEHACHAPI DIVISION						MOJAVE DIVISION					
	A.D. 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)
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	49,492	-60,723	997,193	6,009	991,971	0	28,053	372	510,031	1,529	539,985
1987	0	49,537	55,752	1,277,730	6,580	1,389,599	0	27,985	-3,137	752,446	1,630	778,924
1988	0	35,690	21,995	1,290,028	6,680	1,354,393	0	20,919	1,945	762,666	1,630	787,160
1989	0	35,101	-21,075	1,293,698	8,810	1,316,534	0	20,612	-3,381	764,238	3,130	784,599
1990	0	35,322	-1,493	1,303,469	11,480	1,348,778	0	20,747	3,486	772,203	5,630	802,066
1991	0	35,416	23,657	1,346,527	11,285	1,416,885	0	20,897	13,462	812,978	5,435	852,772
1992	0	35,331	-12,802	1,380,162	11,285	1,413,976	0	20,635	-24,499	844,327	5,435	845,898
1993	0	35,081	-50,476	1,399,497	11,285	1,395,387	0	20,652	-2,927	861,377	5,435	884,537
1994	0	35,193	67,826	1,419,582	11,285	1,533,886	0	20,671	12,392	878,426	5,435	916,924
1995	0	35,107	-87,668	1,439,766	11,285	1,398,490	0	20,631	-16,795	898,775	5,435	908,046
1996	0	35,484	67,410	1,484,347	11,285	1,598,526	0	20,840	7,908	939,570	5,435	973,753
1997	0	35,106	-61,222	1,518,578	11,285	1,503,747	0	20,602	-14,626	969,765	5,435	981,176
1998	0	35,221	78,829	1,553,559	11,285	1,678,894	0	20,581	24,781	999,960	5,435	1,050,757
1999	0	35,169	-78,763	1,585,790	11,285	1,553,481	0	20,753	-28,984	1,030,155	5,435	1,027,359
2000	0	35,090	25,412	1,606,021	11,285	1,677,808	0	20,574	6,212	1,048,350	5,435	1,080,571
2001	0	34,992	22	1,635,157	11,285	1,681,456	0	20,550	-9,944	1,075,675	5,435	1,091,716
2002	0	34,948	-3,680	1,664,293	11,285	1,706,846	0	20,573	5,626	1,103,000	5,435	1,134,634
2003	0	35,203	1,766	1,693,429	11,285	1,741,683	0	20,665	12,719	1,130,325	5,435	1,169,144
2004	0	35,192	9,311	1,729,450	11,285	1,785,238	0	20,650	-21,236	1,157,650	5,435	1,162,499
2005	0	35,014	-6,557	1,751,701	11,285	1,791,443	0	20,610	25,457	1,184,975	5,435	1,236,477
2006	0	35,056	722	1,780,041	11,285	1,827,104	0	20,538	-4,511	1,213,000	5,435	1,234,462
2007	0	35,031	-6,910	1,808,381	11,285	1,847,787	0	20,592	-5,808	1,241,025	5,435	1,261,244
2008	0	34,901	-4,874	1,831,440	11,285	1,872,752	0	20,438	-6,974	1,263,770	5,435	1,282,669
2009	0	35,004	27,870	1,865,060	11,285	1,939,219	0	20,494	23,264	1,297,075	5,435	1,346,268
2010	0	35,098	-32,264	1,893,400	11,285	1,907,519	0	20,581	-20,937	1,325,100	5,435	1,330,179
2011	0	35,160	21,966	1,914,515	11,285	1,982,926	0	20,599	-1,719	1,346,215	5,435	1,370,530
2012	0	35,157	-18,833	1,935,630	11,285	1,963,239	0	20,550	864	1,367,330	5,435	1,394,179
2013	0	35,141	17,963	1,956,745	11,285	2,021,134	0	20,473	-5,431	1,388,445	5,435	1,408,922
2014	0	35,068	-28,551	1,977,860	11,285	1,995,662	0	20,615	22,445	1,409,560	5,435	1,458,055
2015	0	35,348	30,706	1,998,975	11,285	2,076,314	0	20,650	-2,704	1,430,675	5,435	1,454,056
2016	0	34,587	-50,444	2,021,530	11,285	2,016,958	0	20,509	-8,667	1,453,230	5,435	1,470,507
2017	0	34,782	30,553	2,044,085	11,285	2,120,705	0	20,523	2,013	1,475,785	5,435	1,503,756
2018	0	34,846	-8,650	2,066,640	11,285	2,104,121	0	20,487	-4,410	1,498,340	5,435	1,519,852
2019	0	34,955	-30,331	2,089,195	11,285	2,105,104	0	20,537	-4,314	1,520,895	5,435	1,542,553
2020	0	34,798	19,611	2,111,750	11,285	2,177,444	0	20,520	6,216	1,543,450	5,435	1,575,621
2021	0	34,985	20,083	2,130,385	11,285	2,196,738	0	20,539	5,613	1,562,085	5,435	1,593,672
2022	0	35,006	-22,855	2,146,340	11,285	2,169,776	0	20,561	6,561	1,578,040	5,435	1,610,597
2023	0	35,103	26,636	2,162,260	11,285	2,235,284	0	20,632	-8,653	1,593,960	5,435	1,611,374
2024	0	35,070	-2,379	2,178,180	11,285	2,222,156	0	20,638	1,111	1,609,880	5,435	1,637,064
2025	0	34,723	-18,374	2,194,100	11,285	2,221,734	0	20,553	-2,112	1,625,800	5,435	1,649,676
2026	0	34,605	1,623	2,209,580	11,285	2,257,093	0	20,489	2,511	1,641,280	5,435	1,669,715
2027	0	34,669	31,347	2,225,060	11,285	2,302,361	0	20,433	9,544	1,656,760	5,435	1,692,172
2028	0	34,670	-15,157	2,240,540	11,285	2,271,338	0	20,520	-13,989	1,672,240	5,435	1,684,206
2029	0	35,144	-2,298	2,256,020	11,285	2,300,151	0	20,643	12,513	1,687,720	5,435	1,726,311
2030	0	34,878	-14,347	2,265,400	11,285	2,297,216	0	20,545	-2,920	1,697,100	5,435	1,720,160
2031	0	34,818	26,583	2,311,820	11,285	2,384,506	0	20,396	-7,710	1,743,520	5,435	1,761,641
2032	0	34,979	-41,008	2,358,240	11,285	2,363,496	0	20,511	-11,224	1,789,940	5,435	1,804,662
2033	0	34,925	14,804	2,404,660	11,285	2,465,674	0	20,567	11,194	1,836,360	5,435	1,873,556
2034	0	34,733	-23,884	2,451,080	11,285	2,473,214	0	20,441	-7,343	1,882,780	5,435	1,901,313
2035	0	34,915	28,939	2,497,500	11,285	2,572,639	0	20,476	709	1,929,200	5,435	1,955,820

AND POWER RECOVERY PLANT OF PROJECT TRANSPORTATION FACILITIES[a]

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (continued)											
	MOJAVE DIVISION						SANTA ANA DIVISION					
	PEARBLOSSOM PUMPING PLANT						DEVIL CANYON POWERPLANT					
	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries		Total	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries		Total
				Water Supply	Recreation					Water Supply	Recreation	
	(63)	(64)	(65)	(66)	(67)	(68)	(69)	(70)	(71)	(72)	(73)	(74)
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	37	0	0	1,275	0	1,312
1973	80,177	21,522	-2,700	52,201	72	151,272	40,848	14,745	0	51,812	0	107,405
1974	76,694	10,847	-11,149	102,839	44	179,275	74,666	8,367	-4,925	102,198	0	180,306
1975	10,000	2,364	-8,397	190,351	70	194,388	10,000	1,995	-6,719	189,526	0	194,802
1976	4,168	7,040	-16,055	236,713	152	232,018	4,168	5,180	-9,182	235,711	23	235,900
1977	0	11,398	-17,534	102,326	580	96,770	0	8,082	-5,235	101,137	469	104,453
1978	19,922	5,696	69,130	374,845	498	470,091	14,820	3,754	21,686	373,636	481	414,377
1979	12,302	6,836	-32,518	362,114	502	349,236	12,302	5,620	-27,107	356,854	485	348,154
1980	0	16,200	6,159	401,214	781	424,354	0	9,468	12,714	395,975	742	418,899
1981	0	4,992	-36,278	574,573	933	544,220	0	8,401	-23,448	569,088	807	554,848
1982	0	4,891	48,383	407,459	1,919	462,652	0	5,012	48,521	395,721	1,798	451,052
1983	0	11,745	-26,847	231,188	1,180	217,266	0	8,597	5,188	230,277	1,078	245,140
1984	0	18,526	-24,236	252,066	1,494	296,322	0	12,904	-844	250,938	1,414	264,412
1985	0	24,748	-2,676	350,758	1,076	373,906	0	13,922	-8,793	349,336	956	342,021
1986	0	22,703	372	468,943	1,349	493,367	0	13,531	3,508	467,434	1,182	485,655
1987	0	22,635	-3,137	711,553	1,430	732,481	0	13,437	-10,616	710,040	1,250	714,111
1988	0	15,569	1,945	719,738	1,430	738,682	0	8,455	12,291	717,960	1,250	739,956
1989	0	15,262	-3,381	720,080	1,430	733,391	0	8,184	-7,805	718,080	1,250	719,709
1990	0	15,397	3,486	726,775	1,430	747,088	0	8,357	3,436	724,600	1,250	737,643
1991	0	15,547	13,462	781,955	1,430	812,394	0	8,434	2,977	728,840	1,250	741,501
1992	0	15,285	-24,499	809,860	1,430	802,076	0	8,123	-21,388	756,630	1,250	744,615
1993	0	15,302	-2,927	825,165	1,430	838,970	0	8,242	12,569	771,820	1,250	793,881
1994	0	15,321	12,392	840,470	1,430	869,613	0	8,179	-3,913	787,010	1,250	792,526
1995	0	15,281	-16,795	859,075	1,430	858,991	0	8,235	-6,671	805,500	1,250	808,314
1996	0	15,490	7,908	897,470	1,430	922,298	0	8,269	7,606	843,780	1,250	860,905
1997	0	15,252	-14,626	925,365	1,430	927,421	0	8,225	-445	871,560	1,250	880,590
1998	0	15,231	24,781	953,260	1,430	994,702	0	8,250	-1,762	899,340	1,250	907,078
1999	0	15,403	-28,984	981,155	1,430	969,004	0	8,247	-13,100	927,120	1,250	923,517
2000	0	15,224	6,212	997,050	1,430	1,019,916	0	8,196	12,131	942,900	1,250	964,477
2001	0	15,200	-9,944	1,021,975	1,430	1,028,661	0	8,141	-5,525	967,710	1,250	971,576
2002	0	15,223	5,626	1,046,900	1,430	1,069,179	0	8,213	422	992,520	1,250	1,002,405
2003	0	15,315	12,719	1,071,825	1,430	1,101,289	0	8,175	3,800	1,017,330	1,250	1,030,555
2004	0	15,300	-21,236	1,096,750	1,430	1,092,244	0	8,176	-7,109	1,042,140	1,250	1,044,457
2005	0	15,260	25,457	1,121,675	1,430	1,163,822	0	8,152	6,527	1,066,950	1,250	1,082,879
2006	0	15,188	-4,511	1,146,640	1,430	1,158,747	0	8,223	4,487	1,091,800	1,250	1,105,760
2007	0	15,242	-5,808	1,171,605	1,430	1,182,469	0	8,168	-2,759	1,116,650	1,250	1,123,309
2008	0	15,088	-6,974	1,191,290	1,430	1,200,834	0	8,111	-1,946	1,136,220	1,250	1,143,635
2009	0	15,144	23,264	1,221,535	1,430	1,261,373	0	8,134	1,970	1,166,350	1,250	1,177,704
2010	0	15,231	-20,937	1,246,500	1,430	1,242,224	0	8,123	-2,498	1,191,200	1,250	1,198,075
2011	0	15,249	-1,719	1,264,415	1,430	1,279,375	0	8,093	-12,918	1,209,000	1,250	1,205,425
2012	0	15,200	864	1,282,330	1,430	1,299,824	0	8,092	5,934	1,226,800	1,250	1,242,076
2013	0	15,123	-5,431	1,300,245	1,430	1,311,367	0	8,064	5,654	1,244,600	1,250	1,259,568
2014	0	15,265	22,445	1,318,160	1,430	1,357,300	0	8,178	-6,134	1,262,400	1,250	1,265,694
2015	0	15,300	-2,704	1,336,075	1,430	1,350,101	0	8,167	5,552	1,280,200	1,250	1,295,169
2016	0	15,159	-8,667	1,355,630	1,430	1,363,552	0	8,090	-2,589	1,299,640	1,250	1,306,391
2017	0	15,173	2,013	1,375,185	1,430	1,393,801	0	8,114	5,113	1,319,080	1,250	1,333,557
2018	0	15,137	-4,410	1,394,740	1,430	1,406,897	0	8,098	-2,075	1,338,520	1,250	1,345,793
2019	0	15,187	-4,314	1,414,295	1,430	1,426,598	0	8,110	-293	1,357,960	1,250	1,367,027
2020	0	15,170	6,216	1,433,850	1,430	1,456,666	0	8,115	2,796	1,377,400	1,250	1,389,561
2021	0	15,189	5,613	1,447,685	1,430	1,469,917	0	8,133	-10,583	1,391,120	1,250	1,389,920
2022	0	15,211	6,561	1,458,840	1,430	1,482,042	0	8,086	8,228	1,402,240	1,250	1,419,804
2023	0	15,282	-8,653	1,469,960	1,430	1,478,019	0	8,158	-638	1,413,360	1,250	1,422,130
2024	0	15,288	1,111	1,481,080	1,430	1,498,909	0	8,161	-5,444	1,424,480	1,250	1,428,447
2025	0	15,203	-2,112	1,492,200	1,430	1,506,721	0	8,110	3,277	1,435,600	1,250	1,448,237
2026	0	15,139	2,511	1,501,580	1,430	1,520,660	0	8,059	5,501	1,444,980	1,250	1,459,790
2027	0	15,083	9,544	1,510,960	1,430	1,537,017	0	8,115	-6,005	1,454,360	1,250	1,457,720
2028	0	15,170	-13,989	1,520,340	1,430	1,522,951	0	8,107	323	1,463,740	1,250	1,473,420
2029	0	15,293	12,513	1,529,720	1,430	1,558,956	0	8,092	5,342	1,473,120	1,250	1,487,804
2030	0	15,195	-2,920	1,539,100	1,430	1,552,805	0	8,122	-2,246	1,482,500	1,250	1,489,626
2031	0	15,046	-7,710	1,585,520	1,430	1,594,286	0	8,091	2,364	1,528,920	1,250	1,540,625
2032	0	15,161	-11,224	1,631,940	1,430	1,637,307	0	8,093	-1,974	1,575,340	1,250	1,582,709
2033	0	15,217	11,194	1,678,360	1,430	1,706,201	0	8,099	164	1,621,760	1,250	1,631,273
2034	0	15,091	-7,343	1,724,780	1,430	1,733,958	0	8,062	-1,054	1,668,180	1,250	1,676,438
2035	0	15,126	709	1,771,200	1,430	1,788,465	0	8,081	-10,541	1,714,600	1,250	1,713,390

TABLE B-6: ANNUAL WATER QUANTITIES CONVEYED THRU EACH PUMPING

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (continued)											
	WEST BRANCH, CALIFORNIA AQUEDUCT											
	OSO PUMPING PLANT						WILLIAM E. WARNE POWERPLANT					
	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries		Total	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries		Total
				Water Supply	Recreation					Water Supply	Recreation	
	(75)	(76)	(77)	(78)	(79)	(80)	(81)	(82)	(83)	(84)	(85)	(86)
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	2,444	133	0	0	0	2,577	0	0	0	0	0	0
1972	63,883	6,557	-6,405	71,991	6,481	142,507	0	0	0	0	0	0
1973	124,461	16,995	4,029	155,317	1,075	301,877	0	0	0	0	0	0
1974	160,860	12,702	-4,146	209,172	2,064	380,652	0	0	0	0	0	0
1975	93,352	23,008	7,704	374,306	3,288	501,658	0	0	0	0	0	0
1976	56,954	15,845	-136,116	420,708	1,429	358,820	0	0	0	0	0	0
1977	0	4,407	-98,685	122,447	-20	28,149	0	0	0	0	0	0
1978	45,105	9,061	52,774	171,139	176	278,255	0	0	0	0	0	0
1979	0	25,355	-18,781	145,598	0	152,172	0	0	0	0	0	0
1980	0	24,576	-140,168	165,931	481	50,820	0	0	0	0	0	0
1981	0	15,254	59,637	283,264	3,179	361,334	0	0	0	0	0	0
1982	0	24,292	60,024	360,878	2,126	447,320	0	24,420	60,024	360,878	2,126	447,448
1983	0	23,601	-74,308	166,995	6,111	122,399	0	20,780	-74,308	166,995	6,111	119,578
1984	0	11,630	-139,219	275,212	2,208	149,831	0	13,572	-139,219	275,212	2,208	151,773
1985	0	29,403	141,492	403,097	874	574,866	0	29,286	141,492	403,097	874	574,749
1986	0	21,389	-61,095	487,162	4,480	451,936	0	19,479	-61,095	487,162	4,480	450,026
1987	0	21,502	58,889	525,284	4,950	610,625	0	19,592	58,889	525,284	4,950	608,715
1988	0	14,721	20,050	527,362	5,050	567,183	0	12,811	20,050	527,362	5,050	565,273
1989	0	14,439	-17,694	529,460	5,680	531,885	0	12,529	-17,694	529,460	5,680	529,975
1990	0	14,525	-4,979	531,266	5,850	546,662	0	12,615	-4,979	531,266	5,850	544,752
1991	0	14,469	10,195	533,549	5,850	564,063	0	12,559	10,195	533,549	5,850	562,153
1992	0	14,646	11,697	535,835	5,850	568,028	0	12,736	11,697	535,835	5,850	566,118
1993	0	14,379	-47,549	538,120	5,850	510,800	0	12,469	-47,549	538,120	5,850	508,890
1994	0	14,472	55,434	541,156	5,850	616,912	0	12,562	55,434	541,156	5,850	615,002
1995	0	14,426	-70,873	540,991	5,850	490,394	0	12,516	-70,873	540,991	5,850	488,484
1996	0	14,594	59,502	544,777	5,850	624,723	0	12,684	59,502	544,777	5,850	622,813
1997	0	14,454	-46,596	548,813	5,850	522,521	0	12,544	-46,596	548,813	5,850	520,611
1998	0	14,590	54,048	553,599	5,850	628,087	0	12,680	54,048	553,599	5,850	626,177
1999	0	14,366	-49,779	555,635	5,850	526,072	0	12,456	-49,779	555,635	5,850	524,162
2000	0	14,466	19,200	557,671	5,850	597,187	0	12,556	19,200	557,671	5,850	595,277
2001	0	14,392	9,966	559,482	5,850	589,690	0	12,482	9,966	559,482	5,850	587,780
2002	0	14,325	-9,306	561,293	5,850	572,162	0	12,415	-9,306	561,293	5,850	570,252
2003	0	14,488	-10,953	563,104	5,850	572,489	0	12,578	-10,953	563,104	5,850	570,579
2004	0	14,492	30,547	571,800	5,850	622,689	0	12,582	30,547	571,800	5,850	620,779
2005	0	14,354	-32,014	566,726	5,850	554,916	0	12,444	-32,014	566,726	5,850	553,006
2006	0	14,468	5,233	567,041	5,850	592,592	0	12,558	5,233	567,041	5,850	590,682
2007	0	14,389	-1,102	567,356	5,850	586,493	0	12,479	-1,102	567,356	5,850	584,583
2008	0	14,413	2,100	567,670	5,850	590,033	0	12,503	2,100	567,670	5,850	588,123
2009	0	14,460	4,606	567,985	5,850	592,901	0	12,550	4,606	567,985	5,850	590,991
2010	0	14,467	-11,327	568,300	5,850	577,290	0	12,557	-11,327	568,300	5,850	575,380
2011	0	14,511	23,685	568,300	5,850	612,346	0	12,601	23,685	568,300	5,850	610,436
2012	0	14,557	-19,697	568,300	5,850	569,010	0	12,647	-19,697	568,300	5,850	567,100
2013	0	14,618	23,394	568,300	5,850	612,162	0	12,708	23,394	568,300	5,850	610,252
2014	0	14,403	-50,996	568,300	5,850	537,557	0	12,493	-50,996	568,300	5,850	535,647
2015	0	14,648	33,410	568,300	5,850	622,208	0	12,738	33,410	568,300	5,850	620,298
2016	0	14,028	-41,777	568,300	5,850	546,401	0	12,118	-41,777	568,300	5,850	544,491
2017	0	14,209	28,540	568,300	5,850	616,899	0	12,299	28,540	568,300	5,850	614,989
2018	0	14,309	-4,240	568,300	5,850	584,219	0	12,399	-4,240	568,300	5,850	582,309
2019	0	14,368	-26,017	568,300	5,850	562,501	0	12,458	-26,017	568,300	5,850	560,591
2020	0	14,228	13,395	568,300	5,850	601,773	0	12,318	13,395	568,300	5,850	599,863
2021	0	14,396	14,470	568,300	5,850	603,016	0	12,486	14,470	568,300	5,850	601,106
2022	0	14,395	-29,416	568,300	5,850	559,129	0	12,485	-29,416	568,300	5,850	557,219
2023	0	14,421	35,289	568,300	5,850	623,860	0	12,511	35,289	568,300	5,850	621,950
2024	0	14,382	-3,490	568,300	5,850	585,042	0	12,472	-3,490	568,300	5,850	583,132
2025	0	14,120	-16,262	568,300	5,850	572,008	0	12,210	-16,262	568,300	5,850	570,098
2026	0	14,066	-888	568,300	5,850	587,328	0	12,156	-888	568,300	5,850	585,418
2027	0	14,186	21,803	568,300	5,850	610,139	0	12,276	21,803	568,300	5,850	608,229
2028	0	14,100	-1,168	568,300	5,850	587,082	0	12,190	-1,168	568,300	5,850	585,172
2029	0	14,451	-14,811	568,300	5,850	573,790	0	12,541	-14,811	568,300	5,850	571,880
2030	0	14,283	-11,427	568,300	5,850	577,006	0	12,373	-11,427	568,300	5,850	575,096
2031	0	14,372	34,293	568,300	5,850	622,815	0	12,462	34,293	568,300	5,850	620,905
2032	0	14,418	-29,784	568,300	5,850	558,784	0	12,508	-29,784	568,300	5,850	556,874
2033	0	14,308	3,610	568,300	5,850	592,068	0	12,398	3,610	568,300	5,850	590,158
2034	0	14,242	-16,541	568,300	5,850	571,851	0	12,332	-16,541	568,300	5,850	569,941
2035	0	14,389	28,230	568,300	5,850	616,769	0	12,479	28,230	568,300	5,850	614,859

AND POWER RECOVERY PLANT OF PROJECT TRANSPORTATION FACILITIES[a]

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (continued)												
	WEST BRANCH, CALIFORNIA AQUEDUCT						COASTAL BRANCH, CALIFORNIA AQUEDUCT						
	CASTAIC POWERPLANT						LAS PERILLAS AND BADGER HILL PUMPING PLANTS				DEVIL'S DEN, SAWTOOTH, AND POLONIO PUMPING PLANTS AND SAN LUIS OBISPO POWERPLANT		
	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total	Initial Fill Water	Operational Losses	Water Supply Delivery	Total	Operational Losses	Water Supply Delivery	Total
	(87)	(88)	(89)	(90)	(91)	(92)	(93)	(94)	(95)	(96)	(97)	(98)	(99)
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	210	873	79,039	80,122	0	0	0
1969	0	0	0	0	0	0	0	1,042	62,064	63,106	0	0	0
1970	0	0	0	0	0	0	0	638	83,649	84,287	0	0	0
1971	0	0	0	0	0	0	0	3,455	110,971	114,426	0	0	0
1972	57,364	1,788	-6,162	71,938	6,481	131,409	0	1,745	121,755	123,500	0	0	0
1973	37,198	6,430	4,542	155,297	1,075	204,542	0	5,479	78,645	84,124	0	0	0
1974	82,364	1,772	-950	209,136	541	292,863	0	7,344	78,174	85,518	0	0	0
1975	90,460	5,002	-1,534	374,280	1,563	469,771	0	5,819	85,216	91,035	0	0	0
1976	55,990	-7,695	-132,036	420,684	1,429	338,372	0	6,562	90,058	96,620	0	0	0
1977	0	-1,485	-102,532	122,447	-20	18,410	0	5,777	40,579	46,356	0	0	0
1978	45,105	-2,264	129,523	171,139	176	343,679	0	9,085	92,604	101,689	0	0	0
1979	0	-2,339	-20,400	145,598	0	122,859	0	10,896	123,155	134,051	0	0	0
1980	0	991	-118,026	165,931	481	49,377	0	9,449	111,379	120,828	0	0	0
1981	0	-44,416	47,244	283,264	2,704	288,796	0	13,232	109,754	122,986	0	0	0
1982	0	-60,135	59,069	360,878	1,187	360,999	0	7,984	95,776	103,760	0	0	0
1983	0	-33,418	-46,904	166,995	2,618	89,291	0	5,710	100,518	106,228	0	0	0
1984	0	-29,618	-139,545	275,212	2,201	108,250	0	5,740	126,387	132,127	0	0	0
1985	0	-4,622	135,007	403,097	844	534,326	0	7,563	120,823	128,386	0	0	0
1986	0	11,792	-65,907	487,162	4,188	437,235	0	590	119,952	120,542	0	0	0
1987	0	11,905	58,889	525,284	4,630	600,708	0	590	119,200	119,790	0	0	0
1988	0	6,584	20,050	527,362	4,730	558,726	0	590	121,900	122,490	0	0	0
1989	0	6,302	-17,694	529,460	4,930	522,998	0	590	123,900	124,490	0	0	0
1990	0	6,388	-4,979	531,266	5,100	537,775	0	590	126,900	127,490	0	0	0
1991	0	6,332	10,195	533,299	5,100	554,926	0	590	126,900	127,490	0	0	0
1992	0	6,509	11,697	535,335	5,100	558,641	0	590	126,900	127,490	0	0	0
1993	0	6,242	-47,549	537,370	5,100	501,163	0	1,140	197,386	198,526	550	70,486	71,036
1994	0	6,335	55,434	540,156	5,100	607,025	0	1,140	197,386	198,526	550	70,486	71,036
1995	0	6,289	-70,873	539,741	5,100	480,257	0	1,140	197,386	198,526	550	70,486	71,036
1996	0	6,457	59,502	543,277	5,100	614,336	0	1,140	197,386	198,526	550	70,486	71,036
1997	0	6,317	-46,596	546,813	5,100	511,634	0	1,140	197,386	198,526	550	70,486	71,036
1998	0	6,453	54,048	551,099	5,100	616,700	0	1,140	197,386	198,526	550	70,486	71,036
1999	0	6,229	-49,779	552,385	5,100	513,935	0	1,140	197,386	198,526	550	70,486	71,036
2000	0	6,329	19,200	553,671	5,100	584,300	0	1,140	197,386	198,526	550	70,486	71,036
2001	0	6,255	9,966	555,282	5,100	576,603	0	1,140	197,386	198,526	550	70,486	71,036
2002	0	6,188	-9,306	556,893	5,100	558,875	0	1,140	197,386	198,526	550	70,486	71,036
2003	0	6,351	-10,953	558,504	5,100	559,002	0	1,140	197,386	198,526	550	70,486	71,036
2004	0	6,355	30,547	567,000	5,100	609,002	0	1,140	197,386	198,526	550	70,486	71,036
2005	0	6,217	-32,014	561,726	5,100	541,029	0	1,140	197,386	198,526	550	70,486	71,036
2006	0	6,331	5,233	562,041	5,100	578,705	0	1,140	197,386	198,526	550	70,486	71,036
2007	0	6,252	-1,102	562,356	5,100	572,606	0	1,140	197,386	198,526	550	70,486	71,036
2008	0	6,276	2,100	562,670	5,100	576,146	0	1,140	197,386	198,526	550	70,486	71,036
2009	0	6,323	4,606	562,985	5,100	579,014	0	1,140	197,386	198,526	550	70,486	71,036
2010	0	6,330	-11,327	563,300	5,100	563,403	0	1,140	197,386	198,526	550	70,486	71,036
2011	0	6,374	23,685	563,300	5,100	598,459	0	1,140	197,386	198,526	550	70,486	71,036
2012	0	6,420	-19,697	563,300	5,100	555,123	0	1,140	197,386	198,526	550	70,486	71,036
2013	0	6,481	23,394	563,300	5,100	598,275	0	1,140	197,386	198,526	550	70,486	71,036
2014	0	6,266	-50,996	563,300	5,100	523,670	0	1,140	197,386	198,526	550	70,486	71,036
2015	0	6,511	33,410	563,300	5,100	608,321	0	1,140	197,386	198,526	550	70,486	71,036
2016	0	5,891	-41,777	563,300	5,100	532,514	0	1,140	197,386	198,526	550	70,486	71,036
2017	0	6,072	28,540	563,300	5,100	603,012	0	1,140	197,386	198,526	550	70,486	71,036
2018	0	6,172	-4,240	563,300	5,100	570,332	0	1,140	197,386	198,526	550	70,486	71,036
2019	0	6,231	-26,017	563,300	5,100	548,614	0	1,140	197,386	198,526	550	70,486	71,036
2020	0	6,091	13,395	563,300	5,100	587,886	0	1,140	197,386	198,526	550	70,486	71,036
2021	0	6,259	14,470	563,300	5,100	589,129	0	1,140	197,386	198,526	550	70,486	71,036
2022	0	6,258	-29,416	563,300	5,100	545,242	0	1,140	197,386	198,526	550	70,486	71,036
2023	0	6,284	35,289	563,300	5,100	609,973	0	1,140	197,386	198,526	550	70,486	71,036
2024	0	6,245	-3,490	563,300	5,100	571,155	0	1,140	197,386	198,526	550	70,486	71,036
2025	0	5,983	-16,262	563,300	5,100	558,121	0	1,140	197,386	198,526	550	70,486	71,036
2026	0	5,929	-888	563,300	5,100	573,441	0	1,140	197,386	198,526	550	70,486	71,036
2027	0	6,049	21,803	563,300	5,100	596,252	0	1,140	197,386	198,526	550	70,486	71,036
2028	0	5,963	-1,168	563,300	5,100	573,195	0	1,140	197,386	198,526	550	70,486	71,036
2029	0	6,314	-14,811	563,300	5,100	559,903	0	1,140	197,386	198,526	550	70,486	71,036
2030	0	6,146	-11,427	563,300	5,100	563,119	0	1,140	197,386	198,526	550	70,486	71,036
2031	0	6,235	34,293	563,300	5,100	608,928	0	1,140	197,386	198,526	550	70,486	71,036
2032	0	6,281	-29,784	563,300	5,100	544,897	0	1,140	197,386	198,526	550	70,486	71,036
2033	0	6,171	3,610	563,300	5,100	578,181	0	1,140	197,386	198,526	550	70,486	71,036
2034	0	6,105	-16,541	563,300	5,100	557,964	0	1,140	197,386	198,526	550	70,486	71,036
2035	0	6,252	28,230	563,300	5,100	602,882	0	1,140	197,386	198,526	550	70,486	71,036

TABLE B-7: RECONCILIATION OF CAPITAL COSTS ALLOCATED TO WATER SUPPLY AND POWER GENERATION

(in thousands of dollars)

	Project Costs Allocated to Water Supply and Power Generation								
	Misc. Income Credited to Construction (a	Allowance for Future Price Escalation (b	Costs of Construction of Delivery Structures (c	Costs of Requested Excess Capacity and Future Enlargement (d	Capital Cost Component of Delta Water Charge (e	Capital Cost Component of Transportation Water Charge (f	Water Supply and Power Total	Capital Cost Allocated to Other Purposes	Total State Water Project Capital Cost
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CONSERVATION FACILITIES:									
Upper Feather									
Frenchman Dam and Lake	173	0	0	0	599	0	772	2,871	3,643
Grizzly Valley Dam and Lake Davis	28	0	0	0	25	0	53	5,945	5,998
Antelope Dam and Lake	0	0	0	0	0	0	0	5,361	5,361
Abbey Bridge Dam and Reservoir	0	0	0	0	0	0	0	518	518
Dixie Refuge Dam and Reservoir	0	0	0	0	0	0	0	235	235
TOTAL, Upper Feather Division	201	0	0	0	624	0	825	14,930	15,755
Oroville Division									
Multipurpose Facilities	3,040	182	149	0	207,463	0	210,834	89,050	299,884
Specific Power Facilities	0	0	0	0	257,210	0	257,210	0	257,210
TOTAL, Oroville Division	3,040	182	149	0	464,673	0	468,044	89,050	557,094
California Aqueduct									
North San Joaquin Division	196	1,047	0	0	66,978	0	68,221	2,542	70,763
San Luis Division	411	61	0	0	96,128	0	96,600	4,001	100,601
TOTAL, California Aqueduct	607	1,108	0	0	163,106	0	164,821	6,543	171,364
Delta Facilities	2,754	1,469	0	0	115,065	0	119,288	18,503	137,791
Planning and Preoperations	3	23,269	0	0	80,120	0	103,392	2,321	105,713
TOTAL CONSERVATION FACILITIES	6,605	26,028	149	0	823,588	0	856,370	131,347	987,717
TRANSPORTATION FACILITIES									
Upper Feather Division									
Grizzly Valley Pipeline	0	0	0	0	0	341	341	0	341
North Bay Aqueduct	88	972	496	0	0	93,106	94,662	0	94,662
South Bay Aqueduct	1,609	80	382	0	0	51,015	53,086	21,395	74,481
California Aqueduct									
North San Joaquin Division	437	2,328	15	0	0	148,168	150,948	5,812	156,760
San Luis Division	84	122	0	0	0	101,642	101,848	6,549	108,397
South San Joaquin Division	292	117	3,263	2,093	0	259,009	264,774	15,899	280,673
Tehachapi Division	25	94	4	5,230	0	289,340	294,693	17,726	312,419
Mojave Division	558	971	423	0	0	291,445	293,397	19,461	312,858
Santa Ana Division	340	11	2,832	9,661	0	163,653	176,497	16,491	192,988
West Branch	35,209	786	2,729	37	0	447,815	486,576	33,060	519,636
Coastal Branch	10	23	93	0	0	18,698	18,824	104	18,928
TOTAL, California Aqueduct	36,955	4,452	9,359	17,021	0	1,719,770	1,787,557	115,102	1,902,659
TOTAL, TRANSPORTATION FACILITIES	38,652	5,504	10,237	17,021	0	1,864,232	1,935,646	136,497	2,072,143
EAST BRANCH ENLARGEMENT	0	0	0	0	0	278,134	278,134	0	278,134
SAN JOAQUIN DRAINAGE FACILITIES	0	0	0	0	0	0	0	32,366	32,366
OFF-AQUEDUCT									
POWER GENERATION FACILITIES	16	1,953	0	0	0	483,365	485,334	0	485,334
UNASSIGNED AND DAVIS-GRUNSKY	0	0	0	0	0	0	0	140,036	140,036
SUBTOTAL	45,273	33,485	10,386	17,021	823,588	2,625,731	3,555,484	440,246	3,995,730
LESS:									
1996-2035 COSTS	0	-22,028	0	0	-19,576	0	-41,604	-2,321	-43,925
TOTAL	45,273	11,457	10,386	17,021	804,012	2,625,731	3,513,880	437,925	3,951,805(g

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, 1985.
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) See Table 20, Chapter VII.

TABLE B-8: CAPITAL COSTS OF REQUESTED DELIVERY STRUCTURES

Project Service Area and Water Supply Contractor	Calendar Year Capital Costs (dollars)[a]						
	1952 - 1985	1986	1987	1988	1989	1990	Total
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
Total	148,863	0	0	0	0	0	148,863
NORTH BAY AREA							
Napa County Flood Control and Water Conservation District	10,068	2,000	0	0	0	0	12,068
Solano County Flood Control and Water Conservation District	0	115,000	369,000	0	0	0	484,000
Total	10,068	117,000	369,000	0	0	0	496,068
SOUTH BAY AREA							
Alameda County Flood Control and Water Conservation District, Zone 7	224,358	0	0	0	0	0	224,358
Alameda County Water District	143,789	0	0	0	0	0	143,789
Santa Clara Valley Water District	14,198	0	0	0	0	0	14,198
Total	382,345	0	0	0	0	0	382,345
SAN JOAQUIN VALLEY AREA							
Devil's Den Water District	77,557	0	0	0	0	0	77,557
Dudley Ridge Water District	287,503	0	0	0	0	0	287,503
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	2,708,953	3,000	0	0	0	0	2,711,953
Oak Flat Water District	13,696	0	0	0	0	0	13,696
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
Total	3,377,870	3,000	0	0	0	0	3,380,870
SOUTHERN CALIFORNIA AREA							
Antelope Valley-East Kern Water Agency	329,347	0	0	0	0	0	329,347
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	0	0	0	0	65,377
Palmdale Water District	24,509	1,500	0	0	0	0	26,009
San Bernardino Valley Municipal Water District	597,553	0	0	0	0	0	597,553
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	0	0	0	0	4,261,525
Ventura County Flood Control District	79,699	0	0	0	0	0	79,699
Total	5,976,043	1,500	0	0	0	0	5,977,543
TOTAL ALL AREAS	9,895,189	121,500	369,000	0	0	0	10,385,689

a) Approximate only, not to be construed as invoice amounts.
b) Not a SWP water supply contractor. A delivery structure was constructed on the Thermalito Power Canal at the District's expense as part of a water exchange agreement.
c) Not a SWP water supply contractor, but has contracted for surplus water.

TABLE B-9: CAPITAL COSTS OF

(in dollars unless otherwise indicated)

Calendar Year	Total Advance Payments and Credits for Excess Capacity	Total Incremental Costs for Excess Capacity	Overpayment (+) or Underpayment (-)[a]	Annual Surplus Money Investment Fund Interest Rate [b] Jan-Jun	Jul-Dec	Net Over or Underpayment With Interest[c]
	(1)	(2)	(3)	(4)	(5)	(6)
	THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA					
1965	0	158,000	-158,000	3.968%	4.184%	-163,412
1966	8,056,000	435,800	7,620,200	4.540%	5.057%	7,701,103
1967	9,094,963	1,878,270	7,216,693	4.815%	4.744%	15,524,533
1968	1,523,252	2,887,351	-1,364,099	5.330%	5.540%	14,959,187
1969	8,310,651	3,059,310	5,251,341	5.946%	6.389%	21,369,973
1970	3,426,736	2,397,102	1,029,634	7.071%	7.125%	23,986,083
1971	1,086,045	1,146,648	-60,603	5.154%	5.580%	25,238,017
1972	-4,244,807	487,394	-4,732,201	4.477%	4.977%	21,532,965
1973	-15,913,829	25,041	-15,938,870	6.023%	8.717%	6,014,116
1974	0	37,775	-37,775	9.222%	10.351%	6,576,393
1975	0	2,085	-2,085	7.089%	6.791%	7,038,515
1976	0	0	0	6.048%	6.021%	7,469,662
1977	0	0	0	5.788%	6.182%	7,923,403
1978	0	0	0	7.171%	8.096%	8,539,736
1979	0	0	0	8.979%	9.671%	9,354,605
1980	0	0	0	11.500%	11.500%	10,461,314
Totals	11,339,011	12,514,776	-1,175,765	-	-	10,461,314
	SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT					
1967	0	25,730	-25,730	4.815%	4.744%	-26,611
1968	184,422	44,053	140,369	5.330%	5.540%	117,587
1969	49,052	38,075	10,977	5.946%	6.389%	136,751
1970	44,911	17,959	26,952	7.071%	7.125%	175,186
1971	61,588	5,900	55,688	5.154%	5.580%	242,927
1972	-20,263	6,835	-27,098	4.477%	4.977%	226,230
1973	-180,465	0	-180,465	6.023%	8.717%	49,198
1974	0	0	0	9.222%	10.351%	54,130
1975	0	0	0	7.089%	6.791%	57,952
1976	0	0	0	6.048%	6.021%	61,501
1977	0	0	0	5.788%	6.182%	65,237
1978	0	0	0	7.171%	8.096%	70,312
1979	0	0	0	8.979%	9.671%	77,021
1980	0	0	0	11.500%	11.500%	86,133
Totals	139,245	138,552	693	-	-	86,133
	ANTELOPE VALLEY-EAST KERN WATER AGENCY					
1968	85,495	1,645	83,850	5.330%	5.540%	86,962
1969	52,625	6,326	46,299	5.946%	6.389%	140,964
1970	101,648	15,076	86,572	7.071%	7.125%	243,222
1971	34,062	11,748	22,314	5.154%	5.580%	279,673
1972	-12,794	2,018	-14,812	4.477%	4.977%	277,552
1973	-205,354	308	-205,662	6.023%	8.717%	77,288
1974	0	96	-96	9.222%	10.351%	84,933
1975	0	0	0	7.089%	6.791%	90,929
1976	0	190	-190	6.048%	6.021%	96,300
1977	0	0	0	5.788%	6.182%	102,150
1978	0	0	0	7.171%	8.096%	110,096
1979	0	0	0	8.979%	9.671%	120,601
1980	0	0	0	11.500%	11.500%	134,869
Totals	55,682	37,407	18,275	-	-	134,869

a) Overpayment or underpayment for each calendar year - column (1) minus column (2).
b) Interest rates shown are annual rates. Interest is credited daily at applicable rates on funds deposited in the State's Surplus Money Investment Fund.
c) Amounts shown are end-of-year balances. Interest on overpayments is credited at applicable Surplus Money Investment Fund Interest Rates shown in columns (4) and (5). Interest on underpayments is charged at the 1980 Project Interest Rate of 4.584 percent.

REQUESTED EXCESS PEAKING CAPACITY

(in dollars)

Reach Number	Item	ANNUAL REQUIRED ADVANCE OF FUNDS													
		Incremental Costs and Advance Payments by Calendar Year													Reach Totals
		1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1981	
		(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
		THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA													
8C	Incremental Costs		1,000	1,000											2,000
8D	Incremental Costs		43,500	43,500											87,000
9	Incremental Costs	13,500	27,000	27,000	13,500										81,000
10A	Incremental Costs	14,800	29,700	29,700	14,800										89,000
11B	Incremental Costs	10,100	18,300	18,300	9,200										55,900
12D	Incremental Costs	1,800		19,300	25,800	12,900									59,800
12E	Incremental Costs	1,800		12,400	18,800	10,800									43,800
13B	Incremental Costs			12,600	37,800	31,600									82,000
14A	Incremental Costs	2,500	500	11,100	80,216	107,504	124,069	37,519	6,413	381	87				370,289
14B	Incremental Costs	1,200	1,800		19,100	19,100	12,800								54,000
14C	Incremental Costs	1,800	900		13,500	13,500	9,000								38,700
15A	Incremental Costs	700		14,000	66,947	133,357	128,099	54,821	5,327	946	2,076				406,273
16A	Incremental Costs	700		18,900	137,894	182,000	211,608	133,927	26,203	5,767	6,156				723,155
17E	Incremental Costs		51,500	444,600	537,247	860,024	998,985	699,281	193,286	17,947	29,456	2,085			3,834,411
17F	Incremental Costs	109,100	261,600	261,600	261,600	261,600	239,500								1,395,000
25	Incremental Costs			964,270	1,650,947	1,426,925	673,041	221,100	256,165						5,192,448
28J	Incremental Costs		304,612	13,706	296,668	65,966	230,169	1,209,586	2,017,134	235,900	4,900				4,378,641
Totals Unadjusted for past payments	Incremental Costs	158,000	740,412	1,891,976	3,184,019	3,125,276	2,627,271	2,356,234	2,504,528	260,941	42,675	2,085			16,893,417
Current Adjustments	8C thru 25														
	1. Advance Payments Applied to Incremental Costs Amendment 2 (d	0	8,056,000	9,094,963	1,523,252	8,310,651	3,426,736	1,086,045	-4,244,807	-14,381,396				-356,668	12,514,776
	8C thru 25														
	2. Interest Credits-Amendment 2 (e									-1,532,433				-10,104,646 (h	-11,637,079
	28J														
	3. Advance Payments Applied to Incremental Costs Amendment 5 (f	0	1,240,000	1,483,180	2,469,325	-927,035	1,729,160	3,215,258	2,967,475	1,690,000	-9,488,722				4,378,641
	28J														
	4. Interest Credits-Amendment 5 (g										-2,721,803				-2,721,803
	5. Net Required Advance of Funds	0	9,296,000	10,578,143	3,992,577	7,383,616	5,155,896	4,301,303	-1,277,332	-14,223,829	-12,210,525			-10,461,314	2,534,535
		SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT													
25	Incremental Costs			25,730	44,053	38,075	17,959	5,900	6,835						138,552
Totals Unadjusted for past payments	Incremental Costs			25,730	44,053	38,075	17,959	5,900	6,835						138,552
Current Adjustments	25														
	1. Advance Payments Applied to Incremental Costs (d			0	184,422	49,052	44,911	61,588	-20,263	-174,133				-7,025	138,552
	2. Interest Credit									-6,332				-79,108	-85,440
	3. Net Required Advance of Funds			0	184,422	49,052	44,911	61,588	-20,263	-180,465				-86,133 (h	53,112
		ANTELOPE VALLEY-EAST KERN WATER AGENCY													
29A	Incremental Costs				1,645	6,326	13,376	10,048	2,018	308	96		190		34,007
29F	Incremental Costs						1,700	1,700							3,400
Totals Unadjusted for past payments	Incremental Costs				1,645	6,326	15,076	11,748	2,018	308	96		190		37,407
Current Adjustments	29A and 29F														
	1. Advance Payments Applied to Incremental Costs (d				85,495	52,625	101,648	34,062	-12,794	-189,120	0		0	-34,509	37,407
	2. Interest Credit									-16,234				-100,360	-116,594
	3. Net Required Advance of Funds				85,495	52,625	101,648	34,062	-12,794	-205,354	0		0	-134,869 (h	-79,187

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

(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)	(4A)	(5)	(6)	(7)	(8)	(9)
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	53,226	65,662	2,172	23,239	144,299	176,180	3,625	3,225	16,132
1978	38	60,342	57,158	1,867	26,996	146,363	237,250	4,494	3,668	12,903
1979	23	314,991	91,367	1,534	65,804	473,696	115,031	17,151	8,515	30,805
1980	26	391,734	105,508	1,531	123,163	621,936	399,123	17,708	8,249	31,079
1981	34	382,448	127,650	2,208	23,811	536,117	−168,306	3,589	6,520	17,302
1982	11	841,166	319,429	2,660	125,138	1,288,393	−31,351	17,110	4,427	40,120
1983	19	1,025,770	1,035,484	1,986	515,349	2,578,589	402,469	73,084	29,490	70,532
1984	25	1,805,622	2,229,954	1,514	1,050,306	5,087,396	389,165	35,003	10,046	92,001
1985	0	2,109,250	7,715,165	1,162	3,405,788	13,231,365	14,453	22,340	3,695	25,473
1986	0	13,244,035	10,777,533	1,265,932	1,382,900	26,670,400	43,100	30,100	11,700	11,958
1987	0	20,173,329	11,969,113	2,132,662	1,414,200	35,689,304	635,600	21,200	29,700	20,058
1988	0	1,393,100	393,400	74,200	191,200	2,051,900	557,700	5,300	17,800	8,944
1989	0	53,000	25,000	0	7,000	85,000	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0
1994	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	340,657	42,551,437	35,327,362	3,489,644	11,737,336	93,105,779	16,553,575	1,440,310	4,379,884	10,874,493

THRU 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	Subtotal
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
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	468,482	3,597,284	96,760	38,789	3,732,833
1981	308	1,461	1,397	5,070	−132,659	−114,151	1,487,444	202,275	1,575,568
1982	670	1,286	1,352	3,701	37,315	1,505,754	38,356	28,501	1,572,611
1983	355	4,114	6,124	19,078	605,246	665,447	69,481	258,668	993,596
1984	174	1,704	2,492	7,274	537,859	674,745	31,324	34,280	740,349
1985	165	1,128	1,772	4,212	73,238	631,774	11,185	136,892	779,851
1986	100	1,800	2,700	12,600	114,058	1,733,870	34,327	44,858	1,813,055
1987	1,000	8,100	12,100	32,800	760,558	4,063,427	77,252	58,722	4,199,401
1988	1,000	5,100	10,100	23,900	629,844	8,414,134	44,592	42,126	8,500,852
1989	0	0	0	0	0	9,871,457	59,989	33,327	9,964,773
1990	0	0	0	0	0	7,397,261	30,661	9,998	7,437,920
1991	0	0	0	0	0	1,478,386	0	0	1,478,386
1992	0	0	0	0	0	31,994	0	0	31,994
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	521,084		4,833,000		51,014,866		40,793,259		148,167,933
		3,824,120		8,588,400		87,168,593		20,206,081	

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

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SAN LUIS DIVISION						SOUTH SAN JOAQUIN DIVISION		
	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Subtotal	Reach 8C	Reach 8D	Reach 9
	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
1952	2,492	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	1,656,025	191,307	75,209	185,384	2,174,547	2,158	17,492	17,706
1981	29,113	-993,654	-40,312	-14,168	850,288	-168,733	1,145	9,667	9,527
1982	95,240	-506,023	14,987	7,560	3,490,841	3,102,605	1,678	4,945	4,208
1983	87,548	29,433	21,287	10,232	1,832,543	1,981,043	7,476	8,711	8,216
1984	33,826	-312,765	27,564	14,133	3,066,807	2,829,565	26,023	7,256	3,999
1985	56,407	66,299	16,518	7,989	557,790	705,003	5,424	4,452	3,797
1986	17,418	372,107	142,204	62,615	1,116,229	1,710,573	11,410	13,768	10,656
1987	2,115	165,685	622,851	276,865	1,812,163	2,879,679	1,320	17,823	13,202
1988	1,481	11,410	2,357	566	1,116,040	1,131,854	1,414	24,518	19,803
1989	0	0	0	0	0	0	0	14,145	14,145
1990	0	0	0	0	0	0	0	14,145	14,145
1991	0	0	0	0	0	0	0	7,544	7,544
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	14,910,398	26,416,276	22,372,906	5,856,781	32,085,354	101,641,715	750,478	12,533,387	8,365,985

THRU 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
	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)
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	18,813	15,608	27,498	34,190	1,831,436	29,169	23,023	1,763,683
1981	10,290	15,324	28,246	21,872	25,503	−1,192,102	28,974	34,604	−1,181,586
1982	4,998	4,720	6,062	5,698	13,728	−621,701	7,425	28,896	−628,585
1983	10,301	8,187	12,623	10,606	32,653	514,815	14,293	20,746	14,816
1984	4,943	27,434	92,533	49,695	20,587	107,110	77,220	64,486	−446,475
1985	4,602	3,891	2,832	3,379	4,860	86,924	4,830	2,754	30,864
1986	12,353	6,978	7,261	7,827	8,015	2,320,912	6,318	4,715	2,635,308
1987	16,597	9,147	8,298	10,467	3,112	106,370	2,735	2,452	19,897
1988	22,349	11,976	13,956	14,239	8,864	111,085	6,507	5,281	19,992
1989	15,088	8,487	13,202	10,373	12,259	13,202	9,430	8,487	2,829
1990	15,088	8,487	14,145	10,373	13,202	14,145	9,430	8,487	2,829
1991	8,487	4,715	7,544	5,658	6,601	7,544	5,658	4,715	1,886
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	9,177,830	12,165,178	10,948,607	7,485,205	15,653,490	60,043,486	8,394,463	6,977,388	40,644,430

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

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SOUTH SAN JOAQUIN DIVISION (continued)		TEHACHAPI DIVISION			MOJAVE DIVISION			
	Reach 16A	Subtotal	Reach 17E	Reach 17F	Subtotal	Reach 18A	Reach 19	Reach 19C	Reach 20A
	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)
1952	4,440	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	3,991,560	7,790,501	18,884,203	6,046	18,890,249	1,330,429	1,080,962	3,604	308,188
1981	−2,698,822	−4,887,358	−4,936,057	6,903	−4,929,154	1,353,813	853,201	4,498	48,603
1982	−1,500,452	−2,668,380	12,388,412	5,317	12,393,729	8,468,321	748,853	3,920	30,521
1983	−51,123	612,320	8,097,807	6,584	8,104,391	13,173,684	68,380	2,732	35,317
1984	−1,025,493	−990,682	−1,000,342	30,561	−969,781	9,088,329	30,182	3,307	14,177
1985	48,633	207,242	1,878,817	9,058	1,887,875	5,359,451	18,518	12,133	13,895
1986	5,533,335	10,578,856	4,705,287	40,455	4,745,742	3,391,877	5,489,203	0	3,333,128
1987	31,308	242,728	978,833	189	979,022	286,483	18,671	0	3,918,448
1988	35,174	295,158	888,872	189	889,061	108,256	19,709	0	14,522
1989	15,088	136,735	0	0	0	17,917	20,746	0	16,031
1990	15,088	139,564	0	0	0	1,886	11,316	0	8,487
1991	8,487	76,383	0	0	0	0	1,886	0	943
1992	0	0	0	0	0	0	943	0	943
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	65,869,337	259,009,264	235,017,219	54,322,668	289,339,887	50,746,243	25,604,305	237,133	22,486,950

THRU CAPITAL COST COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	MOJAVE DIVISION (continued)							SANTA ANA DIVISION	
	Reach 20B	Reach 21	Reach 22A	Reach 22B	Reach 23	Reach 24	Subtotal	Reach 25	Reach 26A
	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)
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	10,634	103,615	1,887,183	29,960	80,482
1980	284,545	133,526	121,171	2,358,540	134,230	559,963	6,315,158	31,462	181,638
1981	32,194	13,211	6,458	−865,209	523,906	203,929	2,174,604	5,861	68,934
1982	74,087	10,928	12,990	508,679	1,930,170	73,079	11,861,548	8,887	139,927
1983	54,717	22,913	8,506	349,379	4,996,722	18,215	18,730,565	4,171	510,746
1984	32,538	9,229	4,742	128,808	2,684,519	22,309	12,018,140	3,502	222,181
1985	105,414	8,512	5,777	968,579	1,106,802	29,297	7,628,378	4,744	44,867
1986	32,722	4,369,768	9,524	1,228,352	110,802	202,179	18,167,555	8,770	46,301
1987	13,391	8,298	6,129	244,520	2,075	53,185	4,551,200	8,487	14,899
1988	13,485	8,393	6,224	152,106	2,169	34,325	359,189	94	9,241
1989	15,088	8,487	6,601	55,637	2,829	21,689	165,025	0	0
1990	7,544	4,715	3,772	29,233	943	13,202	81,098	0	0
1991	943	943	943	4,715	0	4,715	15,088	0	0
1992	943	0	0	1,886	0	1,886	6,601	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	19,946,453	14,234,523	6,592,460	86,348,452	15,657,361	49,590,546	291,444,426	24,765,684	38,762,281

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

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SANTA ANA DIVISION (continued)				WEST BRANCH				
	Reach 28G[a]	Reach 28H	Reach 28J	Subtotal	Reach 29A	Reach 29 F	Reach 29G	Reach 29H	Reach 29J
	(55)	(56)	(57)	(58)	(59)	(60)	(61)	(62)	(63)
1952	4,785	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	1,541,006	4,108,143	24,537,814	550,337	204,751
1981	28,804	22,647	61,323	187,569	-851,894	2,699,888	19,806,537	94,897	28,877
1982	13,697	57,386	37,860	257,757	-436,259	348,325	17,953,359	188,981	40,158
1983	14,737	88,073	-259,966	357,761	17,725	180,526	7,505,095	251,266	19,936
1984	13,030	11,102	45,074	294,889	-305,246	66,383	3,442,839	338,604	15,153
1985	14,332	8,627	20,286	92,856	163,460	20,438	2,768,826	89,079	25,214
1986	32,722	40,077	71,385	199,255	79,589	288,558	1,189,594	152,860	13,315
1987	26,875	34,231	21,783	106,275	13,108	128,908	1,161,304	34,985	8,148
1988	471	377	5,847	16,030	10,279	28,950	2,861,628	15,182	641
1989	0	0	0	0	0	0	3,887,046	0	0
1990	0	0	0	0	0	0	303,646	0	0
1991	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	23,670,018	23,385,642	53,068,964	163,652,589	32,442,919	28,982,037	125,974,994	51,341,458	74,407,683

[a] Includes excess capacity costs (not shown in Table B-9) in the following years allocated to MWDSC and repaid under Article 24(c) of its contract: 1970, $362,000; 1971, $6,198,000; 1972, $139,000.

THRU CAPITAL COST COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)							TOTAL	GRAND TOTAL
	WEST BRANCH (continued)		COASTAL BRANCH						
	Reach 30	Subtotal	Reach 31A	Reach 33A	Reach 34	Reach 35	Subtotal		
	(64)	(65)	(66)	(67)	(68)	(69)	(70)	(71)	(72)
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	15,573,643
1978	763,445	11,222,465	37,342	81,120	1,302	3,852	123,616	15,958,601	16,383,506
1979	282,145	24,159,833	39,511	117,185	1,505	4,433	162,634	31,299,743	31,957,508
1980	2,055,206	32,997,257	199,363	403,809	1,059	3,113	607,344	74,091,543	75,181,987
1981	275,520	22,053,825	11,706	−254,776	1,284	3,778	−238,008	15,768,313	16,171,805
1982	338,464	18,433,028	−10,665	−146,080	472	1,381	−154,892	44,798,006	46,123,725
1983	496,543	8,471,091	67,912	−5,604	684	2,006	64,998	39,315,765	42,499,619
1984	1,089,065	4,646,798	−32,889	−96,204	964	2,832	−125,297	18,443,981	24,069,261
1985	244,245	3,311,262	17,890	18,588	1,200	3,528	41,206	14,653,673	27,958,276
1986	−322,034	1,401,882	662,500	101,235	26	67	763,828	39,380,746	66,165,204
1987	1,640,443	2,986,896	677,400	99,148	26	67	776,641	16,721,842	53,171,704
1988	80,721	2,997,401	45,600	102,004	28	70	147,702	14,337,247	17,018,991
1989	0	3,887,046	0	104,407	28	70	104,505	14,258,084	14,343,084
1990	0	303,646	0	104,407	28	70	104,505	8,066,733	8,066,733
1991	0	0	0	253,328	28	70	253,426	1,823,283	1,823,283
1992	0	0	0	283,578	28	70	283,676	322,271	322,271
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	134,667,726	447,816,817	16,705,358	1,815,953	50,048	126,866	18,698,225	1,719,770,856	1,864,232,158

TABLE B-11: MINIMUM OMP&R COSTS OF EACH AQUEDUCT REACH TO BE

(in dollars)

Calendar Year	UPPER FEATHER DIVISION	NORTH BAY AQUEDUCT					SOUTH BAY AQUEDUCT			
		Reach 1	Reach 2	Reach 3A	Reach 3B	Total	Reach 1	Reach 2	Reach 4	Reach 5
	(1)	(2)	(3)	(4)	(4A)	(5)	(6)	(7)	(8)	(9)
1952	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
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	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	58,235	58,235	690,481	125,224	176,855	50,914
1979	3,235	0	0	0	73,864	73,864	650,944	76,849	212,826	91,383
1980	416	0	0	0	81,791	81,791	1,129,058	212,974	242,118	110,798
1981	3,847	0	0	0	100,717	100,717	883,404	130,113	167,079	229,278
1982	10,956	0	0	0	192,120	192,120	1,157,915	141,700	249,392	96,379
1983	-422	0	0	0	106,850	106,850	1,233,543	91,111	351,114	163,706
1984	643	0	0	0	144,766	144,766	1,851,449	110,608	353,692	48,664
1985	2,599	0	0	0	228,022	228,022	1,894,414	183,744	436,375	256,195
1986	2,595	0	0	0	137,310	137,310	2,484,718	211,109	363,066	276,651
1987	2,595	0	0	0	118,888	118,888	2,528,582	258,041	374,080	297,876
1988	2,601	294,193	151,961	191,441	143,665	781,260	2,384,068	286,074	363,230	275,202
1989	2,604	291,273	155,808	195,894	146,437	789,412	2,357,055	262,403	372,482	275,869
1990	2,605	290,310	155,914	195,951	146,486	788,661	2,358,554	262,557	372,762	275,849
1991	2,607	290,176	156,066	196,085	146,416	788,743	2,359,631	262,811	373,269	276,324
1992	2,608	290,272	156,133	196,210	146,523	789,138	2,360,741	262,925	373,492	276,453
1993	2,608	290,365	156,137	196,445	146,726	789,673	2,361,173	262,970	373,611	276,791
1994	2,608	290,523	156,142	196,841	147,066	790,572	2,361,867	263,040	373,809	277,531
1995	2,608	290,448	156,141	196,650	146,903	790,142	2,361,535	263,007	373,716	276,924
1996	2,608	290,582	156,146	196,983	147,189	790,900	2,362,119	263,067	373,882	277,641
1997	2,608	290,532	156,145	196,855	147,079	790,611	2,361,896	263,044	373,819	277,241
1998	2,608	290,682	156,150	197,233	147,405	791,470	2,362,560	263,111	374,006	278,151
1999	2,608	290,660	156,150	197,176	147,356	791,342	2,362,459	263,101	373,977	278,012
2000	2,608	290,753	156,153	197,408	147,555	791,869	2,362,867	263,143	374,094	278,583
2001	2,611	291,015	156,343	197,760	147,860	792,978	2,365,981	263,460	374,724	279,313
2002	2,611	291,579	156,362	199,174	149,077	796,192	2,368,464	263,710	375,425	282,741
2003	2,611	291,637	156,365	199,318	149,202	796,522	2,451,421	270,474	390,370	289,660
2004	2,611	303,321	157,725	199,559	152,536	813,141	2,455,409	270,806	391,131	290,526
2005	2,611	303,317	157,725	199,551	152,528	813,121	2,455,393	270,804	391,126	290,504
2006	2,611	303,357	157,727	199,649	152,612	813,345	2,455,566	270,822	391,175	290,740
2007	2,611	303,395	157,728	199,744	152,695	813,562	2,455,733	270,839	391,221	290,972
2008	2,611	303,434	157,730	199,839	152,776	813,779	2,455,901	270,855	391,269	291,201
2009	2,611	303,950	157,748	201,131	153,886	816,715	2,458,170	271,083	391,907	294,320
2010	2,611	303,952	157,748	201,135	153,892	816,727	2,458,178	271,085	391,910	294,332
2011	2,613	303,703	157,494	200,924	153,709	815,830	2,454,421	270,700	391,191	293,983
2012	2,613	303,726	157,495	200,982	153,759	815,962	2,454,522	270,711	391,220	294,123
2013	2,613	303,759	157,497	201,061	153,826	816,143	2,454,663	270,724	391,259	294,316
2014	2,613	303,788	157,498	201,131	153,887	816,304	2,454,786	270,737	391,293	294,484
2015	2,613	304,306	157,516	202,430	155,006	819,258	2,457,066	270,966	391,935	297,619
2016	2,613	304,331	157,518	202,489	155,055	819,393	2,457,170	270,976	391,965	297,764
2017	2,613	304,325	157,518	202,472	155,042	819,357	2,457,140	270,973	391,956	297,722
2018	2,613	304,320	157,518	202,460	155,033	819,331	2,457,120	270,971	391,949	297,686
2019	2,613	304,850	157,537	203,784	156,172	822,343	2,459,444	271,204	392,600	300,870
2020	2,613	304,833	157,537	203,738	156,134	822,242	2,459,363	271,195	392,576	300,751
2021	2,613	304,809	157,536	203,680	156,083	822,108	2,362,183	263,275	375,087	292,889
2022	2,613	292,238	156,064	203,704	152,814	804,820	2,362,224	263,279	375,097	292,943
2023	2,613	292,213	156,063	203,641	152,762	804,679	2,362,113	263,267	375,065	292,782
2024	2,613	291,128	155,936	203,655	152,350	803,069	2,357,029	262,853	374,151	292,400
2025	2,613	291,125	155,936	203,649	152,345	803,055	2,357,016	262,851	374,145	292,373
2026	2,613	291,506	155,950	204,598	153,161	805,215	2,358,683	263,018	374,612	294,655
2027	2,613	291,482	155,949	204,540	153,113	805,084	2,358,582	263,007	374,581	294,504
2028	2,613	291,490	155,949	204,562	153,131	805,132	2,358,616	263,009	374,588	294,535
2029	2,613	291,474	155,949	204,519	153,094	805,036	2,358,541	263,000	374,563	294,414
2030	2,613	291,472	155,949	204,514	153,090	805,025	2,358,533	262,998	374,556	294,383
2031	2,613	291,437	155,948	204,427	153,014	804,826	2,358,375	262,981	374,508	294,152
2032	2,613	291,439	155,948	204,432	153,018	804,837	2,358,384	262,981	374,509	294,155
2033	2,613	291,760	155,959	205,233	153,709	806,661	2,359,793	263,123	374,906	296,091
2034	2,613	291,750	155,959	205,208	153,687	806,604	2,359,749	263,118	374,893	296,031
2035	2,613	291,705	155,957	205,097	153,591	806,350	2,359,553	263,098	374,838	295,762

REIMBURSED THRU MINIMUM OMP&R COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Calendar Year	SOUTH BAY AQUEDUCT (continued)					CALIFORNIA AQUEDUCT			
						NORTH SAN JOAQUIN DIVISION			
	Reach 6	Reach 7	Reach 8	Reach 9	Total	Reach 1	Reach 2A	Reach 2B	Subtotal
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1952	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	42,918	0	0	0	0
1963	0	0	0	0	168,358	0	0	0	0
1964	0	0	0	0	184,729	0	0	0	0
1965	2,634	6,490	4,704	12,904	378,874	0	0	0	0
1966	4,707	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	1,157,601	2,014,943	303,404	187,184	2,505,531
1979	1,269	29,294	7,351	106,835	1,176,751	1,846,499	223,988	142,760	2,213,247
1980	3,621	24,270	17,404	110,852	1,851,095	2,363,949	463,996	244,726	3,072,671
1981	4,038	20,109	17,586	98,143	1,549,750	2,657,341	425,465	151,017	3,233,823
1982	2,236	22,870	21,919	202,590	1,895,001	3,198,828	586,668	240,289	4,025,785
1983	4,264	48,410	69,861	204,880	2,166,889	4,101,809	745,033	257,544	5,104,386
1984	4,333	44,291	33,212	398,183	2,844,432	4,613,647	744,835	272,929	5,631,411
1985	15,207	71,890	70,598	229,310	3,157,733	5,450,411	751,664	260,457	6,462,532
1986	19,000	34,047	39,653	249,463	3,677,707	6,972,738	836,843	439,460	8,249,041
1987	37,020	47,053	53,352	199,161	3,795,165	7,143,932	888,891	421,282	8,454,105
1988	54,057	58,412	64,741	196,207	3,681,991	7,099,221	795,269	328,792	8,223,282
1989	55,401	59,875	66,365	201,126	3,650,576	7,151,149	816,410	308,024	8,275,583
1990	55,419	59,907	66,407	201,268	3,652,723	7,130,784	816,765	308,272	8,255,821
1991	55,442	59,953	66,467	201,473	3,655,370	7,085,945	818,368	308,959	8,213,272
1992	55,454	59,973	66,494	201,563	3,657,095	7,087,947	819,038	309,232	8,216,217
1993	55,455	59,974	66,494	201,564	3,658,032	7,090,152	820,225	309,596	8,219,973
1994	55,455	59,974	66,494	201,564	3,659,734	7,093,788	822,212	310,203	8,226,203
1995	55,455	59,974	66,494	201,564	3,658,669	7,092,043	821,301	309,925	8,223,269
1996	55,455	59,974	66,494	201,564	3,660,196	7,095,105	822,966	310,434	8,228,505
1997	55,455	59,974	66,494	201,564	3,659,487	7,093,929	822,350	310,247	8,226,526
1998	55,455	59,974	66,494	201,564	3,661,315	7,097,414	824,209	310,814	8,232,437
1999	55,455	59,974	66,494	201,564	3,661,036	7,096,884	823,917	310,725	8,231,526
2000	55,455	59,974	66,494	201,564	3,662,174	7,099,026	825,154	311,103	8,235,283
2001	55,485	60,031	66,568	201,821	3,667,383	7,107,061	827,152	311,963	8,246,176
2002	55,485	60,031	66,568	201,821	3,674,245	7,215,048	834,269	314,138	8,363,455
2003	57,176	61,863	69,238	208,537	3,798,739	7,216,383	834,979	314,354	8,365,716
2004	57,249	61,942	69,354	208,827	3,805,244	7,333,566	862,976	328,207	8,524,749
2005	57,249	61,942	69,354	208,827	3,805,199	7,333,484	862,930	328,193	8,524,607
2006	57,249	61,942	69,354	208,827	3,805,675	7,334,391	863,420	328,343	8,526,154
2007	57,249	61,942	69,354	208,827	3,806,137	7,335,268	863,893	328,488	8,527,649
2008	57,249	61,942	69,354	208,827	3,806,598	7,336,143	864,366	328,632	8,529,141
2009	57,249	61,942	69,354	208,827	3,812,852	7,348,037	870,782	330,594	8,549,413
2010	57,249	61,942	69,354	208,827	3,812,877	7,348,080	870,806	330,600	8,549,486
2011	57,207	61,864	69,254	208,481	3,807,101	7,339,629	869,432	329,845	8,538,906
2012	57,207	61,864	69,254	208,481	3,807,382	7,340,165	869,722	329,933	8,539,820
2013	57,207	61,864	69,254	208,481	3,807,768	7,340,899	870,117	330,055	8,541,071
2014	57,207	61,864	69,254	208,481	3,808,106	7,341,542	870,465	330,161	8,542,168
2015	57,207	61,864	69,254	208,481	3,814,392	7,353,498	876,915	332,133	8,562,546
2016	57,207	61,864	69,254	208,481	3,814,681	7,354,048	877,211	332,224	8,563,483
2017	57,207	61,864	69,254	208,481	3,814,597	7,353,887	877,124	332,197	8,563,208
2018	57,207	61,864	69,254	208,481	3,814,532	7,353,780	877,001	332,159	8,562,940
2019	57,207	61,864	69,254	208,481	3,820,924	7,365,962	883,486	334,141	8,583,589
2020	57,207	61,864	69,254	208,481	3,820,691	7,252,704	883,169	334,044	8,469,917
2021	55,223	59,714	66,120	200,598	3,675,089	7,252,162	882,843	333,946	8,468,951
2022	55,223	59,714	66,120	200,598	3,675,198	7,129,865	854,045	321,635	8,305,545
2023	55,223	59,714	66,120	200,598	3,674,882	7,129,285	853,650	321,514	8,304,449
2024	55,119	59,601	65,955	200,183	3,667,291	7,115,734	850,831	317,391	8,283,956
2025	55,119	59,601	65,955	200,183	3,667,243	7,115,669	850,709	317,353	8,283,731
2026	55,119	59,601	65,955	200,183	3,671,826	7,124,411	855,339	318,768	8,298,518
2027	55,119	59,601	65,955	200,183	3,671,532	7,123,875	854,960	318,652	8,297,487
2028	55,119	59,601	65,955	200,183	3,671,606	7,124,058	854,916	318,639	8,297,613
2029	55,119	59,601	65,955	200,183	3,671,376	7,123,661	854,552	318,528	8,296,741
2030	55,119	59,601	65,955	200,183	3,671,328	7,123,615	854,374	318,473	8,296,462
2031	55,119	59,601	65,955	200,183	3,670,874	7,122,794	853,774	318,290	8,294,858
2032	55,119	59,601	65,955	200,183	3,670,887	7,122,840	853,738	318,279	8,294,857
2033	55,119	59,601	65,955	200,183	3,674,771	7,130,220	857,720	319,496	8,307,436
2034	55,119	59,601	65,955	200,183	3,674,649	7,129,989	857,596	319,458	8,307,043
2035	55,119	59,601	65,955	200,183	3,674,109	7,128,963	857,043	319,288	8,305,294

TABLE B-11: MINIMUM OMP&R COSTS OF EACH AQUEDUCT REACH TO BE

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SAN LUIS DIVISION						SOUTH SAN JOAQUIN DIVISION		
	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Subtotal	Reach 8C	Reach 8D	Reach 9
	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
1952	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	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	46,101	974,579	203,929	107,236	203,526	1,535,371	45,559	179,214	130,334
1979	224,650	844,371	145,802	100,467	181,958	1,497,248	69,989	151,649	130,718
1980	244,152	1,168,231	224,799	128,450	283,093	2,048,725	57,745	275,991	186,289
1981	258,251	1,057,533	194,042	91,041	1,613,262	3,214,129	80,143	199,561	145,479
1982	279,776	1,238,016	212,157	115,659	1,435,018	3,280,626	59,451	270,760	235,156
1983	191,428	1,622,973	302,326	119,055	2,163,619	4,399,401	48,125	357,538	209,371
1984	208,838	2,139,734	303,631	144,763	2,175,012	4,971,978	43,523	422,092	271,990
1985	297,497	2,856,132	274,320	134,098	1,659,094	5,221,141	61,264	480,430	244,224
1986	385,208	2,335,351	368,884	127,136	978,989	4,195,568	138,385	625,365	430,960
1987	344,813	2,444,718	427,633	139,136	889,678	4,245,978	144,176	649,106	441,808
1988	339,927	2,437,297	431,550	165,076	747,396	4,121,246	142,223	603,609	429,656
1989	337,445	2,490,058	443,648	169,598	767,834	4,208,583	145,752	619,094	440,752
1990	337,699	2,490,388	443,667	169,592	768,896	4,210,242	145,864	619,362	440,884
1991	339,113	2,488,925	444,798	169,932	770,694	4,213,462	146,038	620,365	441,653
1992	339,756	2,490,888	445,284	170,050	771,543	4,217,521	146,069	620,757	441,942
1993	341,012	2,495,544	446,535	170,448	772,062	4,225,601	146,458	623,558	443,994
1994	343,117	2,503,384	448,641	171,121	772,912	4,239,175	146,480	624,666	445,033
1995	342,153	2,499,661	447,694	170,820	772,529	4,232,857	146,470	624,169	444,565
1996	343,918	2,506,270	449,477	171,388	773,248	4,244,301	146,488	625,106	445,442
1997	343,263	2,503,836	448,953	171,221	773,038	4,240,311	146,483	624,830	445,185
1998	345,235	2,511,321	450,927	171,850	773,832	4,253,165	146,504	625,869	446,157
1999	344,925	2,510,260	450,744	171,792	773,758	4,251,479	146,502	625,772	446,067
2000	346,235	2,514,942	452,087	172,220	774,299	4,259,783	146,515	626,478	446,730
2001	348,334	2,521,127	453,772	172,725	777,171	4,273,129	146,729	627,757	447,716
2002	355,878	2,549,182	461,290	175,125	780,199	4,321,674	146,807	631,713	451,419
2003	356,628	2,552,043	462,035	175,363	780,498	4,326,567	146,814	632,105	451,786
2004	368,084	2,626,115	475,572	179,659	788,758	4,438,188	147,140	633,869	453,317
2005	368,037	2,625,938	475,526	179,644	788,740	4,437,885	147,140	633,845	453,294
2006	368,556	2,627,888	476,042	179,808	788,947	4,441,241	149,181	645,786	461,393
2007	369,058	2,629,766	476,531	179,965	789,144	4,444,464	149,186	646,042	461,633
2008	369,558	2,631,640	477,017	180,120	789,341	4,447,676	149,192	646,300	461,872
2009	376,359	2,657,182	483,751	182,270	792,053	4,491,615	149,261	649,841	465,190
2010	376,384	2,657,277	483,776	182,279	792,063	4,491,779	149,261	649,854	465,201
2011	374,811	2,653,848	482,902	182,048	788,506	4,482,115	149,427	651,459	466,320
2012	375,115	2,654,986	483,189	182,139	788,621	4,484,050	149,430	651,611	466,462
2013	375,536	2,656,472	483,472	182,229	788,734	4,486,443	149,433	651,758	466,601
2014	375,903	2,657,842	483,818	182,340	788,875	4,488,778	149,437	651,941	466,772
2015	382,740	2,683,505	490,569	184,495	791,593	4,532,902	149,506	655,491	470,097
2016	383,055	2,684,666	490,848	184,584	791,707	4,534,860	149,509	655,639	470,234
2017	382,963	2,684,277	490,691	184,534	791,643	4,534,108	149,508	655,557	470,156
2018	382,832	2,683,993	490,543	184,486	791,584	4,533,438	149,506	655,478	470,083
2019	389,708	2,710,053	497,274	186,635	794,294	4,577,964	149,576	659,019	473,399
2020	389,371	2,709,035	496,853	186,499	794,124	4,575,882	149,572	658,797	473,190
2021	389,028	2,707,827	496,477	186,382	793,974	4,573,688	149,568	658,601	473,006
2022	378,471	2,633,353	483,387	182,265	785,681	4,463,157	149,566	658,507	472,919
2023	378,053	2,632,055	482,967	182,132	785,512	4,460,719	149,561	658,285	472,712
2024	376,548	2,624,980	481,055	181,480	784,443	4,448,506	145,822	637,734	458,623
2025	376,419	2,624,809	480,957	181,449	784,403	4,448,037	145,821	637,683	458,573
2026	381,325	2,643,553	485,853	183,011	786,375	4,480,117	145,871	640,258	460,985
2027	380,925	2,642,369	485,487	182,895	786,228	4,477,904	145,868	640,067	460,805
2028	380,876	2,642,707	485,488	182,894	786,227	4,478,192	145,867	640,066	460,805
2029	380,494	2,641,795	485,159	182,790	786,094	4,476,332	144,778	633,672	456,463
2030	380,304	2,641,564	484,911	182,710	785,996	4,475,485	144,777	633,543	456,341
2031	379,666	2,639,663	484,222	182,490	785,718	4,471,759	144,769	633,179	456,000
2032	379,629	2,639,663	484,091	182,449	785,666	4,471,498	144,768	633,109	455,937
2033	383,850	2,655,520	488,280	183,785	787,352	4,498,787	144,811	635,313	458,000
2034	383,719	2,655,025	488,148	183,744	787,299	4,497,935	144,810	635,245	457,934
2035	383,131	2,652,824	487,571	183,559	787,066	4,494,151	144,804	634,942	457,651

REIMBURSED THRU MINIMUM OMP&R COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SOUTH SAN JOAQUIN DIVISION (continued)								
	Reach 10A	Reach 11B	Reach 12D	Reach 12E	Reach 13B	Reach 14A	Reach 14B	Reach 14C	Reach 15A
	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)
1952	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0
1969	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	169,076	106,954	72,984	170,873	151,485	1,352,439	139,944	132,466	1,367,555
1979	176,157	86,538	57,278	174,847	150,896	1,492,010	202,603	261,554	1,216,975
1980	285,445	121,599	124,235	168,074	165,771	1,990,808	189,919	239,282	1,438,966
1981	201,331	77,768	34,579	114,127	172,853	1,742,012	164,662	161,812	1,801,812
1982	266,761	159,205	144,269	225,388	225,538	1,802,471	196,388	16,868	1,941,185
1983	287,390	129,214	116,935	192,442	204,208	2,356,385	186,375	160,675	2,484,335
1984	361,729	145,825	96,183	203,428	231,121	3,148,723	287,809	190,508	3,104,229
1985	329,361	226,171	189,625	280,213	330,133	3,363,447	214,612	163,793	3,416,418
1986	476,494	301,932	262,993	444,657	530,133	3,994,336	427,278	347,054	4,405,363
1987	484,902	308,993	274,210	454,997	556,147	4,080,475	443,974	362,440	4,617,528
1988	470,862	301,191	265,651	442,084	538,306	3,965,511	358,241	277,271	4,073,320
1989	483,046	308,905	272,649	453,378	552,135	4,021,975	367,668	284,561	3,978,277
1990	483,196	309,019	272,660	453,609	552,397	4,023,552	367,701	284,610	3,980,084
1991	484,031	309,525	273,227	454,297	553,281	4,020,960	368,365	285,120	3,975,912
1992	484,351	309,700	273,428	454,550	553,623	4,022,828	368,622	285,306	3,977,526
1993	486,425	311,040	275,058	456,112	556,260	4,033,539	370,404	286,737	3,984,910
1994	487,537	311,654	276,053	456,752	557,167	4,037,358	371,438	287,493	3,987,122
1995	487,037	311,378	275,606	456,463	556,759	4,035,548	370,963	287,145	3,986,064
1996	487,978	311,897	276,445	457,007	557,527	4,038,782	371,846	287,792	3,987,933
1997	487,702	311,745	276,200	456,848	557,302	4,037,627	371,578	287,594	3,987,231
1998	488,745	312,320	277,131	457,448	558,151	4,041,273	372,556	288,311	3,989,351
1999	488,649	312,266	277,044	457,393	558,073	4,040,766	372,446	288,231	3,989,041
2000	489,360	312,659	277,679	457,801	558,650	4,043,058	373,090	288,702	3,990,351
2001	490,431	313,303	278,416	458,672	559,776	4,048,514	373,999	289,398	3,995,030
2002	494,405	315,494	281,964	460,959	563,014	4,062,218	377,720	292,122	4,002,965
2003	494,799	315,711	282,314	461,187	563,335	4,063,647	378,121	292,415	4,003,792
2004	496,538	316,743	283,310	462,588	564,680	4,218,855	379,836	293,604	4,157,437
2005	496,514	316,729	283,288	462,573	564,660	4,218,786	379,826	293,598	4,157,393
2006	504,483	322,193	289,206	469,147	576,325	4,265,741	386,488	299,160	4,190,942
2007	504,741	322,335	289,438	469,297	576,537	4,266,640	386,718	299,329	4,191,466
2008	504,998	322,478	289,666	469,444	576,746	4,267,551	386,961	299,505	4,191,999
2009	508,558	324,439	292,843	471,493	579,646	4,279,985	390,290	301,942	4,199,227
2010	508,570	324,447	292,856	471,501	579,657	4,280,032	390,302	301,950	4,199,252
2011	509,595	325,168	293,806	472,178	581,279	4,285,322	391,223	302,730	4,201,611
2012	509,747	325,252	293,942	472,265	581,403	4,285,874	391,368	302,836	4,201,935
2013	509,896	325,335	294,075	472,350	581,524	4,286,585	391,527	302,953	4,202,373
2014	510,080	325,436	294,239	472,457	581,673	4,287,246	391,697	303,079	4,202,761
2015	513,647	327,403	297,424	474,511	584,580	4,299,731	395,034	305,520	4,210,026
2016	513,796	327,484	297,556	474,595	584,700	4,300,287	395,171	305,619	4,210,357
2017	513,713	327,438	297,483	474,548	584,632	4,300,086	395,099	305,566	4,210,250
2018	513,633	327,395	297,412	474,503	584,568	4,299,934	395,035	305,519	4,210,180
2019	517,193	329,356	300,588	476,551	587,468	4,312,578	398,366	307,957	4,217,553
2020	516,968	329,233	300,389	476,422	587,284	4,311,947	398,090	307,754	4,217,251
2021	516,770	329,125	300,212	476,310	587,123	4,311,173	397,766	307,519	4,216,868
2022	516,677	329,073	300,129	476,254	587,048	4,141,512	397,695	307,466	4,047,240
2023	516,455	328,950	299,931	476,127	586,867	4,140,873	397,502	307,325	4,046,885
2024	502,361	319,346	290,081	464,231	567,133	4,056,873	385,597	297,598	3,984,730
2025	502,310	319,317	290,034	464,202	567,092	4,056,784	385,559	297,569	3,984,687
2026	504,897	320,744	292,345	465,690	569,199	4,065,907	387,989	299,350	3,990,001
2027	504,703	320,636	292,172	465,580	569,042	4,065,326	387,819	299,225	3,989,673
2028	504,705	320,638	292,173	465,580	569,042	4,065,483	387,839	299,239	3,989,783
2029	500,427	317,710	288,993	462,059	562,799	4,040,527	384,295	296,279	3,971,947
2030	500,297	317,637	288,877	461,984	562,693	4,040,398	384,214	296,219	3,971,907
2031	499,933	317,436	288,551	461,773	562,396	4,039,398	383,863	295,963	3,971,384
2032	499,863	317,399	288,489	461,734	562,339	4,039,325	383,775	295,900	3,971,382
2033	502,077	318,620	290,466	463,008	564,144	4,046,983	385,794	297,376	3,975,845
2034	502,008	318,581	290,403	462,969	564,087	4,046,725	385,713	297,317	3,975,689
2035	501,702	318,412	290,131	462,792	563,838	4,045,635	385,413	297,097	3,975,059

TABLE B-11: MINIMUM OMP&R COSTS OF EACH AQUEDUCT REACH TO BE

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SOUTH SAN JOAQUIN DIVISION (continued)		TEHACHAPI DIVISION			MOJAVE DIVISION			
	Reach 16A	Subtotal	Reach 17E	Reach 17F	Subtotal	Reach 18A	Reach 19	Reach 19C	Reach 20A
	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)
1952	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0
1969	0	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	2,146,483	6,165,366	3,742,853	42,637	3,785,490	91,815	200,759	0	215,673
1979	1,800,974	5,972,188	3,544,261	45,997	3,590,258	99,670	307,386	0	261,205
1980	2,235,008	7,479,132	4,757,403	54,806	4,812,209	116,487	438,643	0	290,719
1981	2,769,162	7,665,301	5,511,124	65,135	5,576,259	317,785	499,874	0	328,845
1982	2,978,804	8,522,244	6,404,197	55,996	6,460,193	447,734	455,217	0	275,744
1983	4,220,860	10,953,853	13,978,916	89,995	14,068,911	509,174	390,709	0	347,525
1984	5,062,023	13,569,183	19,928,106	75,319	20,003,425	551,766	538,955	0	393,369
1985	6,206,000	15,505,691	19,599,378	121,276	19,720,654	603,161	464,271	0	425,581
1986	6,407,534	18,792,484	19,270,217	109,078	19,379,295	840,825	676,088	0	482,883
1987	6,488,238	19,306,994	17,206,799	90,525	17,297,324	791,890	764,416	0	544,711
1988	6,301,305	18,169,230	16,201,521	40,647	16,242,168	714,055	771,173	0	565,024
1989	6,420,180	18,348,372	15,687,653	42,253	15,729,906	724,239	796,896	0	583,681
1990	6,422,131	18,355,069	15,691,767	42,305	15,734,072	724,909	795,567	0	582,876
1991	6,411,708	18,344,482	15,643,425	42,513	15,685,938	727,347	798,515	0	584,837
1992	6,414,327	18,353,029	15,647,439	42,555	15,689,994	726,698	799,619	0	585,528
1993	6,428,179	18,402,674	15,651,322	42,699	15,694,021	727,289	804,731	0	588,812
1994	6,433,819	18,422,572	15,657,768	42,938	15,700,706	729,058	813,227	0	594,271
1995	6,431,147	18,413,314	15,654,672	42,826	15,697,498	728,215	809,271	0	591,727
1996	6,435,939	18,430,182	15,660,098	43,028	15,703,126	729,706	816,472	0	596,355
1997	6,434,277	18,424,602	15,658,012	42,958	15,700,970	729,150	813,980	0	594,755
1998	6,439,737	18,443,553	15,664,189	43,187	15,707,376	730,847	822,196	0	600,030
1999	6,439,065	18,441,315	15,663,251	43,158	15,706,409	730,603	821,172	0	599,371
2000	6,442,496	18,453,569	15,667,041	43,303	15,710,344	731,651	826,302	0	602,671
2001	6,450,151	18,479,892	15,678,456	43,564	15,722,020	733,203	830,079	0	605,183
2002	6,470,452	18,551,252	15,701,531	44,415	15,745,946	739,535	860,523	0	624,741
2003	6,472,605	18,558,631	15,703,898	44,507	15,748,405	737,394	863,842	0	626,872
2004	6,632,422	19,040,339	15,722,780	45,359	15,768,139	738,735	870,656	0	631,161
2005	6,632,346	19,039,992	15,722,634	45,355	15,767,989	738,698	870,512	0	631,069
2006	6,690,987	19,251,032	16,014,856	45,413	16,060,269	739,141	872,641	0	632,439
2007	6,692,277	19,255,639	16,016,411	48,558	16,064,969	742,094	888,639	0	645,981
2008	6,693,609	19,260,321	16,017,961	48,613	16,066,574	742,513	890,601	0	647,239
2009	6,711,957	19,324,672	16,039,042	49,381	16,088,423	748,284	918,124	0	664,923
2010	6,712,003	19,324,886	16,039,121	49,384	16,088,505	748,302	918,174	0	664,956
2011	6,718,073	19,348,191	16,027,974	49,195	16,077,169	747,397	919,000	0	665,373
2012	6,718,879	19,351,004	16,028,922	49,231	16,078,153	747,660	920,255	0	666,178
2013	6,719,954	19,354,364	16,030,223	49,277	16,079,500	748,011	921,900	0	667,235
2014	6,720,937	19,357,755	16,031,363	49,319	16,080,682	748,323	923,399	0	668,197
2015	6,739,216	19,422,186	16,052,553	50,087	16,102,640	754,116	950,927	0	685,884
2016	6,740,046	19,424,993	16,053,529	50,123	16,103,652	754,380	952,182	0	686,691
2017	6,739,753	19,423,789	16,053,243	50,110	16,103,353	754,301	951,759	0	686,416
2018	6,739,540	19,422,786	16,053,058	50,102	16,103,160	754,244	951,454	0	686,224
2019	6,758,127	19,487,731	16,074,660	50,883	16,125,543	760,145	979,458	0	704,213
2020	6,757,134	19,484,031	16,073,921	50,844	16,124,765	759,913	977,937	0	703,236
2021	6,755,934	19,479,975	16,072,962	50,795	16,123,757	759,619	976,134	0	702,077
2022	6,586,172	18,970,258	16,073,345	50,793	16,124,138	759,688	976,002	0	701,994
2023	6,585,084	18,966,557	16,072,324	50,741	16,123,065	759,386	974,211	0	700,842
2024	6,477,948	18,588,077	15,581,809	49,725	15,631,534	759,056	971,827	0	699,437
2025	6,477,724	18,587,355	15,581,701	44,405	15,626,106	754,659	947,208	0	678,007
2026	6,491,102	18,634,338	15,597,204	44,964	15,642,168	758,895	967,299	0	690,916
2027	6,490,205	18,631,121	15,596,263	44,928	15,641,191	758,628	965,979	0	690,067
2028	6,490,454	18,631,674	15,596,597	44,939	15,641,536	758,718	966,368	0	690,320
2029	6,459,307	18,519,256	15,595,906	44,913	15,640,819	758,524	965,393	0	689,691
2030	6,459,142	18,518,029	15,595,836	44,904	15,640,740	758,492	965,101	0	689,505
2031	6,457,715	18,512,360	15,594,394	44,841	15,639,235	758,079	962,863	0	688,067
2032	6,457,562	18,511,582	15,594,480	44,833	15,639,313	758,078	962,541	0	687,860
2033	6,468,803	18,551,240	15,607,563	45,296	15,652,859	761,630	979,110	0	698,502
2034	6,468,330	18,549,811	15,607,153	45,272	15,652,425	761,504	978,284	0	697,976
2035	6,466,675	18,544,151	15,605,336	45,200	15,650,536	760,996	975,751	0	696,348

REIMBURSED THRU MINIMUM OMP&R COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	MOJAVE DIVISION (continued)							SANTA ANA DIVISION	
	Reach 20B	Reach 21	Reach 22A	Reach 22B	Reach 23	Reach 24	Subtotal	Reach 25	Reach 26A
	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)
1952	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0
1972	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	2,288,531	72,179	637,401	3,807,976	67,186	1,262,917
1979	194,104	203,078	121,586	2,105,305	76,960	202,566	3,571,860	84,462	1,235,824
1980	237,250	156,794	117,274	2,685,789	147,009	688,605	4,878,570	72,651	1,533,618
1981	295,908	183,283	121,299	3,035,879	134,895	28,579	4,946,347	35,662	1,576,132
1982	330,484	186,098	125,423	3,254,335	299,712	623,772	5,998,519	26,852	1,829,441
1983	315,402	209,577	133,801	3,814,719	303,362	207,887	6,232,156	19,204	1,740,145
1984	333,122	243,838	143,600	4,698,694	273,975	656,739	7,834,058	15,121	2,275,776
1985	379,375	219,235	120,384	5,380,119	426,568	398,258	8,416,952	20,650	2,639,225
1986	535,450	355,208	250,708	5,753,975	335,377	831,126	10,061,640	33,054	2,632,124
1987	603,608	398,859	283,568	6,148,287	389,313	1,512,513	11,437,165	37,106	2,775,610
1988	631,136	418,896	297,947	6,385,116	407,622	529,812	10,720,781	41,205	3,017,328
1989	652,280	431,753	307,314	6,472,502	420,304	1,198,851	11,587,820	42,506	3,129,165
1990	651,512	431,351	306,983	6,471,283	420,039	992,918	11,377,438	42,533	3,130,748
1991	653,526	432,538	307,887	6,476,138	383,401	1,484,351	11,848,540	42,573	3,133,875
1992	654,288	432,947	308,228	6,480,332	353,854	858,569	11,200,063	42,544	3,135,198
1993	657,574	434,807	309,682	6,493,646	353,858	233,271	10,603,670	42,545	3,136,179
1994	663,033	437,889	312,102	6,515,679	353,858	1,946,976	12,366,093	42,545	3,137,797
1995	660,489	436,454	310,975	6,505,339	353,858	482,871	10,879,199	42,545	3,137,020
1996	665,117	439,069	313,027	6,523,976	353,858	1,066,302	11,503,882	42,545	3,138,382
1997	663,517	438,165	312,319	6,517,346	353,858	233,245	10,656,335	42,545	3,137,858
1998	668,792	441,147	314,657	6,538,602	353,858	2,686,166	13,156,295	42,545	3,139,409
1999	668,133	440,776	314,367	6,535,807	353,858	87,059	10,551,146	42,545	3,139,173
2000	671,433	442,639	315,830	6,549,023	353,858	679,321	11,172,728	42,545	3,140,124
2001	674,013	444,155	316,989	6,562,280	354,330	776,643	11,296,875	42,592	3,143,972
2002	693,571	455,211	325,663	6,641,272	354,330	1,587,861	12,282,707	42,592	3,149,763
2003	695,702	456,416	326,610	6,649,815	354,330	1,947,954	12,658,935	42,592	3,150,357
2004	699,855	458,893	328,799	6,671,822	354,982	−131,734	10,623,169	42,815	3,156,881
2005	699,763	458,843	328,758	6,671,546	354,982	2,912,025	13,666,196	42,815	3,156,844
2006	701,133	459,616	329,363	6,677,187	354,982	318,736	11,085,238	42,815	3,157,248
2007	713,339	465,715	334,676	6,872,863	358,783	909,013	11,931,103	44,773	3,201,813
2008	714,597	466,426	335,235	6,877,971	358,783	710,289	11,743,654	44,773	3,202,201
2009	732,281	476,421	343,078	6,949,520	358,783	3,694,378	14,885,792	44,773	3,207,492
2010	732,314	476,442	343,093	6,949,687	358,783	−835,581	10,356,170	44,773	3,207,511
2011	732,640	476,543	343,213	6,946,977	358,144	2,576,052	13,765,339	44,707	3,203,383
2012	733,445	476,998	343,570	6,950,241	358,144	689,248	11,885,739	44,707	3,203,621
2013	734,502	477,596	344,040	6,954,561	358,144	−24,782	11,181,207	44,707	3,203,947
2014	735,464	478,139	344,468	6,958,418	358,144	4,670,214	15,884,766	44,707	3,204,234
2015	753,151	488,138	352,309	7,030,041	358,144	228,128	11,600,838	44,707	3,209,551
2016	753,958	488,592	352,667	7,033,287	358,144	515,035	11,894,936	44,707	3,209,796
2017	753,683	488,441	352,545	7,032,203	358,144	923,027	12,300,519	44,707	3,209,724
2018	753,491	488,328	352,459	7,031,441	358,144	1,025,020	12,400,805	44,707	3,209,677
2019	771,480	498,499	360,439	7,104,361	358,144	791,515	12,328,254	44,707	3,215,099
2020	770,503	497,945	360,006	7,100,779	358,144	1,939,072	13,467,535	44,707	3,214,913
2021	769,344	497,292	359,490	7,096,453	358,144	3,892,227	15,410,780	44,707	3,214,673
2022	769,261	497,243	359,454	7,096,529	358,144	1,161,016	12,679,331	44,707	3,214,769
2023	768,109	496,593	358,944	7,092,173	358,144	191,619	11,700,021	44,707	3,214,513
2024	766,899	495,718	357,911	7,080,181	357,210	2,408,436	13,896,675	44,388	3,206,633
2025	747,764	486,281	349,599	6,751,447	350,678	545,506	11,611,149	41,023	3,130,696
2026	760,673	493,575	355,323	6,803,765	350,678	916,502	12,097,626	41,023	3,134,586
2027	759,824	493,097	354,947	6,800,392	350,678	3,946,650	15,120,262	41,023	3,134,350
2028	760,077	493,239	355,058	6,801,438	350,678	−951,774	10,224,122	41,023	3,134,434
2029	759,448	492,884	354,780	6,798,950	350,678	2,602,961	13,773,309	41,023	3,134,261
2030	759,262	492,779	354,699	6,798,328	350,678	1,294,125	12,462,969	41,023	3,134,243
2031	757,824	491,965	354,059	6,792,736	350,678	−256,571	10,899,700	41,023	3,133,881
2032	757,617	491,849	353,969	6,791,946	350,678	−102,984	11,051,554	41,023	3,133,902
2033	768,259	497,864	358,688	6,835,107	350,678	3,355,930	14,605,768	41,023	3,137,186
2034	767,733	497,567	358,451	6,832,928	350,678	342,794	11,587,915	41,023	3,137,083
2035	766,105	496,647	357,732	6,826,223	350,678	3,347,215	14,577,695	41,023	3,136,627

TABLE B-11: MINIMUM OMP&R COSTS OF EACH AQUEDUCT REACH TO BE

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SANTA ANA DIVISION (continued)				WEST BRANCH				
	Reach 28G[a]	Reach 28H	Reach 28J	Subtotal	Reach 29A	Reach 29 F	Reach 29G	Reach 29H	Reach 29J
	(55)	(56)	(57)	(58)	(59)	(60)	(61)	(62)	(63)
1952	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0
1972	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	2,400,467	1,238,073	342,479	267,308	415,641	17,764
1979	142,586	92,812	265,525	1,821,209	1,367,334	285,575	284,188	972,584	29,850
1980	158,340	129,897	1,120,131	3,014,637	1,698,895	224,472	455,619	874,259	288,303
1981	160,053	196,879	321,832	2,290,558	1,785,373	122,404	615,006	2,385,669	8,794
1982	205,350	316,932	1,478,782	3,857,357	1,924,075	190,501	702,264	2,207,061	414,229
1983	229,397	278,311	505,288	2,772,345	2,671,102	150,016	804,690	321,756	560,355
1984	237,539	286,086	746,261	3,560,783	3,366,049	117,102	1,964,322	768,113	719,270
1985	365,018	172,109	883,764	4,080,766	3,810,535	259,966	2,488,107	1,490,941	632,366
1986	445,830	175,307	1,468,325	4,754,640	4,057,738	321,808	2,030,984	2,775,761	446,936
1987	344,590	197,379	1,343,971	4,698,656	3,984,078	362,669	1,795,636	3,179,047	423,516
1988	350,796	217,944	1,584,264	5,211,537	3,939,050	307,601	1,614,206	3,336,507	378,453
1989	360,758	223,731	1,365,855	5,122,015	3,924,616	304,833	1,610,329	3,423,621	379,416
1990	361,029	223,874	1,545,777	5,303,961	3,926,290	303,235	1,611,206	3,418,336	379,641
1991	361,416	224,077	1,558,247	5,320,188	3,924,557	306,618	1,614,343	3,429,118	380,149
1992	361,541	224,121	1,126,370	4,889,774	3,925,993	307,204	1,614,867	3,434,557	380,324
1993	361,545	224,123	1,807,546	5,571,938	3,927,073	312,507	1,616,442	3,452,570	380,537
1994	361,545	224,123	1,477,315	5,243,325	3,928,849	321,722	1,619,485	3,483,450	380,889
1995	361,545	224,123	1,400,322	5,165,555	3,928,002	317,395	1,618,037	3,469,490	380,720
1996	361,545	224,123	1,824,862	5,591,457	3,929,498	325,223	1,620,596	3,495,493	381,016
1997	361,545	224,123	1,577,139	5,343,210	3,928,940	322,490	1,619,635	3,487,068	380,902
1998	361,545	224,123	1,577,111	5,344,733	3,930,657	331,632	1,622,560	3,517,343	381,239
1999	361,545	224,123	1,205,386	4,972,772	3,930,417	330,604	1,622,141	3,514,313	381,188
2000	361,545	224,123	2,090,833	5,859,170	3,931,473	336,255	1,623,934	3,532,934	381,395
2001	362,026	224,374	1,462,672	5,235,636	3,935,642	339,956	1,623,627	3,547,565	382,018
2002	362,026	224,374	1,865,169	5,643,924	3,942,002	373,080	1,634,536	3,659,665	383,277
2003	362,026	224,374	2,084,974	5,864,323	3,942,672	376,774	1,635,670	3,672,205	383,406
2004	362,776	224,892	1,435,460	5,222,824	4,096,922	383,913	1,638,606	3,696,967	384,083
2005	362,776	224,892	2,302,955	6,090,282	4,096,903	384,072	1,638,550	3,697,155	384,076
2006	362,776	224,892	2,197,206	5,984,937	4,097,345	386,358	1,639,314	3,705,144	384,163
2007	371,110	227,199	1,750,609	5,595,504	4,149,399	408,332	1,648,278	3,726,470	403,529
2008	371,110	227,199	1,809,429	5,654,712	4,149,817	410,413	1,649,004	3,733,586	403,613
2009	371,110	227,199	2,260,494	6,111,068	4,155,606	440,224	1,658,952	3,834,688	404,765
2010	371,110	227,199	1,875,336	5,725,929	4,155,626	440,313	1,658,990	3,835,175	404,769
2011	370,457	226,859	967,329	4,812,735	4,151,182	441,858	1,656,786	3,837,339	404,161
2012	370,457	226,859	2,626,213	6,471,857	4,151,447	443,257	1,657,251	3,842,908	404,212
2013	370,457	226,859	2,614,934	6,460,904	4,151,802	445,062	1,657,856	3,848,628	404,284
2014	370,457	226,859	1,573,597	5,419,854	4,152,114	446,667	1,658,391	3,853,806	404,346
2015	370,457	226,859	2,878,513	6,730,087	4,157,924	476,516	1,668,379	3,954,781	405,503
2016	370,457	226,859	1,991,112	5,842,931	4,158,188	477,848	1,668,836	3,959,012	405,556
2017	370,457	226,859	2,834,052	6,685,799	4,158,106	477,359	1,668,698	3,957,489	405,541
2018	370,457	226,859	2,046,116	5,897,816	4,158,047	476,999	1,668,603	3,955,999	405,531
2019	370,457	226,859	2,387,044	6,244,166	4,163,958	507,195	1,678,778	4,058,275	406,710
2020	370,457	226,859	2,772,153	6,629,089	4,163,715	505,421	1,678,395	4,052,482	406,670
2021	370,457	226,859	1,080,976	4,937,672	4,163,421	503,506	1,677,918	4,046,009	406,617
2022	370,457	226,859	3,437,971	7,294,763	3,993,765	503,410	1,678,065	4,045,593	406,639
2023	370,457	226,859	2,324,845	6,181,381	3,993,463	501,498	1,677,560	4,039,422	406,582
2024	369,381	226,116	1,721,499	5,568,017	3,983,321	499,726	1,676,140	4,032,585	405,934
2025	355,061	222,152	2,757,825	6,506,757	3,894,548	465,125	1,661,910	4,005,748	372,796
2026	355,061	222,152	3,208,777	6,961,599	3,898,798	486,934	1,669,217	4,079,561	373,642
2027	355,061	222,152	1,631,703	5,384,289	3,898,530	485,509	1,668,774	4,074,971	373,591
2028	355,061	222,152	2,498,165	6,250,835	3,898,597	485,498	1,668,907	4,075,007	373,609
2029	355,061	222,152	3,174,657	6,927,154	3,898,396	484,322	1,668,376	4,071,277	373,571
2030	355,061	222,152	2,144,101	5,896,580	3,898,359	483,890	1,668,526	4,069,724	373,567
2031	355,061	222,152	2,755,531	6,507,648	3,897,935	481,352	1,667,825	4,061,489	373,489
2032	355,061	222,152	2,168,816	5,920,954	3,897,923	480,806	1,667,830	4,059,434	373,494
2033	355,061	222,152	2,549,026	6,304,448	3,901,474	498,589	1,673,973	4,120,006	374,208
2034	355,061	222,152	2,362,738	6,118,057	3,901,320	497,229	1,673,738	4,115,151	374,186
2035	355,061	222,152	989,364	4,744,227	3,900,784	493,997	1,672,849	4,104,514	374,087

REIMBURSED THRU MINIMUM OMP&R COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)							TOTAL	GRAND TOTAL
	WEST BRANCH (continued)		COASTAL BRANCH						
	Reach 30	Subtotal	Reach 31A	Reach 33A	Reach 34	Reach 35	Subtotal		
	(64)	(65)	(66)	(67)	(68)	(69)	(70)	(71)	(72)
1952	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	42,918
1963	0	0	0	0	0	0	0	0	168,358
1964	0	0	0	0	0	0	0	0	184,729
1965	0	0	0	0	0	0	0	0	378,874
1966	0	0	0	0	0	0	0	0	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	5,370,219	945,018	0	0	0	945,018	26,515,438	27,731,313
1979	958,068	3,897,599	871,755	0	0	0	871,755	23,435,364	24,689,214
1980	222,549	3,764,097	1,047,550	0	0	0	1,047,550	30,117,591	32,050,893
1981	1,096,911	6,014,157	1,031,157	0	0	0	1,031,157	33,971,731	35,626,045
1982	978,609	6,416,739	1,015,994	0	0	0	1,015,994	39,577,457	41,675,534
1983	2,055,401	6,563,320	1,132,260	0	0	0	1,132,260	51,226,632	53,499,949
1984	910,685	7,845,541	1,381,961	0	0	0	1,381,961	64,796,340	67,788,181
1985	-2,095,947	6,585,968	1,739,163	0	0	0	1,739,163	67,732,867	71,121,221
1986	-1,556,314	8,076,913	1,895,310	0	0	0	1,895,310	75,404,891	79,222,503
1987	368,524	10,113,470	2,348,962	0	0	0	2,348,962	77,902,654	81,819,302
1988	-617,338	8,958,479	2,460,537	0	0	0	2,460,537	74,107,260	78,573,112
1989	-1,259,086	8,383,729	2,293,382	0	0	0	2,293,382	73,949,390	78,391,982
1990	-1,179,704	8,459,004	2,294,600	0	0	0	2,294,600	73,990,207 12,933	78,434,196
1991	-1,079,013	8,575,772	2,296,526	0	0	0	2,296,526	74,498,180	78,944,900
1992	-1,055,433	8,607,512	2,297,696	0	0	0	2,297,696	73,471,806	77,920,647
1993	-1,605,018	8,084,111	2,298,786	300,256	2,383	4,977	2,606,402	73,408,390	77,858,703
1994	-247,115	9,487,280	2,309,600	302,425	2,859	5,968	2,611,852	76,297,206	80,750,120
1995	-2,018,473	7,695,171	2,299,740	301,386	2,633	5,496	2,609,255	72,916,118	77,367,537
1996	-54,293	9,697,533	2,301,268	303,214	3,034	6,332	2,613,848	76,012,834	80,466,538
1997	-1,821,046	7,917,989	2,300,705	302,518	2,885	6,021	2,612,129	73,122,072	77,574,778
1998	67,147	9,850,578	2,302,437	304,599	3,341	6,969	2,617,346	77,605,483	82,060,876
1999	-2,066,038	7,712,625	2,302,192	304,289	3,275	6,835	2,616,591	72,483,863	76,938,849
2000	-592,591	9,213,400	2,303,274	305,569	3,558	7,425	2,619,826	75,524,103	79,980,754
2001	-778,667	9,050,141	2,306,627	306,289	3,718	7,756	2,624,390	74,928,259	79,391,231
2002	-1,321,384	8,671,176	2,313,112	314,064	5,423	11,310	2,643,909	76,224,043	80,697,091
2003	-1,395,152	8,615,575	2,313,773	314,859	5,597	11,673	2,645,902	76,784,054	81,381,926
2004	615,827	10,816,318	2,320,191	317,028	5,892	12,289	2,655,400	77,089,126	81,710,122
2005	-2,443,522	7,757,234	2,320,150	316,979	5,881	12,267	2,655,277	77,939,462	82,560,393
2006	-605,283	9,607,041	2,349,379	324,258	6,042	12,620	2,692,299	77,648,211	82,269,842
2007	-886,289	9,449,719	2,349,813	324,779	6,156	12,858	2,693,606	77,962,653	82,584,963
2008	-711,399	9,635,034	2,350,247	325,302	6,270	13,097	2,694,916	78,032,028	82,655,016
2009	-397,604	10,096,631	2,356,152	332,397	7,823	16,334	2,712,706	82,260,320	86,892,498
2010	-1,494,474	9,000,399	2,356,173	332,422	7,829	16,344	2,712,768	76,249,922 11,139	80,882,137
2011	953,624	11,444,950	2,352,862	332,908	7,935	16,566	2,710,271	81,179,676	85,805,220
2012	-2,091,689	8,407,386	2,353,125	333,228	8,005	16,710	2,711,068	77,929,077	82,555,034
2013	995,403	11,503,035	2,353,469	333,658	8,097	16,901	2,712,125	80,318,649	84,945,173
2014	-4,400,579	6,114,745	2,353,786	334,040	8,180	17,077	2,713,083	78,601,831	83,228,854
2015	2,408,248	13,071,351	2,359,719	341,173	9,741	20,327	2,730,960	82,753,510	87,389,773
2016	-4,374,468	6,294,972	2,359,986	341,498	9,812	20,476	2,731,772	75,391,599	80,028,286
2017	1,951,672	12,618,865	2,359,896	341,399	9,789	20,426	2,731,510	82,961,151	87,597,718
2018	-978,001	9,687,178	2,359,831	341,332	9,773	20,393	2,731,329	79,339,452	83,975,928
2019	-3,248,356	7,566,560	2,365,855	348,594	11,359	23,696	2,749,504	77,663,311	82,309,191
2020	897,452	11,704,135	2,365,619	348,336	11,299	23,570	2,748,824	83,204,178	87,849,724
2021	1,005,843	11,803,314	2,365,338	348,010	11,225	23,420	2,747,993	83,546,130	88,045,940
2022	-3,557,897	7,069,575	2,365,399	348,125	11,244	23,458	2,748,226	77,654,993	82,137,624
2023	3,130,735	13,749,260	2,365,099	347,776	11,165	23,296	2,747,336	82,232,788	86,714,962
2024	-869,317	9,728,389	2,311,019	335,751	11,099	23,124	2,680,993	78,826,147	83,299,120
2025	-2,265,848	8,134,279	2,310,981	335,713	11,088	23,103	2,680,885	75,878,299	80,351,210
2026	-634,718	9,873,434	2,315,314	340,928	12,229	25,478	2,693,949	78,681,749	83,161,403
2027	1,957,055	12,458,430	2,315,041	340,609	12,158	25,329	2,693,137	82,703,821	87,183,050
2028	-666,548	9,835,070	2,315,118	340,716	12,179	25,374	2,693,387	76,052,429	80,531,780
2029	-2,173,717	8,322,425	2,314,905	340,477	12,125	25,261	2,692,768	78,648,804	83,127,829
2030	-1,808,525	8,685,541	2,314,852	340,444	12,112	25,234	2,692,642	76,668,448	81,147,414
2031	3,310,878	13,792,968	2,314,412	339,948	11,998	24,998	2,691,356	80,809,884	85,288,197
2032	-3,826,414	6,653,073	2,314,411	339,969	12,001	25,001	2,691,382	73,234,213	77,712,550
2033	-27,466	10,540,784	2,318,078	344,371	12,965	27,010	2,702,424	81,163,746	85,647,791
2034	-2,467,876	8,093,748	2,317,962	344,232	12,934	26,948	2,702,076	75,509,010	79,992,876
2035	2,877,777	13,424,008	2,317,455	343,622	12,800	26,668	2,700,545	82,440,607	86,923,679

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

(in dollars)

Calendar Year	NORTH BAY AQUEDUCT				SOUTH BAY AQUEDUCT	CALIFORNIA AQUEDUCT			
	Reach 1	Reach 3A	Reach 3B		Reach 1	Reach 1	Reach 4	Reach 14A	Reach 15A
	Barker Slough Pumping Plant	Cordelia Pumping Plant (Solano)	Cordelia Pumping Plant (Napa) [a]	Total	South Bay and Del Valle Pumping Plants [b]	Harvey O. Banks Delta Pumping Plant	Dos Amigos Pumping Plant [c]	Buena Vista Pumping Plant	Wheeler Ridge Pumping Plant
	(1)	(2A)	(2B)	(3)	(4)	(5)	(6)	(7)	(8)
1962	0	0	0	0	36,970	0	0	0	0
1963	0	0	0	0	57,711	0	0	0	0
1964	0	0	0	0	74,134	0	0	0	0
1965	0	0	0	0	142,609	0	0	0	0
1966	0	0	0	0	192,605	0	0	0	0
1967	0	0	0	0	223,117	13,881	0	0	0
1968	0	0	6,989	6,989	336,671	452,630	202,947	0	0
1969	0	0	8,551	8,551	257,579	293,741	135,425	0	0
1970	0	0	13,598	13,598	396,358	346,215	211,197	1	0
1971	0	0	10,609	10,609	381,662	574,015	225,188	138,001	17,664
1972	0	0	14,434	14,434	598,702	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	205,643	165,314	172,120
1978	0	0	21,692	21,692	586,355	2,215,828	574,814	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	1,883,445	1,011,459	853,317	826,802
1981	0	0	21,692	21,692	567,692	3,901,265	1,887,277	1,278,586	1,257,585
1982	0	0	12,558	12,558	523,766	3,050,373	1,445,741	1,198,167	1,216,356
1983	0	0	2,554	2,554	142,803	937,577	400,483	365,733	333,888
1984	0	0	5,157	5,157	244,518	1,588,446	822,318	617,840	544,186
1985	0	0	9,769	9,769	512,362	3,332,682	1,676,272	1,459,501	1,447,793
1986	0	0	19,957	19,957	1,022,535	6,690,913	3,176,950	2,930,150	3,005,846
1987	0	0	20,102	20,102	1,314,877	10,616,152	5,102,472	5,257,359	5,699,016
1988	30,907	36,883	19,026	86,816	1,159,137	8,226,151	3,987,570	4,102,640	4,442,714
1989	39,562	45,960	22,392	107,914	1,309,980	9,077,972	4,348,746	4,407,680	4,712,599
1990	44,653	51,244	24,853	120,750	1,312,664	9,122,080	4,375,160	4,343,985	4,666,286
1991	49,923	55,385	30,327	135,635	1,403,289	9,584,171	4,591,133	4,566,251	4,954,341
1992	55,973	57,991	35,316	149,280	1,454,205	9,751,909	4,662,920	4,648,998	5,048,130
1993	65,971	64,681	42,748	173,400	1,614,565	10,605,764	5,046,733	4,877,361	5,293,982
1994	80,181	74,742	52,913	207,836	1,850,599	12,057,419	5,706,331	5,628,449	6,148,613
1995	92,955	72,683	55,692	221,330	1,790,083	11,300,152	5,361,375	5,178,548	5,630,705
1996	113,007	82,249	65,152	260,408	1,970,069	12,797,307	6,070,325	6,069,824	6,656,088
1997	112,616	82,714	67,501	262,831	1,929,962	12,331,673	5,953,490	5,828,390	6,373,028
1998	126,802	94,053	78,785	299,640	2,113,821	13,834,998	6,653,746	6,681,283	7,348,399
1999	128,678	96,306	82,561	307,545	2,085,906	13,465,002	6,574,181	6,440,262	7,072,967
2000	138,884	104,153	91,985	335,022	2,198,686	14,625,335	7,150,409	7,118,681	7,870,125
2001	146,379	110,288	99,054	355,721	2,262,057	15,148,968	7,447,309	7,448,614	8,213,681
2002	195,526	150,191	134,885	480,602	2,948,846	19,729,680	9,493,906	9,687,615	10,730,396
2003	205,095	159,315	144,003	508,413	3,019,243	20,341,709	9,773,706	10,095,006	11,196,779
2004	218,008	171,365	155,708	545,081	3,136,253	21,252,571	10,187,391	10,615,193	11,825,656
2005	220,268	169,351	161,608	551,227	3,131,902	21,297,667	10,212,585	10,686,762	11,915,051
2006	227,203	172,067	171,087	570,357	3,179,823	21,942,562	10,518,976	11,170,934	12,438,728
2007	233,999	174,614	180,514	589,127	3,226,082	22,448,200	10,747,489	11,470,566	12,785,240
2008	241,015	177,327	190,479	608,821	3,272,222	22,909,070	10,952,328	11,751,672	13,112,414
2009	291,496	211,327	236,057	738,880	3,899,624	27,441,046	12,951,437	14,086,175	15,759,841
2010	296,098	211,506	245,415	753,019	3,901,973	27,426,041	12,942,414	14,067,720	15,727,002
2011	304,304	215,813	258,684	778,801	3,944,954	28,040,409	13,233,565	14,485,592	16,209,443
2012	311,147	217,462	271,544	800,153	3,973,183	28,308,587	13,341,565	14,645,085	16,394,606
2013	319,628	219,581	285,252	824,461	4,011,881	28,856,988	13,479,069	15,010,368	16,833,361
2014	327,615	221,491	299,303	848,409	4,045,822	28,889,082	13,466,510	14,948,831	16,758,911
2015	384,545	256,079	359,903	1,000,527	4,676,476	33,899,484	15,675,091	17,666,910	19,888,505
2016	391,774	257,730	374,493	1,023,997	4,705,517	33,918,065	15,644,904	17,601,902	19,816,421
2017	396,210	257,390	386,272	1,039,872	4,697,015	34,518,815	15,880,086	18,116,140	20,443,006
2018	400,695	257,150	398,632	1,056,477	4,691,499	34,592,771	15,902,777	18,218,749	20,571,130
2019	461,445	292,388	468,250	1,222,083	5,334,389	39,148,478	17,830,401	20,527,988	23,110,020
2020	465,358	291,182	481,317	1,237,857	5,312,390	39,486,399	17,918,576	20,719,908	23,427,086
2021	463,347	289,687	479,360	1,232,394	5,283,855	39,340,452	17,826,106	20,388,480	23,225,897
2022	464,625	290,312	481,023	1,235,960	5,295,253	39,351,543	17,580,315	20,318,602	23,159,383
2023	462,516	288,786	478,680	1,229,982	5,264,875	39,472,111	17,641,390	20,534,032	23,431,013
2024	463,639	289,253	479,827	1,232,719	5,272,130	39,626,868	17,510,211	20,696,139	23,626,591
2025	463,774	289,078	480,021	1,232,873	5,268,920	39,572,554	17,516,047	20,711,350	23,646,132
2026	504,839	314,390	522,056	1,341,285	5,730,308	43,295,098	19,197,585	22,794,400	26,049,078
2027	502,670	312,853	519,502	1,335,025	5,702,278	43,169,823	19,176,425	22,809,241	26,075,392
2028	503,776	313,399	520,411	1,337,586	5,712,252	43,204,960	19,239,967	22,904,190	26,188,191
2029	502,261	312,347	518,535	1,333,143	5,691,673	43,119,963	19,257,086	22,973,178	26,254,146
2030	502,453	312,607	518,346	1,333,406	5,689,600	43,098,235	19,193,831	23,056,201	26,331,334
2031	498,661	310,248	514,435	1,323,344	5,646,663	43,214,022	19,202,944	23,244,993	26,678,454
2032	498,887	310,389	514,668	1,323,944	5,649,221	43,358,306	19,177,853	23,289,042	26,736,093
2033	533,273	331,783	550,142	1,415,198	6,038,596	47,377,694	20,982,135	25,614,339	29,461,839
2034	532,198	331,114	549,032	1,412,344	6,026,421	47,547,316	21,062,669	25,747,593	29,536,140
2035	527,423	328,143	544,106	1,399,672	5,972,349	47,817,704	21,200,937	26,056,206	29,914,575

a) Costs for the 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 to Tulare Lake Basin Water Storage District. Refer to Appendix B text discussion of Table B-17 under "Project Water Charges".

THRU VARIABLE OMP&R COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (Continued)							
	Reach 16A Ira J. Chrisman Wind Gap Pumping Plant	Reach 17E A.D. Edmonston Pumping Plant	Reach 18A Alamo Powerplant	Reach 22B Pear-blossom Pumping Plant	Reach 24 Silver-wood Lake (d	Reach 26A Devil Canyon Powerplant	Reach 28J Lake Perris (d	Reach 29A Oso Pumping Plant
	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
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	165,589	494,616	0	23,387	4,216	-3,024	0	93,212
1973	434,834	1,524,487	0	219,421	47,861	-436,768	0	158,063
1974	589,117	2,058,680	0	315,705	98,179	-496,517	52,549	189,479
1975	1,130,256	3,940,915	0	577,509	25,950	-1,033,054	65,938	349,000
1976	1,222,413	4,235,934	0	869,201	122,336	-1,459,978	104,257	245,397
1977	349,754	1,152,422	0	296,678	260,257	-1,115,096	49,907	18,075
1978	1,034,893	3,636,670	0	1,551,015	0	-3,038,194	0	69,043
1979	1,438,690	4,965,846	0	1,712,620	122,803	-3,159,826	355,442	118,995
1980	1,634,049	5,416,332	0	1,733,275	154,636	-3,318,152	0	36,761
1981	2,699,956	8,885,463	0	2,165,036	291,630	-3,675,067	375,051	424,396
1982	2,602,926	8,336,825	0	1,510,506	3,067	-3,067,524	0	537,869
1983	600,677	1,770,699	0	320,819	375,166	-4,483,255	0	135,793
1984	1,002,475	3,035,089	0	531,673	383,201	-7,342,702	-11,266	232,015
1985	2,895,387	9,559,623	0	1,186,755	0	-9,870,006	-34,433	910,249
1986	5,980,106	20,005,356	-837,785	3,210,838	134,940	-13,544,603	0	1,388,240
1987	11,240,697	37,723,187	-1,980,442	6,423,757	0	-20,982,275	304,961	2,422,958
1988	8,609,978	28,041,416	-2,282,844	4,873,339	443,688	-21,464,606	0	1,957,035
1989	9,352,346	30,582,634	-2,295,279	5,386,375	0	-21,273,506	135,082	1,983,484
1990	9,305,334	30,666,068	-2,343,598	5,386,403	0	-21,638,654	0	1,967,140
1991	9,967,283	32,887,271	-2,468,555	5,998,903	0	-21,793,762	0	2,049,561
1992	10,163,153	33,546,303	-2,489,193	6,104,797	150,399	-22,059,007	392,290	2,081,818
1993	10,676,030	35,377,531	-2,562,934	6,742,330	803,326	-22,964,511	0	2,012,506
1994	12,469,606	41,506,082	-2,650,594	7,712,774	0	-23,312,651	109,024	2,411,647
1995	11,394,009	37,834,138	-2,658,984	7,404,549	556,036	-23,748,415	168,067	2,015,150
1996	13,527,895	45,112,678	-2,845,604	8,563,673	0	-25,096,970	0	2,497,548
1997	12,960,058	42,997,103	-2,886,253	8,427,076	823,902	-25,767,932	12,691	2,244,880
1998	15,086,564	50,041,770	-3,025,684	9,617,757	0	-26,475,407	60,247	2,732,967
1999	14,565,012	48,002,059	-3,030,634	9,501,073	1,000,211	-27,088,079	436,668	2,501,255
2000	16,287,411	53,655,537	-3,159,777	10,409,570	393,340	-27,776,078	0	2,902,137
2001	17,057,034	56,046,142	-3,230,795	10,927,417	302,594	-28,314,586	215,743	3,008,343
2002	22,297,642	73,863,468	-3,349,245	14,669,162	0	-29,090,148	0	3,701,008
2003	23,181,026	76,950,665	-3,433,028	15,391,821	0	-29,853,797	0	3,808,732
2004	24,398,853	81,095,256	-3,451,403	16,068,898	1,343,650	-30,359,042	467,635	4,165,740
2005	24,539,947	81,522,483	-3,600,469	16,776,578	0	-31,237,865	0	3,986,795
2006	25,636,618	85,160,923	-3,658,248	17,312,209	868,622	-31,839,864	0	4,270,811
2007	26,395,782	87,805,051	-3,753,657	17,940,052	298,220	-32,501,788	189,351	4,306,147
2008	27,066,578	90,119,417	-3,819,622	18,469,705	498,502	-32,989,892	136,339	4,348,760
2009	32,654,131	109,336,769	-3,943,317	22,615,201	0	-33,959,025	0	4,991,184
2010	32,585,463	109,173,289	-3,985,451	22,703,415	2,175,313	-34,585,876	222,015	4,896,859
2011	33,610,922	112,774,344	-4,075,285	23,433,596	0	-34,824,288	1,164,470	5,041,515
2012	33,986,599	114,158,743	-4,164,195	24,088,865	608,995	-35,664,733	0	4,907,638
2013	34,917,838	117,359,347	-4,210,693	24,549,004	1,344,039	-36,101,726	0	5,129,034
2014	34,756,835	116,839,180	-4,291,318	25,179,774	0	-36,373,840	572,346	4,695,307
2015	41,139,013	139,622,681	-4,349,269	29,367,503	1,164,575	-37,119,722	0	5,809,857
2016	40,984,807	139,092,941	-4,417,268	29,961,637	862,522	-37,502,283	292,544	5,401,482
2017	42,340,874	143,769,306	-4,503,902	30,460,417	439,022	-38,066,964	0	5,810,362
2018	42,639,693	144,799,885	-4,569,111	30,824,281	330,205	-38,474,147	233,702	5,750,353
2019	48,272,021	164,386,249	-4,638,780	35,476,646	645,572	-39,049,444	38,613	6,109,953
2020	49,242,142	167,797,820	-4,762,633	35,930,159	0	-39,572,013	0	6,310,467
2021	49,114,359	167,390,440	-4,787,787	35,820,683	0	-39,679,436	1,372,156	6,280,495
2022	48,889,719	167,137,239	-4,864,848	36,398,032	264,012	-40,313,618	0	5,966,744
2023	49,250,108	168,919,286	-4,892,423	36,294,782	1,259,969	-40,607,175	81,956	6,260,525
2024	49,429,938	170,207,714	-4,951,891	36,700,276	0	-40,765,893	699,131	6,229,715
2025	49,320,552	170,258,456	-5,047,147	36,955,942	845,507	-41,174,913	0	6,085,498
2026	54,247,811	187,811,934	-5,103,138	40,464,885	510,163	-41,377,644	0	6,738,450
2027	54,232,020	188,031,394	-5,142,330	40,440,364	0	-41,398,071	847,597	6,719,470
2028	54,471,550	188,867,735	-5,164,568	40,539,327	2,433,080	-41,866,279	0	6,574,951
2029	54,664,300	189,557,918	-5,258,045	41,030,016	0	-42,199,754	0	6,356,189
2030	54,881,024	190,220,806	-5,278,037	41,188,661	114,020	-42,176,168	315,958	6,351,600
2031	55,677,462	192,842,161	-5,401,026	41,926,224	1,689,166	-43,205,926	0	6,393,573
2032	56,040,895	193,999,575	-5,542,773	43,032,345	1,548,730	-44,323,696	274,898	5,990,412
2033	62,091,694	214,609,538	-5,723,372	47,481,355	0	-45,587,739	0	6,654,996
2034	62,506,974	215,975,193	-5,845,498	48,372,797	1,120,206	-46,633,123	158,257	6,294,765
2035	63,418,976	219,202,993	-5,981,009	49,028,605	0	-47,613,406	1,564,288	6,266,942

d) These values represent a proportionate allocation of the total variable OMP&R costs of pumping and power recovery plants (Table B-3) associated with net annual withdrawals from reservoir storage for the Project transportation facilities. The allocation is determined annually by applying the following ratio, calculated from the data shown in Table B-6: "Reservoir Storage Changes" (withdrawals, as a positive value) conveyed through each plant, in acre-feet, 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 THRU VARIABLE OMP&R COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (Continued)							GRAND TOTAL
	Reach 29G William E. Warne Powerplant	Reach 29H Pyramid Lake (d	Reach 29J Castaic Powerplant	Reach 30 Castaic Lake (d	Reach 31A Las Perillas and Badger Hill Pumping Plants (e	Reach 33A Devil's Den Sawtooth and Polonio PP's and San Luis Obispo Pwp.	Total	
	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
1962	0	0	0	0	0	0	0	36,970
1963	0	0	0	0	0	0	0	57,711
1964	0	0	0	0	0	0	0	74,134
1965	0	0	0	0	0	0	0	142,609
1966	0	0	0	0	0	0	0	192,605
1967	0	0	0	0	0	0	13,881	236,998
1968	0	0	0	0	118,676	0	774,253	1,117,913
1969	0	0	0	0	78,350	0	507,516	773,646
1970	0	0	0	0	136,429	0	693,842	1,103,798
1971	0	0	0	0	166,296	0	1,121,164	1,513,435
1972	0	3,578	-193,058	72,639	237,638	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	-611,047	-1,242,003	63,079	0	566,136	1,101,767
1978	0	1,061,100	-1,377,265	0	179,925	0	7,144,475	7,752,522
1979	0	0	-2,384,747	-12,206	192,126	0	9,240,027	9,861,400
1980	0	456,691	-984,154	9,641	168,458	0	9,882,560	10,425,874
1981	0	251,289	-2,828,294	0	169,178	0	17,083,351	17,672,735
1982	-783,626	0	-3,463,971	0	166,519	0	12,753,228	13,289,552
1983	-694,194	111,688	-3,921,157	-1,340,325	13,221	0	-5,073,187	-4,927,830
1984	-2,032,940	0	-2,154,457	-2,112,614	105,301	0	-4,791,435	-4,541,760
1985	-5,949,505	0	-12,611,001	0	155,428	0	-5,841,255	-5,319,124
1986	-5,334,559	0	-10,432,628	422,415	321,439	0	17,117,618	18,160,110
1987	-7,503,853	0	-13,819,537	0	428,913	0	40,933,365	42,268,344
1988	-7,909,975	0	-14,084,103	0	316,774	0	19,259,777	20,505,730
1989	-7,683,407	0	-13,613,732	115,204	355,744	0	25,591,942	27,009,836
1990	-7,918,996	0	-13,893,276	26,520	356,752	0	24,421,204	25,854,618
1991	-8,060,001	0	-14,062,451	0	369,761	0	28,583,906	30,122,830
1992	-8,025,510	0	-14,061,320	0	374,906	0	30,290,593	31,894,078
1993	-7,410,779	0	-12,920,443	497,130	623,695	0	36,697,721	38,485,686
1994	-8,207,832	0	-14,157,587	0	692,816	0	46,114,097	48,172,532
1995	-7,074,309	0	-12,398,037	942,158	659,621	0	42,564,763	44,576,176
1996	-8,246,691	0	-14,238,650	0	717,812	0	51,585,235	53,815,712
1997	-7,531,722	0	-13,141,367	757,504	695,437	0	50,077,958	52,270,751
1998	-8,369,517	0	-14,397,480	0	761,688	0	60,551,331	62,964,792
1999	-7,608,343	0	-13,199,955	1,037,459	751,630	0	60,420,768	62,814,219
2000	-8,439,092	0	-14,459,891	0	792,268	0	67,369,975	69,903,683
2001	-8,454,482	0	-14,505,639	0	815,103	0	72,125,446	74,743,224
2002	-8,360,191	0	-14,307,026	416,639	1,062,565	0	110,545,471	113,974,919
2003	-8,361,955	0	-14,308,003	513,435	1,087,946	0	116,384,042	119,911,698
2004	-8,632,430	0	-14,786,167	0	1,130,109	0	125,321,910	129,003,244
2005	-8,104,101	0	-13,868,256	1,612,109	1,128,541	0	126,867,827	130,550,956
2006	-8,571,232	0	-14,671,316	0	1,145,808	0	131,725,531	135,475,711
2007	-8,577,609	0	-14,645,509	58,251	1,162,477	0	136,128,263	139,943,472
2008	-8,593,244	0	-14,685,239	0	1,179,103	0	140,455,891	144,336,934
2009	-8,595,674	0	-14,690,914	0	1,405,180	0	180,052,034	184,690,538
2010	-8,410,784	0	-14,420,254	805,644	1,406,027	0	182,728,837	187,383,829
2011	-8,622,655	0	-14,690,343	0	1,421,514	0	187,202,799	191,926,554
2012	-8,247,903	0	-14,216,176	1,440,746	1,431,686	0	191,020,108	195,793,444
2013	-8,581,780	0	-14,696,000	0	1,445,631	0	195,334,480	200,170,822
2014	-7,834,818	0	-13,429,624	3,823,740	1,457,860	0	199,458,776	204,353,007
2015	-8,629,041	0	-14,686,136	0	1,685,110	0	241,134,561	246,811,564
2016	-8,019,943	0	-13,641,681	3,873,112	1,695,574	0	245,564,736	251,294,250
2017	-8,643,325	0	-14,662,058	0	1,692,510	0	247,594,289	253,331,176
2018	-8,604,896	0	-14,573,017	391,004	1,690,522	0	249,723,901	255,471,877
2019	-8,282,470	0	-14,030,440	2,846,571	1,922,179	0	294,313,557	300,870,029
2020	-8,658,440	0	-14,664,474	0	1,914,252	0	295,089,249	301,639,496
2021	-8,656,136	0	-14,675,255	0	1,903,971	0	294,864,425	301,380,674
2022	-8,216,759	0	-13,947,715	3,155,593	1,908,077	0	296,786,319	303,317,532
2023	-8,635,748	0	-14,660,313	0	1,897,131	0	296,246,644	302,741,501
2024	-8,623,196	0	-14,585,861	370,335	1,899,745	0	298,069,822	304,574,671
2025	-8,482,373	0	-14,272,882	1,720,283	1,898,588	0	299,553,594	306,055,387
2026	-8,730,888	0	-14,645,718	104,979	2,064,845	0	333,421,840	340,493,433
2027	-8,721,592	0	-14,677,990	0	2,054,745	0	333,616,488	340,653,791
2028	-8,696,787	0	-14,649,947	137,161	2,058,338	0	336,241,869	343,291,707
2029	-8,463,359	0	-14,322,325	1,729,645	2,050,923	0	336,749,881	343,774,697
2030	-8,523,891	0	-14,399,342	1,331,632	2,050,175	0	337,756,039	344,779,045
2031	-8,663,622	0	-14,671,151	0	2,034,704	0	340,961,978	347,931,985
2032	-8,228,297	0	-13,947,840	3,418,844	2,035,625	0	346,860,012	353,833,177
2033	-8,656,335	0	-14,679,395	0	2,175,932	0	381,802,681	389,256,475
2034	-8,426,595	0	-14,271,514	2,053,931	2,171,544	0	387,370,655	394,809,420
2035	-8,649,153	0	-14,672,942	0	2,152,061	0	389,706,777	397,078,798

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 THRU DELTA WATER CHARGE

(in dollars)

Calendar Year	Initial Project Conservation Facilities (Portions of Upper Feather Lakes, Oroville-Thermalito Facilities and California Aqueduct)					Planning and Pre-Operating Costs	Total
	Capital Costs (a	Capital Cost Credits (b	Operating Costs (c	Application of Oroville Power Revenues to			
				Capital Costs (d	Operating Costs (e	(a & (f	
	(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	94,297,143	-812,145	-13,446	0	0	1,189,212	94,660,764
1968	39,888,213	-431,574	1,293,465	-951,000	0	793,399	40,592,503
1969	5,280,238	-259,015	2,870,059	-11,007,000	0	601,867	-2,513,851
1970	4,130,524	-203,733	4,797,921	-14,650,000	-1,500,000	516,659	-6,908,629
1971	3,877,007	-193,631	6,005,767	-14,650,000	-1,500,000	408,754	-6,052,103
1972	4,569,025	-196,361	5,357,688	-14,650,000	-1,500,000	287,374	-6,132,274
1973	3,985,415	-136,997	6,062,679	-14,650,000	-1,500,000	203,384	-6,035,519
1974	6,659,999	-137,503	6,852,839	-17,950,000	-1,500,000	201,907	-5,872,758
1975	8,084,449	-234,567	7,601,709	-14,650,000	-1,500,000	146,188	-552,221
1976	5,870,528	-204,944	6,936,129	-14,650,000	-1,500,000	205,234	-3,343,053
1977	21,282,912	-150,214	10,393,180	-14,650,000	-1,500,000	860,353	16,236,231
1978	7,617,057	-64,566	13,682,458	-14,650,000	-1,500,000	2,227,479	7,312,428
1979	9,011,359	0	9,447,259	-14,650,000	-1,500,000	2,151,325	4,459,943
1980	10,352,862	0	12,503,408	-14,650,000	-1,500,000	3,669,698	10,375,968
1981	11,092,384	0	10,347,077	-14,650,000	-1,500,000	4,542,900	9,832,361
1982	16,869,824	0	16,186,548	-14,650,000	-1,500,000	4,427,087	21,333,459
1983	12,933,119	0	23,916,842	-34,705,000	-8,735,000	3,724,596	-2,865,443
1984	10,418,627	0	24,372,762	-14,650,000	-9,348,000	3,792,124	14,585,513
1985	10,738,541	0	24,525,875	-14,650,000	-8,208,000	3,846,483	16,252,899
1986	12,777,626	0	30,659,940	-14,650,000	-9,174,000	4,646,859	24,260,425
1987	16,268,785	0	35,287,343	-14,650,000	-9,451,000	4,606,805	32,061,933
1988	11,139,202	0	31,165,681	-14,650,000	-9,574,000	3,835,268	21,916,151
1989	7,197,742	0	30,644,015	-14,751,000	-9,649,000	2,788,279	16,230,036
1990	5,165,469	0	29,574,352	-16,126,000	-9,642,000	2,262,823	11,234,644
1991	729,562	0	31,065,782	-16,126,000	-9,646,000	1,372,924	7,396,268
1992	47,054	0	31,389,813	-16,126,000	-9,661,000	1,373,650	7,023,517
1993	0	0	31,361,314	-16,126,000	-9,661,000	1,373,667	6,947,981
1994	0	0	30,579,520	-16,126,000	-9,693,000	1,373,667	6,134,187
1995	0	0	30,831,795	-16,126,000	-9,734,000	1,373,667	6,345,462
1996	0	0	31,342,041	-16,126,000	-9,784,000	1,373,667	6,805,708
1997	0	0	31,306,670	-16,126,000	-9,840,000	1,373,667	6,714,337
1998	0	0	32,333,352	-16,126,000	-9,840,000	1,373,667	7,741,019
1999	0	0	31,894,879	-16,126,000	-9,918,000	1,373,667	7,224,546
2000	0	0	32,097,985	-16,126,000	-9,999,000	1,373,667	7,346,652
2001	0	0	31,535,096	-16,126,000	-10,210,000	1,270,754	6,469,850
2002	0	0	32,505,747	-16,126,000	-10,346,000	1,270,754	7,304,501
2003	0	0	33,631,602	-16,126,000	-10,951,000	1,270,754	7,825,356
2004	0	0	34,323,195	-16,126,000	-10,935,000	1,270,754	8,532,949
2005	0	0	34,005,330	-16,126,000	-10,821,000	1,270,754	8,329,084
2006	0	0	34,124,339	-16,126,000	-10,708,000	1,270,754	8,561,093
2007	0	0	34,295,749	-16,126,000	-10,710,000	1,270,754	8,730,503
2008	0	0	33,985,731	-16,126,000	-10,807,000	1,270,754	8,323,485
2009	0	0	35,059,125	-16,126,000	-10,846,000	1,270,754	9,357,879
2010	0	0	35,543,216	-16,126,000	-10,752,000	1,270,754	9,935,970
2011	0	0	34,836,841	-16,126,000	-10,661,000	0	8,049,841
2012	0	0	35,851,457	-16,126,000	-10,564,000	0	9,161,457
2013	0	0	34,941,652	-16,126,000	-10,564,000	0	8,251,652
2014	0	0	35,630,104	-16,126,000	-10,564,000	0	8,940,104
2015	0	0	35,782,889	-16,126,000	-10,564,000	0	9,092,889
2016	0	0	37,622,481	-16,126,000	-10,564,000	0	10,932,481
2017	0	0	35,957,730	-16,126,000	-10,564,000	0	9,267,730
2018	0	0	35,577,790	-16,126,000	-10,564,000	0	8,887,790
2019	0	0	38,454,678	-16,126,000	-10,461,000	0	11,867,678
2020	0	0	34,428,544	-16,126,000	-10,354,000	0	7,948,544
2021	0	0	37,692,415	-16,126,000	-9,337,000	0	12,229,415
2022	0	0	33,645,288	-16,126,000	-9,037,000	0	8,482,288
2023	0	0	35,397,980	-16,126,000	-8,852,000	0	10,419,980
2024	0	0	34,030,511	-16,126,000	-8,789,000	0	9,115,511
2025	0	0	35,992,617	-16,126,000	-8,789,000	0	11,077,617
2026	0	0	35,464,218	-16,126,000	-8,789,000	0	10,549,218
2027	0	0	35,609,144	-16,126,000	-8,441,000	0	11,042,144
2028	0	0	35,617,862	-16,126,000	-8,094,000	0	11,397,862
2029	0	0	35,298,574	-16,126,000	-7,746,000	0	11,426,574
2030	0	0	36,201,741	-16,126,000	-7,658,000	0	12,417,741
2031	0	0	33,991,744	-16,126,000	-7,460,000	0	10,405,744
2032	0	0	34,906,333	-16,126,000	-7,262,000	0	11,518,333
2033	0	0	34,179,601	-16,126,000	-7,153,000	0	10,900,601
2034	0	0	35,691,429	-16,126,000	-7,045,000	0	12,520,429
2035	0	0	34,395,702	-16,126,000	-7,045,000	0	11,224,702
TOTAL	743,468,162	-11,528,320	1,890,827,156	-1,070,210,000	-525,064,000	80,120,160	1,107,613,158

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 San Luis 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 preoperating costs of additional Project conservation facilities incurred through the previous year (1985) are reflected in the Delta Water Charge.

TABLE B-14: CAPITAL COSTS OF TRANSPORTATION

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC & WCD	Solano County FC & WCD (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	99	409	591	121	224	345
1953	0	0	0	324	406	1,808	2,538	336	619	955
1954	0	0	0	819	1,088	5,150	7,057	422	779	1,201
1955	0	0	0	976	1,321	6,297	8,594	211	388	599
1956	0	0	0	8,844	12,069	63,816	84,729	227	419	646
1957	15,199	11,435	26,634	21,563	29,313	649,598	700,474	290	535	825
1958	33,420	16,591	50,011	67,764	67,955	733,415	869,134	721	1,330	2,051
1959	20,697	6,591	27,288	154,254	142,959	493,049	790,262	25,853	53,921	79,774
1960	9,097	8,830	17,927	296,492	274,637	1,018,662	1,589,791	37,106	77,941	115,047
1961	6,950	7,445	14,395	853,505	797,749	1,914,710	3,565,964	15,637	31,208	46,845
1962	-195	-925	-1,120	545,123	576,571	1,686,044	2,807,738	19,640	37,213	56,853
1963	1,320	1,110	2,430	657,427	1,077,895	3,243,842	4,979,164	73,105	136,569	209,674
1964	38,392	35,467	73,859	712,653	1,244,064	7,251,805	9,208,522	146,715	273,922	420,637
1965	198,833	62,221	261,054	360,783	468,128	3,414,466	4,243,377	261,459	486,434	747,893
1966	461,619	49,917	511,536	592,720	562,232	2,245,228	3,400,180	598,330	1,107,174	1,705,504
1967	1,569,498	40,379	1,609,877	797,000	772,107	2,401,877	3,970,984	947,517	1,751,645	2,699,162
1968	859,613	61,691	921,304	736,474	681,350	1,997,934	3,415,758	359,891	666,475	1,026,366
1969	74,389	59,317	133,706	269,700	258,156	764,957	1,292,813	84,315	157,239	241,554
1970	43,362	67,876	111,238	58,678	56,854	135,572	251,104	54,663	102,458	157,121
1971	26,764	34,051	60,815	12,086	14,386	84,090	110,562	37,649	71,704	109,353
1972	19,643	18,905	38,548	12,291	11,723	63,612	87,626	24,098	45,422	69,520
1973	56,510	30,874	87,384	10,494	10,525	39,380	60,399	27,479	51,710	79,189
1974	165,830	65,832	231,662	15,721	17,774	73,122	106,617	30,087	56,332	86,419
1975	91,825	89,233	181,058	16,730	15,572	41,395	73,697	25,396	50,761	76,157
1976	57,767	83,648	141,415	34,004	32,852	109,615	176,471	54,577	109,506	164,083
1977	64,254	80,045	144,299	46,231	43,246	133,380	222,857	130,052	243,101	373,153
1978	66,855	79,508	146,363	61,469	56,729	153,593	271,791	36,942	70,420	107,362
1979	194,353	279,343	473,696	45,492	42,504	110,696	198,692	52,626	99,698	152,324
1980	279,912	342,024	621,936	134,838	124,183	305,143	564,164	195,984	363,404	559,388
1981	186,311	349,806	536,117	-34,501	-30,868	-67,199	-132,568	-79,397	-144,254	-223,651
1982	497,401	790,992	1,288,393	17,912	16,907	45,889	80,708	-26,385	-47,866	-74,251
1983	1,217,450	1,361,139	2,578,589	129,813	121,045	312,995	563,853	22,241	42,211	64,452
1984	2,442,623	2,644,773	5,087,396	117,569	108,249	269,223	495,041	-16,625	-29,009	-45,634
1985	6,995,304	6,236,061	13,231,365	18,769	17,645	47,988	84,402	17,534	34,423	51,957
1986	9,452,267	15,115,433	24,567,700	37,120	34,967	97,804	169,891	124,924	230,513	355,437
1987	11,997,083	21,868,721	33,865,804	196,067	183,173	476,769	856,009	144,979	267,514	412,493
1988	755,626	1,296,274	2,051,900	212,483	196,895	499,113	908,491	92,478	170,655	263,133
1989	32,328	52,672	85,000	94,253	86,176	205,352	385,781	89,940	165,969	255,909
1990	0	0	0	70,629	64,576	153,882	289,087	76,458	141,096	217,554
1991	0	0	0	14,116	12,906	30,754	57,776	96,990	178,977	275,967
1992	0	0	0	305	279	666	1,250	99,871	184,291	284,162
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0
TOTAL	37,932,300	51,247,279	89,179,579	7,399,073	8,206,397	31,215,901	46,821,371	3,884,457	7,243,071	11,127,528

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.

FACILITIES ALLOCATED TO EACH CONTRACTOR

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA										
	Devil's Den Water District (b	Dudley Ridge Water District	Empire West Side Irrigation District (c	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	Municipal and Industrial (d	Agricultural				
	(11)	(12)	(13)	(14)	(15)	(15A)	(16)	(17)	(18)	(19)	(20)
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	37,487	103,080	-6,793	25,433	260,912	27,195	2,512,449	5,457	6,181	211,220	3,182,621
1981	6,472	25,355	-13,864	4,378	121	6,811	128,284	1,339	2,402	51,852	213,150
1982	17,475	82,541	4,280	11,752	141,745	21,613	1,273,743	4,374	2,584	169,314	1,729,421
1983	16,715	52,954	-35,263	11,314	107,678	13,962	1,064,627	2,802	1,233	108,514	1,344,536
1984	11,717	63,919	3,312	7,856	98,859	16,888	1,107,420	3,384	1,183	131,045	1,445,583
1985	7,118	26,222	1,356	4,810	47,944	6,908	496,224	1,389	1,075	53,732	646,778
1986	62,524	62,073	3,211	42,680	181,733	16,358	2,226,350	3,283	2,958	127,134	2,728,304
1987	77,249	123,682	6,404	52,617	203,669	32,480	2,609,478	6,548	6,927	253,493	3,372,547
1988	40,075	165,975	8,595	27,050	272,473	43,598	3,002,538	8,789	14,141	340,170	3,923,404
1989	37,722	170,521	8,841	25,431	276,423	44,693	3,036,721	9,043	16,604	349,698	3,975,697
1990	28,167	127,324	6,597	18,989	207,124	33,423	2,273,697	6,747	12,417	261,042	2,975,527
1991	5,617	25,388	1,311	3,786	42,234	6,737	461,399	1,341	2,471	51,959	602,243
1992	121	546	28	81	877	143	9,658	29	53	1,121	12,657
1993	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0
TOTAL	2,241,818	4,636,107	131,933	1,534,318	11,082,646	1,374,915	121,903,541	234,047	216,799	9,272,783	152,628,907

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

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1952	3,163	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	33,184	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	386,223	103,929	636,955	32,882	788,408	245,063	1,916,155	513,707
1966	3,968,188	1,501,127	814,083	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	1,080,012	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	3,264,693	868,198	10,915,868	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	2,091,088	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	2,694,274	698,820
1973	355,900	789,769	158,851	82,290	262,003	6,329	238,654	46,292	1,761,777	403,916
1974	453,284	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	183,866	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	85,802	22,804	141,503	6,291	175,157	46,860	421,435	113,305
1980	1,927,274	1,376,961	438,320	117,393	722,876	33,434	893,471	248,404	2,115,528	568,552
1981	-162,984	462,513	-49,279	-6,582	-81,266	-2,646	-109,462	-20,122	-103,504	-32,440
1982	1,900,783	707,732	367,843	107,958	606,641	31,960	746,054	239,649	1,932,140	528,606
1983	2,311,987	398,372	447,259	150,067	737,611	38,849	890,829	291,150	2,731,540	748,522
1984	1,215,589	126,741	205,264	71,891	338,521	20,391	406,274	152,874	1,305,755	357,582
1985	866,114	137,415	133,701	42,251	220,501	13,715	268,495	109,126	733,509	200,694
1986	2,220,125	306,289	495,798	128,207	817,663	47,095	1,020,138	290,177	2,277,324	620,936
1987	531,002	163,474	110,013	28,364	181,428	13,757	226,900	103,105	506,529	137,798
1988	363,646	186,532	50,650	13,168	83,534	6,150	104,844	45,984	234,301	63,863
1989	305,526	196,895	48,307	12,452	79,672	5,180	100,297	38,728	220,255	60,257
1990	227,123	76,337	42,294	10,834	69,752	3,835	87,818	28,704	191,608	52,492
1991	46,993	14,132	8,711	2,249	14,370	790	18,051	5,923	39,800	10,869
1992	1,151	285	313	98	518	22	612	169	1,738	444
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0
TOTAL	47,374,288	22,641,690	12,541,141	3,778,987	20,683,016	883,547	24,791,504	6,386,297	77,226,437	20,017,616

FACILITIES ALLOCATED TO EACH CONTRACTOR

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California(e	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC & WCD	Total	South Bay	
	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
1952	963	69,159	373	86,777	0	0	0	0	75	99,353
1953	3,014	218,082	1,191	273,556	0	0	0	0	336	311,812
1954	3,907	280,542	1,499	351,956	0	0	0	0	984	402,143
1955	1,475	111,865	672	140,113	0	0	0	0	1,218	169,342
1956	2,128	179,874	1,303	224,828	0	0	0	0	11,563	351,551
1957	6,540	517,533	3,381	647,713	0	0	0	0	29,099	1,464,452
1958	11,720	948,401	6,420	1,186,074	0	0	2	2	36,650	2,286,623
1959	15,842	1,368,069	9,934	1,698,725	0	0	14	14	58,691	2,967,412
1960	23,334	1,919,115	12,849	2,373,554	0	0	28	28	124,175	4,660,833
1961	36,199	3,218,434	18,835	3,921,818	0	0	10	10	321,147	8,545,244
1962	40,053	3,551,496	29,158	4,444,535	0	0	32	32	266,772	8,875,171
1963	99,364	11,203,614	87,001	13,589,616	0	0	51	51	731,871	24,610,278
1964	170,271	18,105,750	165,131	22,395,138	0	0	7,791	7,791	1,093,757	41,736,060
1965	316,598	33,844,561	308,320	41,674,047	0	0	3,139	3,139	470,582	62,664,743
1966	655,265	74,677,454	683,955	91,128,252	0	0	-48	-48	814,100	129,110,330
1967	960,354	131,149,092	1,285,557	154,685,021	0	0	47	47	1,511,272	194,146,365
1968	1,317,528	148,176,589	1,368,586	177,510,797	0	0	51,573	51,573	1,268,920	197,978,911
1969	1,729,871	140,617,639	1,090,679	174,666,459	0	0	234,232	234,232	433,304	184,473,490
1970	2,162,695	162,541,445	1,153,880	201,651,996	0	0	16,227	16,227	78,375	207,082,650
1971	1,238,982	134,243,113	742,669	156,365,113	0	0	27,204	27,204	16,297	158,624,739
1972	435,035	43,873,624	65,840	50,854,587	0	0	9	9	14,222	51,933,874
1973	256,915	39,825,526	291,175	44,479,397	0	0	25	25	9,710	45,263,853
1974	264,599	18,919,535	86,528	23,352,215	0	0	45	45	35,197	24,402,166
1975	253,968	16,772,093	84,435	20,500,842	0	0	21	21	8,459	21,318,838
1976	158,951	13,585,680	85,113	16,193,000	0	0	51	51	18,294	17,492,908
1977	96,611	11,862,558	112,068	13,738,909	0	0	28	28	23,044	15,573,643
1978	51,331	14,014,813	158,363	15,453,687	0	0	38	38	25,513	16,337,830
1979	69,859	27,978,690	346,871	30,512,508	0	0	23	23	26,804	31,957,508
1980	350,413	60,738,692	653,183	70,184,501	0	0	26	26	57,222	75,169,858
1981	-19,550	15,672,393	221,423	15,768,494	0	0	34	34	-4,944	16,156,632
1982	324,985	35,245,482	339,000	43,078,833	0	0	11	11	20,610	46,123,725
1983	460,255	28,445,009	189,038	37,840,488	0	0	19	19	69,678	42,461,615
1984	219,839	12,539,244	55,388	17,015,353	0	0	25	25	71,497	24,069,261
1985	123,285	11,014,381	64,897	13,928,084	0	0	0	0	15,690	27,958,276
1986	381,852	27,469,342	148,360	36,223,306	0	0	0	0	17,866	64,062,504
1987	84,692	10,605,057	71,964	12,764,083	0	0	0	0	77,268	51,348,204
1988	39,190	8,511,693	89,508	9,793,063	0	0	0	0	79,000	17,018,991
1989	36,938	8,407,488	94,890	9,606,885	0	0	0	0	33,812	14,343,084
1990	32,186	3,699,454	36,791	4,559,228	0	0	0	0	25,337	8,066,733
1991	6,669	706,866	6,810	882,233	0	0	0	0	5,064	1,823,283
1992	275	18,330	137	24,092	0	0	0	0	110	322,271
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0
TOTAL	12,424,401	1,276,847,777	10,173,175	1,535,769,876	0	0	340,657	340,657	7,898,641	1,843,766,559

e) Costs from Table B-10 allocated to MWDSC are reduced herein by $16,428,417 in 1972 under provisions of Amendment No. 7 to its water supply contract.

TABLE B-15: CAPITAL COST COMPONENT OF

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1963	0	0	0	107,118	104,595	373,529	585,242	0	0	0
1964	0	0	0	126,693	160,513	541,810	829,016	9,089	17,998	27,087
1965	0	0	0	159,991	225,051	918,011	1,303,053	14,973	29,020	43,993
1966	18,445	0	18,445	176,848	249,337	1,095,144	1,521,329	24,444	46,705	71,149
1967	42,393	0	42,393	204,543	278,503	1,211,619	1,694,665	43,108	81,311	124,419
1968	123,814	0	123,814	241,782	318,558	1,336,222	1,896,562	57,692	108,402	166,094
1969	168,408	0	168,408	276,193	353,904	1,439,868	2,069,965	61,529	115,612	177,141
1970	172,267	0	172,267	288,795	367,297	1,479,552	2,135,644	63,581	119,485	183,066
1971	174,516	0	174,516	291,536	370,246	1,486,585	2,148,367	64,942	122,080	187,022
1972	175,905	0	175,905	337,469	370,993	1,490,947	2,199,409	65,994	124,138	190,132
1973	176,924	32,157	209,081	338,106	371,601	1,494,247	2,203,954	66,525	125,167	191,692
1974	179,855	33,759	213,614	338,651	372,147	1,496,290	2,207,088	66,951	126,005	192,956
1975	188,458	37,174	225,632	339,466	373,069	1,500,084	2,212,619	67,466	126,998	194,464
1976	193,222	41,803	235,025	340,334	373,877	1,502,231	2,216,442	177,584	330,356	507,940
1977	196,218	46,143	242,361	342,098	375,581	1,507,918	2,225,597	180,415	336,037	516,452
1978	199,552	50,295	249,847	344,497	377,824	1,514,837	2,237,158	187,162	348,648	535,810
1979	203,020	54,420	257,440	347,685	380,767	1,522,805	2,251,257	189,079	352,301	541,380
1980	213,102	68,911	282,013	350,045	382,972	1,528,547	2,261,564	191,809	357,473	549,282
1981	227,623	86,654	314,277	357,040	389,414	1,544,377	2,290,831	201,976	376,326	578,302
1982	237,289	104,801	342,090	355,251	387,813	1,540,891	2,283,955	197,857	368,842	566,699
1983	263,092	145,836	408,928	356,180	388,690	1,543,272	2,288,142	196,488	366,359	562,847
1984	326,250	216,447	542,697	362,914	394,970	1,559,509	2,317,393	197,642	368,549	566,191
1985	452,966	353,650	806,616	369,013	400,585	1,573,476	2,343,074	196,779	367,044	563,823
1986	815,861	677,158	1,493,019	369,987	401,501	1,575,965	2,347,453	197,689	368,830	566,519
1987	1,308,786	1,465,411	2,774,197	371,923	403,324	1,581,065	2,356,312	204,204	380,851	585,055
1988	1,937,873	2,612,133	4,550,006	382,204	412,929	1,606,066	2,401,199	211,806	394,878	606,684
1989	1,977,725	2,680,500	4,658,225	393,410	423,314	1,632,390	2,449,114	216,683	403,879	620,562
1990	1,979,441	2,683,295	4,662,736	398,412	427,887	1,643,286	2,469,585	221,456	412,686	634,142
1991	1,979,441	2,683,295	4,662,736	402,184	431,335	1,651,505	2,485,024	225,539	420,221	645,760
1992	1,979,441	2,683,295	4,662,736	402,943	432,029	1,653,158	2,488,130	230,754	429,845	660,599
1993	1,979,441	2,683,295	4,662,736	402,960	432,044	1,653,195	2,488,199	236,163	439,826	675,989
1994	1,979,441	2,683,295	4,662,736	402,960	432,044	1,653,195	2,488,199	236,163	439,826	675,989
1995	1,979,441	2,683,295	4,662,736	402,960	432,044	1,653,195	2,488,199	236,163	439,826	675,989
1996	1,979,441	2,683,295	4,662,736	402,960	432,044	1,653,195	2,488,199	236,163	439,826	675,989
1997	1,979,441	2,683,295	4,662,736	402,960	432,044	1,653,195	2,488,199	236,163	439,826	675,989
1998	1,979,441	2,683,295	4,662,736	402,960	432,044	1,653,195	2,488,199	236,163	439,826	675,989
1999	1,979,441	2,683,295	4,662,736	402,960	432,044	1,653,195	2,488,199	236,163	439,826	675,989
2000	1,979,441	2,683,295	4,662,736	402,960	432,044	1,653,195	2,488,199	236,163	439,826	675,989
2001	1,979,441	2,683,295	4,662,736	402,960	432,044	1,653,195	2,488,199	236,163	439,826	675,989
2002	1,979,441	2,683,295	4,662,736	402,960	432,044	1,653,195	2,488,199	236,163	439,826	675,989
2003	1,979,441	2,683,295	4,662,736	402,960	432,044	1,653,195	2,488,199	236,163	439,826	675,989
2004	1,979,441	2,683,295	4,662,736	402,960	432,044	1,653,195	2,488,199	236,163	439,826	675,989
2005	1,979,441	2,683,295	4,662,736	402,960	432,044	1,653,195	2,488,199	236,163	439,826	675,989
2006	1,979,441	2,683,295	4,662,736	402,960	432,044	1,653,195	2,488,199	236,163	439,826	675,989
2007	1,979,441	2,683,295	4,662,736	402,960	432,044	1,653,195	2,488,199	236,163	439,826	675,989
2008	1,979,441	2,683,295	4,662,736	402,960	432,044	1,653,195	2,488,199	236,163	439,826	675,989
2009	1,979,441	2,683,295	4,662,736	402,960	432,044	1,653,195	2,488,199	236,163	439,826	675,989
2010	1,979,441	2,683,295	4,662,736	402,960	432,044	1,653,195	2,488,199	236,163	439,826	675,989
2011	1,979,441	2,683,295	4,662,736	402,960	432,044	1,653,195	2,488,199	236,163	439,826	675,989
2012	1,979,441	2,683,295	4,662,736	402,960	432,044	1,653,195	2,488,199	236,163	439,826	675,989
2013	1,979,441	2,683,295	4,662,736	289,978	327,449	1,279,666	1,897,093	236,163	439,826	675,989
2014	1,979,441	2,683,295	4,662,736	254,105	271,531	1,111,385	1,637,021	227,074	421,828	648,902
2015	1,979,441	2,683,295	4,662,736	215,510	206,993	735,183	1,157,686	221,191	410,805	631,996
2016	1,960,995	2,683,295	4,644,290	196,110	182,708	558,051	936,869	211,719	393,121	604,840
2017	1,937,048	2,683,295	4,620,343	164,455	153,541	441,575	759,571	193,055	358,514	551,569
2018	1,855,627	2,683,295	4,538,922	122,163	113,486	316,973	552,622	178,471	331,423	509,894
2019	1,811,033	2,683,295	4,494,328	83,320	78,140	213,326	374,786	174,634	324,214	498,848
2020	1,807,174	2,683,295	4,490,469	69,178	64,748	173,643	307,569	172,582	320,340	492,922
2021	1,804,925	2,683,295	4,488,220	66,118	61,798	166,609	294,525	171,221	317,746	488,967
2022	1,803,536	2,683,295	4,486,831	65,491	61,052	162,247	288,790	170,169	315,688	485,857
2023	1,802,517	2,651,138	4,453,655	64,853	60,444	158,947	284,244	169,638	314,659	484,297
2024	1,799,585	2,649,536	4,449,121	64,309	59,898	156,904	281,111	169,212	313,821	483,033
2025	1,790,983	2,646,121	4,437,104	63,493	58,976	153,111	275,580	168,697	312,828	481,525
2026	1,786,219	2,641,492	4,427,711	62,625	58,168	150,963	271,756	58,579	109,470	168,049
2027	1,783,222	2,637,152	4,420,374	60,861	56,464	145,277	262,602	55,748	103,789	159,537
2028	1,779,889	2,633,000	4,412,889	58,463	54,220	138,358	251,041	49,001	91,177	140,178
2029	1,776,421	2,628,875	4,405,296	55,274	51,277	130,390	236,941	47,085	87,524	134,609
2030	1,766,338	2,614,384	4,380,722	52,914	49,072	124,647	226,633	44,355	82,352	126,707
2031	1,751,817	2,596,640	4,348,457	45,919	42,630	108,817	197,366	34,187	63,500	97,687
2032	1,742,152	2,578,494	4,320,646	47,709	44,231	112,303	204,243	38,306	70,983	109,289
2033	1,716,348	2,537,459	4,253,807	46,780	43,354	109,923	200,057	39,675	73,467	113,142
2034	1,653,191	2,466,847	4,120,038	40,045	37,075	93,685	170,805	38,521	71,277	109,798
2035	1,526,475	2,329,645	3,856,120	33,946	31,459	79,719	145,124	39,384	72,782	112,166
TOTAL	97,094,525	130,866,770	227,961,295	19,756,130	21,510,220	82,430,808	123,697,158	11,663,143	21,723,700	33,386,843

a) Unadjusted for prior overpayments or underpayments of charges.
b) Determined at the current Project Interest Rate of 4.727 percent per annum.

TRANSPORTATION CHARGE FOR EACH CONTRACTOR[a] [b]

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA										
					Kern County Water Agency						
	Devil's Den Water District (a)	Dudley Ridge Water District	Empire West Side Irrigation District (b)	Future Contractor San Joaquin Valley	Municipal and Industrial	Municipal and Industrial[c]	Agricultural	County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
	(11)	(12)	(13)	(14)	(15)	(15A)	(16)	(17)	(18)	(19)	(20)
1963	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	2,779	0	0	0	0	0	0	2,779
1965	0	0	0	6,145	65,610	9,470	0	0	0	0	81,225
1966	0	0	0	12,267	122,673	17,406	0	0	0	0	152,346
1967	0	0	0	26,750	237,871	35,014	0	0	0	0	299,635
1968	34,085	72,648	2,594	49,864	342,415	49,914	408,280	8,678	4,463	61,974	1,034,915
1969	46,061	72,775	7,783	58,490	399,856	53,553	838,464	9,195	4,851	234,490	1,725,518
1970	52,509	79,760	7,783	60,330	431,945	54,966	1,019,824	9,449	5,046	173,527	1,895,139
1971	61,721	90,937	7,783	61,455	453,533	55,771	1,354,509	9,594	5,434	184,657	2,285,394
1972	70,933	101,605	7,783	62,083	463,454	56,141	2,028,259	9,662	10,413	569,655	3,379,988
1973	80,146	111,766	7,783	62,516	467,769	56,318	2,339,288	9,693	6,016	220,334	3,361,629
1974	89,358	169,630	7,783	63,045	469,849	56,420	2,619,652	9,711	6,736	365,718	3,857,902
1975	98,570	206,030	7,783	63,618	472,213	56,564	3,137,625	9,736	6,940	436,388	4,495,467
1976	107,782	157,087	7,783	63,890	474,108	56,756	3,382,330	9,772	7,838	312,182	4,579,528
1977	116,994	154,440	7,783	64,545	476,867	57,048	3,706,063	9,816	7,180	298,487	4,899,223
1978	116,994	165,109	7,783	67,023	478,752	57,241	4,119,600	9,839	7,568	320,241	5,350,150
1979	116,994	195,814	7,783	67,207	480,192	57,415	4,523,499	9,867	7,762	360,416	5,826,949
1980	116,994	208,291	7,783	67,461	482,568	57,682	4,936,160	9,921	11,061	362,738	6,260,659
1981	116,994	208,291	7,783	68,781	496,103	59,093	5,402,266	10,204	8,344	384,492	6,762,351
1982	116,994	208,291	7,783	69,008	496,109	59,447	5,832,449	10,273	8,733	405,740	7,214,827
1983	116,994	217,944	7,783	69,617	503,463	60,568	6,322,210	10,500	8,927	48,304	7,366,310
1984	116,994	229,120	7,783	70,204	509,049	61,292	6,632,363	10,646	9,315	316,756	7,963,522
1985	116,994	239,789	7,783	70,612	514,177	62,168	7,062,547	10,821	9,509	230,437	8,324,837
1986	116,994	250,457	7,783	70,861	516,664	62,527	7,489,226	10,893	9,897	491,745	9,027,047
1987	116,994	261,126	7,783	73,087	526,142	63,380	7,923,790	11,064	10,091	512,993	9,506,450
1988	116,994	271,794	7,783	75,846	536,821	65,083	8,329,442	11,408	10,479	534,242	9,959,892
1989	116,994	282,463	7,783	77,273	551,192	67,382	8,622,072	11,871	10,867	555,996	10,303,893
1990	116,994	293,132	7,783	78,622	565,860	69,754	8,926,092	12,351	11,061	599,504	10,681,153
1991	116,994	293,132	7,783	79,637	576,922	71,539	8,926,092	12,711	11,061	599,504	10,695,375
1992	116,994	293,132	7,783	79,840	579,193	71,901	8,926,092	12,784	11,061	599,504	10,698,284
1993	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
1994	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
1995	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
1996	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
1997	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
1998	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
1999	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
2000	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
2001	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
2002	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
2003	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
2004	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
2005	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
2006	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
2007	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
2008	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
2009	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
2010	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
2011	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
2012	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
2013	116,994	293,132	7,783	79,844	579,240	71,909	8,926,092	12,785	11,061	599,504	10,698,344
2014	116,994	293,132	7,783	77,066	579,240	71,909	8,926,092	12,785	11,061	599,504	10,695,566
2015	116,994	293,132	7,783	73,699	513,631	62,439	8,926,092	12,785	11,061	599,504	10,617,120
2016	116,994	293,132	7,783	67,578	456,567	54,502	8,926,092	12,785	11,061	599,504	10,545,998
2017	116,994	293,132	7,783	53,095	341,369	36,894	8,926,092	12,785	11,061	599,504	10,398,709
2018	116,994	293,132	7,783	29,980	236,825	21,994	8,926,092	4,107	11,061	599,504	10,247,472
2019	116,994	293,132	7,783	21,354	179,384	18,355	8,926,092	3,590	11,061	599,504	10,177,249
2020	116,994	293,132	7,783	19,514	147,296	16,943	8,926,092	3,336	11,061	599,504	10,141,655
2021	116,994	293,132	7,783	18,389	125,708	16,137	8,926,092	3,192	11,061	599,504	10,117,992
2022	116,994	293,132	7,783	17,762	115,787	15,768	8,926,092	3,123	11,061	599,504	10,107,006
2023	116,994	293,132	7,783	17,328	111,472	15,591	8,926,092	3,092	11,061	599,504	10,102,049
2024	116,994	293,132	7,783	16,799	109,391	15,489	8,926,092	3,074	11,061	599,504	10,099,319
2025	116,994	293,132	7,783	16,226	107,028	15,345	8,926,092	3,049	11,061	599,504	10,096,214
2026	116,994	293,132	7,783	15,954	105,132	15,153	8,926,092	3,014	11,061	599,504	10,093,819
2027	116,994	293,132	7,783	15,300	102,373	14,861	8,926,092	2,969	11,061	599,504	10,090,069
2028	116,994	293,132	7,783	12,821	100,489	14,668	8,926,092	2,946	11,061	599,504	10,085,490
2029	116,994	293,132	7,783	12,638	99,048	14,494	8,926,092	2,918	11,061	599,504	10,083,664
2030	116,994	293,132	7,783	12,383	96,673	14,226	8,926,092	2,864	11,061	599,504	10,080,712
2031	116,994	293,132	7,783	11,064	83,137	12,816	8,926,092	2,581	11,061	599,504	10,064,164
2032	116,994	293,132	7,783	10,837	83,131	12,462	8,926,092	2,512	11,061	599,504	10,063,508
2033	116,994	293,132	7,783	10,227	75,778	11,341	8,926,092	2,285	11,061	599,504	10,054,197
2034	116,994	293,132	7,783	9,640	70,192	10,617	8,926,092	2,140	11,061	599,504	10,047,155
2035	116,994	293,132	7,783	9,233	65,063	9,741	8,926,092	1,964	11,061	599,504	10,040,567
TOTAL	7,543,811	17,439,239	524,055	3,968,467	28,760,124	3,563,647	508,630,150	632,840	686,276	34,958,696	606,707,305

c) Charges under Amendment No. 18 of the water supply contract with Kern County Water Agency.

TABLE B-15: CAPITAL COST COMPONENT OF

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1963	34,103	0	0	0	0	0	0	0	52,892	0
1964	64,236	20,562	14,748	4,467	37,994	1,169	29,073	8,390	84,582	35,768
1965	121,108	38,997	25,633	7,348	41,627	2,127	51,397	15,549	137,892	36,084
1966	220,291	73,722	45,669	12,739	74,670	3,833	92,298	28,262	237,296	62,734
1967	426,148	151,596	87,901	23,956	144,320	7,436	178,805	55,148	442,208	117,940
1968	685,058	298,069	143,929	39,348	236,721	12,029	292,290	89,129	744,820	198,526
1969	993,424	452,737	214,186	58,494	352,589	17,616	434,713	129,926	1,159,772	308,885
1970	1,296,622	577,738	302,077	86,552	497,541	23,928	604,076	174,966	1,726,054	452,818
1971	1,558,695	712,942	408,643	122,669	673,294	29,463	805,329	213,310	2,442,531	632,380
1972	1,692,943	803,573	464,327	140,258	765,130	31,979	913,808	231,382	2,865,091	735,585
1973	1,743,643	819,791	481,574	145,044	793,574	32,975	948,566	238,377	3,004,861	771,837
1974	1,762,106	860,761	489,815	149,313	807,166	33,304	960,946	240,779	3,096,257	792,791
1975	1,785,621	872,936	503,278	153,162	829,368	33,728	987,878	243,859	3,180,240	814,908
1976	1,798,818	883,082	513,332	155,904	845,949	33,985	1,008,238	245,629	3,259,841	836,081
1977	1,811,180	893,075	520,433	157,837	857,661	34,206	1,022,664	247,242	3,309,793	849,365
1978	1,821,564	905,367	525,180	159,181	865,490	34,402	1,032,203	248,638	3,340,505	857,442
1979	1,831,374	922,772	528,030	160,024	870,190	34,575	1,037,853	249,907	3,357,276	861,735
1980	1,850,942	960,473	532,481	161,207	877,531	34,902	1,046,940	252,338	3,379,139	867,613
1981	1,950,923	1,031,905	555,220	167,297	915,032	36,636	1,093,290	265,224	3,488,886	897,107
1982	1,942,468	1,055,899	552,664	166,955	910,816	36,499	1,087,612	264,181	3,483,517	895,424
1983	2,041,075	1,092,614	571,746	172,556	942,287	38,157	1,126,315	276,613	3,583,750	922,847
1984	2,161,014	1,113,280	594,949	180,341	980,552	40,172	1,172,528	291,717	3,725,455	961,678
1985	2,224,075	1,119,855	605,597	184,070	998,113	41,230	1,193,605	299,647	3,793,193	980,228
1986	2,269,007	1,126,984	612,533	186,262	1,009,552	41,941	1,207,533	305,309	3,831,245	990,640
1987	2,384,784	1,142,957	638,389	192,948	1,052,192	44,397	1,260,732	320,441	3,950,005	1,023,021
1988	2,412,628	1,151,529	644,157	194,435	1,061,706	45,119	1,272,630	325,847	3,976,566	1,030,246
1989	2,431,807	1,161,367	646,829	195,130	1,066,111	45,443	1,278,160	328,273	3,988,923	1,033,615
1990	2,448,019	1,171,815	649,392	195,791	1,070,339	45,718	1,283,482	330,328	4,000,611	1,036,812
1991	2,460,149	1,175,892	651,651	196,369	1,074,064	45,923	1,288,172	331,861	4,010,844	1,039,616
1992	2,462,676	1,176,651	652,119	196,490	1,074,837	45,965	1,289,143	332,179	4,012,984	1,040,200
1993	2,462,738	1,176,667	652,136	196,495	1,074,865	45,967	1,289,176	332,188	4,013,078	1,040,224
1994	2,462,738	1,176,667	652,136	196,495	1,074,865	45,967	1,289,176	332,188	4,013,078	1,040,224
1995	2,462,738	1,176,667	652,136	196,495	1,074,865	45,967	1,289,176	332,188	4,013,078	1,040,224
1996	2,462,738	1,176,667	652,136	196,495	1,074,865	45,967	1,289,176	332,188	4,013,078	1,040,224
1997	2,462,738	1,176,667	652,136	196,495	1,074,865	45,967	1,289,176	332,188	4,013,078	1,040,224
1998	2,462,738	1,176,667	652,136	196,495	1,074,865	45,967	1,289,176	332,188	4,013,078	1,040,224
1999	2,462,738	1,176,667	652,136	196,495	1,074,865	45,967	1,289,176	332,188	4,013,078	1,040,224
2000	2,462,738	1,176,667	652,136	196,495	1,074,865	45,967	1,289,176	332,188	4,013,078	1,040,224
2001	2,462,738	1,176,667	652,136	196,495	1,074,865	45,967	1,289,176	332,188	4,013,078	1,040,224
2002	2,462,738	1,176,667	652,136	196,495	1,074,865	45,967	1,289,176	332,188	4,013,078	1,040,224
2003	2,462,738	1,176,667	652,136	196,495	1,074,865	45,967	1,289,176	332,188	4,013,078	1,040,224
2004	2,462,738	1,176,667	652,136	196,495	1,074,865	45,967	1,289,176	332,188	4,013,078	1,040,224
2005	2,462,738	1,176,667	652,136	196,495	1,074,865	45,967	1,289,176	332,188	4,013,078	1,040,224
2006	2,462,738	1,176,667	652,136	196,495	1,074,865	45,967	1,289,176	332,188	4,013,078	1,040,224
2007	2,462,738	1,176,667	652,136	196,495	1,074,865	45,967	1,289,176	332,188	4,013,078	1,040,224
2008	2,462,738	1,176,667	652,136	196,495	1,074,865	45,967	1,289,176	332,188	4,013,078	1,040,224
2009	2,462,738	1,176,667	652,136	196,495	1,074,865	45,967	1,289,176	332,188	4,013,078	1,040,224
2010	2,462,738	1,176,667	652,136	196,495	1,074,865	45,967	1,289,176	332,188	4,013,078	1,040,224
2011	2,462,738	1,176,667	652,136	196,495	1,074,865	45,967	1,289,176	332,188	4,013,078	1,040,224
2012	2,462,738	1,176,667	652,136	196,495	1,074,865	45,967	1,289,176	332,188	4,013,078	1,040,224
2013	2,428,636	1,176,667	652,136	196,495	1,061,193	45,967	1,289,176	332,188	3,960,186	1,026,827
2014	2,398,502	1,156,105	637,388	192,029	1,051,189	44,798	1,260,103	323,799	3,928,496	1,018,486
2015	2,341,630	1,137,670	626,503	189,148	1,033,238	43,839	1,237,779	316,639	3,875,186	1,004,140
2016	2,242,448	1,102,945	606,467	183,756	1,000,195	42,133	1,196,878	303,926	3,775,782	977,490
2017	2,036,590	1,025,071	564,235	172,540	930,546	38,530	1,110,371	277,041	3,570,870	922,284
2018	1,777,681	878,598	508,207	157,147	838,145	33,937	996,886	243,059	3,268,259	841,698
2019	1,469,314	723,930	437,950	138,002	722,276	28,351	854,463	202,262	2,853,306	731,339
2020	1,166,116	598,929	350,059	109,944	577,324	22,039	685,100	157,223	2,287,024	587,406
2021	904,044	463,725	243,493	73,827	401,571	16,504	483,847	118,878	1,570,547	407,844
2022	769,795	373,094	187,809	56,238	309,735	13,987	375,368	100,807	1,147,988	304,639
2023	719,095	356,876	170,562	51,452	281,291	12,991	340,610	93,811	1,008,217	268,387
2024	700,632	315,906	162,321	47,183	267,699	12,663	328,230	91,410	916,821	247,433
2025	677,117	303,731	148,858	43,334	245,497	12,239	301,298	88,329	832,839	225,316
2026	663,921	293,585	138,804	40,591	228,916	11,981	280,938	86,560	753,237	204,144
2027	651,558	283,592	131,703	38,658	217,205	11,760	266,511	84,946	703,285	190,859
2028	641,175	271,299	126,956	37,315	209,375	11,565	256,973	83,550	672,574	182,783
2029	631,365	253,894	124,106	36,472	204,675	11,391	251,323	82,281	655,802	178,489
2030	611,796	216,194	119,655	35,289	197,334	11,065	242,236	79,850	633,939	172,612
2031	511,815	144,762	96,916	29,199	159,833	9,330	195,886	66,964	524,192	143,117
2032	520,270	120,768	99,472	29,540	164,049	9,468	201,564	68,008	529,562	144,800
2033	421,663	84,053	80,390	23,940	132,579	7,810	162,861	55,576	429,328	117,377
2034	301,724	63,387	57,187	16,155	94,313	5,794	116,648	40,472	287,624	78,546
2035	238,663	56,812	46,539	12,425	76,752	4,737	95,571	32,541	219,885	59,996
TOTAL	122,766,811	58,703,874	32,536,918	9,806,726	53,628,646	2,291,076	64,314,419	16,558,331	200,333,538	51,924,418

TRANSPORTATION CHARGE FOR EACH CONTRACTOR[a] [b]

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC & WCD	Total	South Bay	
	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
1963	0	707,040	0	794,035	0	0	0	0	47,190	1,426,467
1964	22,220	1,288,250	9,598	1,621,057	0	0	0	0	85,158	2,565,097
1965	22,324	2,227,522	18,164	2,745,772	0	0	412	412	141,899	4,316,354
1966	38,748	3,983,276	34,159	4,907,697	0	0	575	575	166,311	6,837,852
1967	72,741	7,857,318	69,640	9,635,157	0	0	573	573	208,544	12,005,386
1968	122,561	14,660,938	136,331	17,659,749	0	0	575	575	286,944	21,168,653
1969	190,911	22,347,894	207,329	26,868,476	0	0	3,250	3,250	352,772	31,365,530
1970	280,651	29,642,714	263,910	35,929,647	0	0	15,402	15,402	375,250	40,706,415
1971	392,845	38,074,876	323,770	46,390,747	0	0	16,243	16,243	379,316	51,581,605
1972	457,120	45,039,005	362,298	54,502,499	0	0	17,655	17,655	380,162	60,845,750
1973	479,688	47,315,036	365,713	57,140,679	0	0	17,655	17,655	380,900	63,505,590
1974	493,016	49,381,065	380,819	59,448,138	0	0	17,656	17,656	381,403	66,318,757
1975	506,743	50,362,554	385,307	60,659,582	0	0	17,659	17,659	383,229	68,188,652
1976	519,918	51,232,639	389,688	61,723,104	0	0	17,660	17,660	383,668	69,663,367
1977	528,164	51,937,424	394,103	62,563,147	0	0	17,663	17,663	384,617	70,849,060
1978	533,176	52,552,817	399,917	63,275,882	0	0	17,664	17,664	385,813	72,052,324
1979	535,838	53,279,864	408,132	64,077,570	0	0	17,666	17,666	387,136	73,359,398
1980	539,463	54,731,314	426,127	65,660,470	0	0	17,667	17,667	388,527	75,420,182
1981	557,641	57,882,255	460,012	69,301,428	0	0	17,669	17,669	391,495	79,656,353
1982	556,627	58,695,291	471,499	70,119,452	0	0	17,670	17,670	391,239	80,935,932
1983	573,486	60,523,721	489,085	72,354,252	0	0	17,671	17,671	392,308	83,390,458
1984	597,363	61,999,362	498,892	74,317,303	0	0	17,672	17,672	395,922	86,120,700
1985	608,767	62,649,861	501,765	75,200,006	0	0	17,673	17,673	399,632	87,655,661
1986	615,163	63,221,254	505,132	75,922,555	0	0	17,673	17,673	400,445	89,774,711
1987	635,076	64,653,748	512,869	77,811,559	0	0	17,673	17,673	401,377	93,452,623
1988	639,517	65,209,842	516,642	78,480,864	0	0	17,673	17,673	405,429	96,421,747
1989	641,584	65,658,760	521,363	78,997,365	0	0	17,673	17,673	409,595	97,456,427
1990	643,544	66,104,899	526,398	79,507,148	0	0	17,673	17,673	411,390	98,383,827
1991	645,263	66,302,476	528,363	79,750,643	0	0	17,673	17,673	412,743	98,669,954
1992	645,622	66,340,484	528,729	79,798,079	0	0	17,673	17,673	413,015	98,738,516
1993	645,636	66,341,477	528,737	79,799,384	0	0	17,673	17,673	413,021	98,755,346
1994	645,636	66,341,477	528,737	79,799,384	0	0	17,673	17,673	413,021	98,755,346
1995	645,636	66,341,477	528,737	79,799,384	0	0	17,673	17,673	413,021	98,755,346
1996	645,636	66,341,477	528,737	79,799,384	0	0	17,673	17,673	413,021	98,755,346
1997	645,636	66,341,477	528,737	79,799,384	0	0	17,673	17,673	413,021	98,755,346
1998	645,636	66,341,477	528,737	79,799,384	0	0	17,673	17,673	413,021	98,755,346
1999	645,636	66,341,477	528,737	79,799,384	0	0	17,673	17,673	413,021	98,755,346
2000	645,636	66,341,477	528,737	79,799,384	0	0	17,673	17,673	413,021	98,755,346
2001	645,636	66,341,477	528,737	79,799,384	0	0	17,673	17,673	413,021	98,755,346
2002	645,636	66,341,477	528,737	79,799,384	0	0	17,673	17,673	413,021	98,755,346
2003	645,636	66,341,477	528,737	79,799,384	0	0	17,673	17,673	413,021	98,755,346
2004	645,636	66,341,477	528,737	79,799,384	0	0	17,673	17,673	413,021	98,755,346
2005	645,636	66,341,477	528,737	79,799,384	0	0	17,673	17,673	413,021	98,755,346
2006	645,636	66,341,477	528,737	79,799,384	0	0	17,673	17,673	413,021	98,755,346
2007	645,636	66,341,477	528,737	79,799,384	0	0	17,673	17,673	413,021	98,755,346
2008	645,636	66,341,477	528,737	79,799,384	0	0	17,673	17,673	413,021	98,755,346
2009	645,636	66,341,477	528,737	79,799,384	0	0	17,673	17,673	413,021	98,755,346
2010	645,636	66,341,477	528,737	79,799,384	0	0	17,673	17,673	413,021	98,755,346
2011	645,636	66,341,477	528,737	79,799,384	0	0	17,673	17,673	413,021	98,755,346
2012	645,636	66,341,477	528,737	79,799,384	0	0	17,673	17,673	413,021	98,755,346
2013	637,301	65,634,436	528,737	78,969,945	0	0	17,673	17,673	365,831	97,287,611
2014	632,146	65,053,227	519,139	78,215,407	0	0	17,673	17,673	327,863	96,205,168
2015	623,313	64,113,955	510,573	77,053,613	0	0	17,261	17,261	271,123	94,411,535
2016	606,889	62,358,201	494,578	74,891,688	0	0	17,098	17,098	246,710	91,887,493
2017	572,896	58,484,159	459,096	70,164,229	0	0	17,101	17,101	204,477	86,715,999
2018	523,075	51,680,539	392,406	62,139,637	0	0	17,098	17,098	126,077	78,131,722
2019	454,726	43,993,583	321,407	52,930,909	0	0	14,423	14,423	60,249	68,550,792
2020	364,985	36,698,762	264,826	43,869,737	0	0	2,271	2,271	37,771	59,342,394
2021	252,791	28,266,601	204,966	33,408,638	0	0	1,430	1,430	33,705	48,833,477
2022	188,517	21,302,472	166,439	25,296,888	0	0	18	18	32,859	40,698,249
2023	165,948	19,026,440	163,023	22,658,703	0	0	18	18	32,121	38,015,087
2024	152,620	16,960,412	147,918	20,351,248	0	0	17	17	31,618	35,695,467
2025	138,894	15,978,923	143,429	19,139,804	0	0	14	14	29,792	34,460,033
2026	125,719	15,108,838	139,049	18,076,283	0	0	13	13	29,353	33,066,984
2027	117,473	14,404,053	134,634	17,236,237	0	0	11	11	28,404	32,197,234
2028	112,461	13,788,660	128,820	16,523,506	0	0	9	9	27,209	31,440,322
2029	109,798	13,061,613	120,605	15,721,814	0	0	7	7	25,885	30,608,216
2030	106,174	11,610,163	102,610	14,138,917	0	0	6	6	24,494	28,978,191
2031	87,996	8,459,222	68,725	10,497,957	0	0	5	5	21,526	25,227,162
2032	89,010	7,646,186	57,238	9,679,935	0	0	3	3	21,782	24,399,406
2033	72,150	5,817,756	39,652	7,445,135	0	0	2	2	20,713	22,087,053
2034	48,274	4,342,114	29,845	5,482,083	0	0	1	1	17,099	19,946,979
2035	36,869	3,691,616	26,972	4,599,378	0	0	0	0	13,390	18,766,745
TOTAL	32,228,525	3,310,174,970	26,375,181	3,981,643,433	0	0	883,653	883,653	20,613,900	4,994,893,587

TABLE B-16A: MINIMUM OMP&R COMPONENT OF

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
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	9,699	8,868	0	18,567	0	0	0
1963	0	0	0	38,048	34,788	82,896	155,732	0	0	0
1964	0	0	0	41,148	38,323	91,320	170,791	0	0	0
1965	0	0	0	78,529	75,616	195,792	349,937	0	0	0
1966	0	0	0	79,753	78,779	218,544	377,076	0	0	0
1967	0	0	0	127,896	123,666	335,224	586,786	0	0	0
1968	130	0	130	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	74,021	136,560	210,581
1972	37,895	0	37,895	122,407	117,483	334,366	574,256	79,223	146,158	225,381
1973	32,993	0	32,993	122,738	116,785	325,727	565,250	75,774	139,796	215,570
1974	46,498	0	46,498	154,434	146,929	403,081	704,444	76,701	141,504	218,205
1975	37,707	0	37,707	189,176	182,087	513,823	885,086	92,840	171,279	264,119
1976	60,786	0	60,786	203,063	193,436	524,814	921,313	95,011	175,285	270,296
1977	78,400	0	78,400	179,911	169,103	500,192	849,206	103,009	190,041	293,050
1978	58,235	0	58,235	245,225	234,269	660,749	1,140,243	106,416	196,321	302,737
1979	73,864	0	73,864	236,997	232,115	666,769	1,135,881	100,977	186,291	287,268
1980	81,791	0	81,791	389,614	372,221	1,010,911	1,772,746	124,034	228,828	352,862
1981	100,717	0	100,717	320,700	305,226	841,982	1,467,908	137,457	253,593	391,050
1982	192,120	0	192,120	387,133	370,074	1,099,699	1,856,906	139,586	257,520	397,106
1983	106,850	0	106,850	431,271	423,559	1,258,751	2,113,581	164,056	302,666	466,722
1984	144,766	0	144,766	564,113	542,034	1,710,217	2,816,364	195,878	361,368	557,246
1985	228,022	0	228,022	646,016	629,587	1,777,213	3,052,816	234,682	432,963	667,645
1986	137,310	0	137,310	789,350	746,761	2,059,414	3,595,525	256,392	473,010	729,402
1987	118,888	0	118,888	819,347	780,078	2,096,984	3,696,409	302,339	557,778	860,117
1988	284,298	496,962	781,260	789,694	757,531	2,046,222	3,593,447	311,775	575,188	886,963
1989	287,732	501,680	789,412	780,832	750,337	2,034,950	3,566,119	296,773	547,511	844,284
1990	287,552	501,109	788,661	781,066	750,574	2,035,676	3,567,316	296,795	547,551	844,346
1991	287,503	501,240	788,743	781,108	750,647	2,036,109	3,567,864	296,777	547,517	844,294
1992	287,663	501,475	789,138	781,469	750,991	2,037,037	3,569,497	296,932	547,806	844,738
1993	287,893	501,780	789,673	781,670	751,180	2,037,492	3,570,342	421,755	781,224	1,202,979
1994	288,279	502,293	790,572	782,023	751,507	2,038,296	3,571,826	423,123	784,369	1,207,492
1995	288,095	502,047	790,142	781,819	751,317	2,037,828	3,570,964	422,471	782,869	1,205,340
1996	288,420	502,480	790,900	782,128	751,607	2,038,535	3,572,270	423,621	785,522	1,209,143
1997	288,295	502,316	790,611	781,992	751,479	2,038,222	3,571,693	423,191	784,529	1,207,720
1998	288,665	502,805	791,470	782,357	751,819	2,039,059	3,573,235	424,499	787,537	1,212,036
1999	288,610	502,732	791,342	782,302	751,767	2,038,930	3,572,999	424,307	787,101	1,211,408
2000	288,836	503,033	791,869	782,529	751,978	2,039,450	3,573,957	425,118	788,971	1,214,089
2001	289,287	503,691	792,978	783,615	753,012	2,042,232	3,578,859	425,967	790,744	1,216,711
2002	290,670	505,522	796,192	785,896	755,116	2,047,337	3,588,349	431,367	802,948	1,234,315
2003	290,812	505,710	796,522	810,345	778,756	2,112,113	3,701,214	431,866	804,096	1,235,962
2004	297,935	515,206	813,141	812,723	780,991	2,117,816	3,711,530	434,982	810,232	1,245,214
2005	297,926	515,195	813,121	812,714	780,982	2,117,797	3,711,493	434,953	810,160	1,245,113
2006	298,022	515,323	813,345	812,810	781,071	2,118,013	3,711,894	440,806	821,182	1,261,988
2007	298,117	515,445	813,562	812,903	781,157	2,118,222	3,712,282	441,132	821,937	1,263,069
2008	298,209	515,570	813,779	812,995	781,241	2,118,436	3,712,672	441,460	822,693	1,264,153
2009	299,470	517,245	816,715	814,248	782,403	2,121,288	3,717,939	445,921	832,960	1,278,881
2010	299,477	517,250	816,727	814,253	782,407	2,121,301	3,717,961	445,938	832,995	1,278,933
2011	299,127	516,703	815,830	813,039	781,244	2,118,115	3,712,398	445,725	832,742	1,278,467
2012	299,183	516,779	815,962	813,096	781,295	2,118,244	3,712,635	445,924	833,202	1,279,126
2013	299,261	516,882	816,143	813,173	781,367	2,118,419	3,712,959	446,189	833,814	1,280,003
2014	299,330	516,974	816,304	813,241	781,430	2,118,573	3,713,244	446,431	834,365	1,280,796
2015	300,601	518,657	819,258	814,498	782,597	2,121,444	3,718,539	450,912	844,684	1,295,596
2016	300,658	518,735	819,393	814,558	782,652	2,121,573	3,718,783	451,116	845,154	1,296,270
2017	300,643	518,714	819,357	814,540	782,635	2,121,537	3,718,712	451,050	845,001	1,296,051
2018	300,633	518,698	819,331	814,529	782,624	2,121,507	3,718,660	451,003	844,896	1,295,899
2019	301,927	520,416	822,343	815,809	783,811	2,124,425	3,724,045	455,560	855,383	1,310,943
2020	301,884	520,358	822,242	814,685	782,783	2,121,974	3,719,442	454,789	853,878	1,308,667
2021	301,826	520,282	822,108	786,093	755,132	2,046,183	3,587,408	454,580	853,399	1,307,979
2022	294,476	510,344	804,820	784,944	754,082	2,043,686	3,582,712	453,141	850,767	1,303,908
2023	294,417	510,262	804,679	784,882	754,025	2,043,541	3,582,448	452,919	850,251	1,303,170
2024	293,653	509,416	803,069	783,260	752,464	2,039,303	3,575,027	442,616	831,146	1,273,762
2025	293,647	509,408	803,055	783,251	752,456	2,039,281	3,574,988	442,588	831,082	1,273,670
2026	294,575	510,640	805,215	784,169	753,307	2,041,374	3,578,850	445,863	838,620	1,284,483
2027	294,520	510,564	805,084	784,112	753,254	2,041,239	3,578,605	445,660	838,148	1,283,808
2028	294,540	510,592	805,132	784,128	753,268	2,041,276	3,578,672	445,720	838,288	1,284,008
2029	294,499	510,537	805,036	784,083	753,227	2,041,171	3,578,481	445,523	837,851	1,283,374
2030	294,494	510,531	805,025	784,073	753,218	2,041,153	3,578,444	445,490	837,776	1,283,266
2031	294,408	510,418	804,826	783,985	753,135	2,040,946	3,578,066	445,168	837,032	1,282,200
2032	294,413	510,424	804,837	783,987	753,138	2,040,954	3,578,079	445,175	837,046	1,282,221
2033	295,198	511,463	806,661	784,765	753,859	2,042,725	3,581,349	447,940	843,420	1,291,360
2034	295,173	511,431	806,604	784,740	753,836	2,042,671	3,581,247	447,854	843,220	1,291,074
2035	295,063	511,287	806,350	784,631	753,736	2,042,424	3,580,791	447,470	842,334	1,289,804
TOTAL	15,888,213	24,498,624	40,386,837	44,839,862	43,063,438	117,397,324	205,300,624	22,975,431	42,857,172	65,832,603

a) Unadjusted for prior overpayments or underpayments of charges. Excludes charges for Off-Aqueduct power facilities, which are shown separately in Table B-16B.

TRANSPORTATION CHARGE FOR EACH CONTRACTOR[a]

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA									
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	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	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	51,792	47,997	2,315	35,370	106,654	1,643,120	2,366	2,288	94,874	1,986,776
1972	55,430	49,867	2,414	37,858	122,312	1,729,058	2,470	2,254	98,776	2,100,439
1973	53,022	50,005	2,386	36,208	125,553	1,719,630	2,439	2,310	98,329	2,089,882
1974	53,679	52,816	2,557	36,652	135,661	1,822,379	2,615	2,529	104,610	2,213,498
1975	64,983	66,962	3,242	44,362	162,739	2,234,297	3,317	3,191	132,663	2,715,756
1976	66,496	66,504	3,327	45,400	159,304	2,215,686	3,404	2,919	133,940	2,696,980
1977	72,109	75,670	3,814	49,222	189,781	2,523,460	3,904	3,716	152,989	3,074,665
1978	74,479	74,641	3,709	50,850	185,732	2,534,139	3,794	3,897	149,775	3,081,016
1979	70,667	68,806	3,430	48,251	173,770	2,377,838	3,508	3,476	138,327	2,888,073
1980	86,839	95,627	4,707	59,269	235,563	3,146,008	4,815	4,760	190,998	3,828,586
1981	96,293	118,144	5,949	65,685	266,199	3,434,906	6,081	5,183	238,674	4,237,114
1982	97,831	133,964	6,703	66,701	312,309	3,854,841	6,854	6,369	269,782	4,755,354
1983	115,046	173,887	8,696	78,395	404,550	4,786,535	8,890	8,155	350,067	5,934,221
1984	137,306	194,215	9,690	93,600	469,960	5,544,636	9,907	9,009	390,557	6,858,880
1985	164,438	214,212	10,674	112,144	520,578	6,266,100	10,913	10,420	430,488	7,739,967
1986	179,626	230,561	11,386	122,516	585,478	7,058,110	11,646	13,113	461,279	8,673,715
1987	211,689	235,515	11,622	144,472	593,847	7,471,939	11,886	13,489	470,999	9,165,458
1988	218,244	228,347	11,292	148,980	571,473	7,310,770	11,549	13,252	457,153	8,971,060
1989	207,792	231,142	11,424	141,813	577,427	7,279,607	11,682	13,375	462,595	8,936,857
1990	207,806	230,841	11,407	141,822	577,014	7,275,603	11,666	13,342	461,972	8,931,473
1991	207,790	230,196	11,374	141,816	575,900	7,265,296	11,630	13,269	460,626	8,917,897
1992	207,900	230,327	11,379	141,890	576,206	7,269,252	11,637	13,275	460,887	8,922,753
1993	220,310	230,592	11,390	150,392	577,209	7,209,462	11,649	13,280	461,382	8,885,666
1994	220,527	230,963	11,407	150,539	578,072	7,219,549	11,667	13,289	462,125	8,898,138
1995	220,424	230,791	11,401	150,471	577,671	7,214,854	11,659	13,286	461,778	8,892,335
1996	220,608	231,103	11,414	150,592	578,398	7,223,363	11,674	13,293	462,402	8,902,847
1997	220,541	230,994	11,409	150,549	578,150	7,220,410	11,667	13,290	462,181	8,899,191
1998	220,746	231,345	11,426	150,689	578,966	7,229,962	11,686	13,300	462,882	8,911,002
1999	220,720	231,298	11,424	150,667	578,862	7,228,720	11,684	13,298	462,787	8,909,460
2000	220,847	231,523	11,436	150,757	579,391	7,234,894	11,696	13,303	463,238	8,917,085
2001	221,197	231,979	11,456	150,993	580,433	7,247,802	11,719	13,321	464,143	8,933,043
2002	222,325	234,928	11,608	151,759	586,120	7,312,977	11,872	13,513	470,125	9,015,227
2003	222,403	235,063	11,615	151,814	586,431	7,316,630	11,876	13,516	470,391	9,019,739
2004	223,935	239,843	11,860	152,851	597,445	7,446,187	12,129	13,761	480,169	9,178,180
2005	223,930	239,836	11,860	152,848	597,425	7,445,968	12,129	13,761	480,151	9,177,908
2006	226,156	240,170	11,869	154,372	600,899	7,491,895	12,137	13,764	480,619	9,231,881
2007	226,208	240,261	11,870	154,409	601,104	7,494,279	12,141	13,766	480,795	9,234,833
2008	226,259	240,347	11,875	154,444	601,305	7,496,668	12,146	13,769	480,970	9,237,783
2009	226,960	241,550	11,935	154,920	604,092	7,529,315	12,205	13,799	483,373	9,278,149
2010	226,963	241,556	11,935	154,922	604,102	7,529,431	12,206	13,800	483,381	9,278,296
2011	226,647	241,231	11,916	154,709	603,837	7,524,462	12,187	13,782	482,688	9,271,459
2012	226,679	241,286	11,920	154,729	603,961	7,525,903	12,189	13,784	482,792	9,273,243
2013	226,718	241,353	11,922	154,757	604,111	7,527,676	12,192	13,787	482,928	9,275,444
2014	226,755	241,417	11,925	154,782	604,256	7,529,411	12,196	13,788	483,056	9,277,586
2015	227,461	242,626	11,984	155,262	607,052	7,562,187	12,256	13,820	485,469	9,318,117
2016	227,492	242,680	11,986	155,284	607,176	7,563,638	12,260	13,820	485,577	9,319,913
2017	227,484	242,659	11,985	155,276	607,128	7,563,074	12,258	13,820	485,538	9,319,222
2018	227,472	242,639	11,985	155,269	607,084	7,562,573	12,257	13,820	485,502	9,318,601
2019	228,184	243,862	12,047	155,756	609,899	7,595,642	12,320	13,851	487,937	9,359,498
2020	227,730	241,878	11,943	155,447	606,665	7,559,479	12,214	13,661	483,872	9,312,889
2021	227,695	241,817	11,942	155,423	606,520	7,557,781	12,212	13,660	483,753	9,310,803
2022	226,638	237,018	11,691	154,711	595,511	7,430,338	11,956	13,406	473,908	9,155,177
2023	226,603	236,953	11,688	154,688	595,354	7,428,519	11,953	13,404	473,774	9,152,936
2024	222,395	235,943	11,656	151,808	588,591	7,338,371	11,918	13,376	472,090	9,046,148
2025	222,389	235,930	11,655	151,801	588,560	7,338,018	11,918	13,376	472,065	9,045,712
2026	222,902	236,806	11,698	152,154	590,591	7,361,850	11,964	13,399	473,819	9,075,183
2027	222,870	236,746	11,695	152,129	590,447	7,360,204	11,959	13,397	473,697	9,073,144
2028	222,877	236,753	11,695	152,134	590,465	7,360,420	11,961	13,397	473,712	9,073,414
2029	222,821	236,571	11,690	152,096	588,931	7,344,724	11,956	13,396	473,457	9,055,642
2030	222,813	236,547	11,690	152,094	588,870	7,344,093	11,956	13,395	473,413	9,054,871
2031	222,757	236,447	11,684	152,053	588,627	7,341,304	11,950	13,393	473,212	9,051,427
2032	222,755	236,442	11,684	152,054	588,604	7,341,082	11,950	13,393	473,201	9,051,165
2033	223,191	237,187	11,721	152,348	590,333	7,361,335	11,987	13,412	474,694	9,076,208
2034	223,176	237,165	11,720	152,341	590,280	7,360,690	11,986	13,412	474,646	9,075,416
2035	223,116	237,062	11,715	152,300	590,040	7,357,872	11,982	13,409	474,441	9,071,937
TOTAL	12,444,380	13,441,660	664,416	8,493,917	33,384,905	418,252,926	679,490	752,175	26,904,264	515,018,133

TABLE B-16A: MINIMUM OMP&R COMPONENT OF

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
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	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	44,455	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	669,287	326,691	201,636	57,849	332,541	11,861	403,425	86,938	1,228,995	322,803
1979	661,738	278,765	196,389	52,243	323,883	12,137	401,727	87,204	1,126,104	302,689
1980	857,640	328,518	253,454	72,012	417,996	15,428	509,128	112,804	1,520,191	401,713
1981	992,380	416,780	283,507	72,975	467,560	17,910	585,405	130,931	1,538,528	418,165
1982	1,109,116	460,654	317,548	88,702	523,702	19,865	642,201	145,557	1,856,480	493,999
1983	1,698,317	641,691	436,769	114,751	720,314	29,799	897,750	219,634	2,303,659	623,845
1984	2,195,863	818,630	558,036	149,655	920,311	38,251	1,139,346	282,461	3,001,434	806,772
1985	2,306,138	819,528	595,050	157,576	981,348	40,157	1,220,460	297,225	3,210,941	864,053
1986	2,526,522	903,396	660,290	177,703	1,088,947	44,497	1,346,997	327,205	3,563,583	954,827
1987	2,460,988	933,259	670,971	187,564	1,106,568	43,708	1,354,301	320,461	3,755,450	996,752
1988	2,334,658	866,357	646,594	171,781	1,066,364	41,724	1,324,516	305,175	3,512,216	947,002
1989	2,326,647	846,683	655,787	180,840	1,081,523	41,686	1,329,270	304,636	3,690,502	983,876
1990	2,326,470	848,666	653,562	178,232	1,077,858	41,677	1,329,036	304,592	3,644,412	974,855
1991	2,323,150	850,461	658,142	183,994	1,085,409	41,632	1,328,333	304,221	3,747,388	994,432
1992	2,324,109	851,545	651,966	176,004	1,075,226	41,651	1,329,026	304,358	3,605,625	966,572
1993	2,328,030	838,602	646,844	168,502	1,066,766	41,732	1,331,679	304,924	3,472,421	941,051
1994	2,331,858	876,172	666,045	190,367	1,098,446	41,820	1,335,073	305,525	3,861,183	1,017,496
1995	2,330,068	828,643	650,274	171,849	1,072,432	41,778	1,333,486	305,243	3,531,973	952,987
1996	2,333,307	881,934	657,644	179,503	1,084,584	41,852	1,336,357	305,753	3,668,161	980,064
1997	2,332,174	834,838	648,618	168,949	1,069,694	41,827	1,335,349	305,576	3,480,605	943,295
1998	2,335,848	886,349	675,331	200,052	1,113,767	41,912	1,338,616	306,154	4,033,506	1,051,739
1999	2,335,374	829,897	648,495	167,470	1,069,494	41,901	1,338,195	306,077	3,454,439	938,690
2000	2,337,687	869,821	655,555	175,135	1,081,137	41,953	1,340,242	306,442	3,590,744	965,647
2001	2,341,227	866,292	657,721	176,648	1,084,709	42,023	1,342,661	306,941	3,618,290	971,479
2002	2,357,731	859,195	672,417	188,418	1,108,957	42,386	1,355,875	309,446	3,828,149	1,014,750
2003	2,358,811	857,939	676,674	193,069	1,115,974	42,416	1,357,043	309,628	3,910,855	1,031,092
2004	2,393,017	925,879	662,343	168,808	1,092,330	42,997	1,371,511	313,958	3,480,613	949,715
2005	2,392,946	845,195	693,507	206,895	1,143,742	42,995	1,371,456	313,946	4,157,518	1,081,764
2006	2,418,345	901,526	671,773	175,662	1,107,881	43,424	1,381,474	317,166	3,602,393	975,187
2007	2,423,082	897,655	684,922	184,877	1,129,574	43,559	1,396,124	318,028	3,773,264	1,011,511
2008	2,423,979	902,678	683,272	182,487	1,126,845	43,578	1,396,915	318,168	3,730,832	1,003,367
2009	2,436,392	916,710	719,171	221,179	1,186,075	43,861	1,407,931	320,118	4,419,187	1,139,613
2010	2,436,428	887,810	672,771	164,488	1,109,519	43,862	1,407,958	320,122	3,411,649	943,051
2011	2,436,272	952,213	707,637	207,159	1,167,044	43,860	1,407,783	320,111	4,169,372	1,090,800
2012	2,436,828	872,191	688,548	183,605	1,135,546	43,873	1,408,282	320,199	3,750,799	1,009,231
2013	2,437,550	953,934	681,544	174,751	1,123,997	43,892	1,408,935	320,313	3,593,443	978,646
2014	2,438,218	811,936	729,938	233,585	1,203,839	43,907	1,409,526	320,417	4,639,080	1,182,743
2015	2,450,650	997,255	689,755	179,335	1,137,541	44,192	1,420,555	322,367	3,675,667	996,744
2016	2,451,211	818,639	692,936	182,988	1,142,788	44,204	1,421,053	322,457	3,740,594	1,009,500
2017	2,451,014	985,375	697,036	188,073	1,149,548	44,197	1,420,885	322,426	3,830,965	1,027,095
2018	2,450,863	908,037	698,018	189,337	1,151,173	44,195	1,420,759	322,402	3,853,375	1,031,447
2019	2,463,478	853,997	701,048	187,783	1,156,161	44,488	1,431,969	324,382	3,826,482	1,028,185
2020	2,459,521	962,015	711,933	201,927	1,174,124	44,415	1,430,156	323,868	4,077,806	1,076,904
2021	2,458,783	964,526	731,620	226,286	1,206,600	44,397	1,429,482	323,746	4,510,755	1,161,250
2022	2,425,597	829,644	697,731	190,610	1,150,699	43,852	1,417,237	319,642	3,876,866	1,035,480
2023	2,424,856	1,005,692	687,475	178,398	1,133,774	43,834	1,416,563	319,525	3,659,755	993,002
2024	2,380,598	886,397	701,750	204,000	1,157,331	43,088	1,399,099	313,943	4,113,707	1,078,477
2025	2,373,823	844,096	671,025	177,696	1,106,652	42,894	1,375,102	312,674	3,633,963	979,965
2026	2,382,892	891,319	678,717	183,325	1,119,340	43,103	1,383,148	314,100	3,734,471	1,000,998
2027	2,382,294	959,396	709,510	221,184	1,170,144	43,091	1,382,621	314,006	4,407,293	1,132,168
2028	2,382,442	890,234	659,394	159,897	1,087,457	43,095	1,382,773	314,030	3,318,068	919,695
2029	2,377,062	848,779	694,734	204,108	1,145,767	43,001	1,380,533	313,341	4,103,894	1,072,615
2030	2,376,908	858,327	681,268	187,712	1,123,545	42,997	1,380,415	313,314	3,812,513	1,015,750
2031	2,375,900	992,861	664,951	168,197	1,096,635	42,974	1,379,536	313,158	3,465,628	947,918
2032	2,375,798	804,566	666,475	170,107	1,099,140	42,970	1,379,423	313,141	3,499,557	954,518
2033	2,383,376	908,236	705,144	214,213	1,162,935	43,146	1,386,099	314,327	4,283,847	1,108,711
2034	2,383,064	843,663	674,117	176,465	1,111,757	43,136	1,385,791	314,273	3,612,952	977,770
2035	2,381,952	984,068	704,413	213,948	1,161,736	43,112	1,384,781	314,104	4,278,975	1,107,529
TOTAL	133,480,830	49,842,270	37,743,900	10,368,947	62,247,269	2,397,725	76,554,402	17,512,560	211,151,972	56,305,524

TRANSPORTATION CHARGE FOR EACH CONTRACTOR[a]

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC & WCD	Total	South Bay	
	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
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	18,567
1963	0	0	0	0	0	0	0	0	12,626	168,358
1964	0	0	0	0	0	0	0	0	13,938	184,729
1965	0	0	0	0	0	0	0	0	28,937	378,874
1966	0	0	0	0	0	0	0	0	31,321	408,397
1967	0	0	0	0	0	0	0	0	47,719	634,505
1968	8,819	972,744	9,504	1,210,158	0	0	0	0	46,945	2,745,160
1969	11,706	1,295,613	12,610	1,610,636	0	0	0	0	52,963	4,074,939
1970	14,621	1,624,573	15,745	2,018,018	0	0	0	0	69,745	4,676,282
1971	24,302	2,716,582	26,120	3,369,771	0	0	54	54	55,532	6,185,714
1972	89,132	8,038,457	68,368	9,980,446	0	0	40	40	80,412	12,998,869
1973	117,781	9,890,314	78,312	12,236,318	0	0	1	1	54,219	15,194,233
1974	128,166	11,581,499	83,451	14,112,990	0	0	143	143	76,783	17,372,561
1975	147,900	13,584,540	101,892	16,529,140	0	0	1,069	1,069	84,546	20,517,423
1976	158,663	12,862,496	94,799	15,970,982	0	0	139	139	106,717	20,027,213
1977	178,791	16,205,613	121,985	19,822,996	0	0	892	892	98,631	24,217,840
1978	199,995	19,060,709	143,308	23,046,038	0	0	39	39	103,005	27,731,313
1979	186,800	16,425,004	126,853	20,181,536	0	0	3,235	3,235	119,357	24,689,214
1980	248,703	20,943,881	154,194	25,835,662	0	0	416	416	178,830	32,050,893
1981	257,761	23,861,122	187,591	29,230,615	0	0	3,847	3,847	194,794	35,626,045
1982	305,581	28,115,746	209,878	34,289,029	0	0	10,956	10,956	174,063	41,675,534
1983	384,540	36,280,592	299,679	44,651,340	0	0	-422	-422	227,657	53,499,949
1984	498,048	46,389,323	387,978	57,186,108	0	0	643	643	224,174	67,788,181
1985	532,979	47,670,121	398,005	59,093,581	0	0	2,599	2,599	336,591	71,121,221
1986	589,448	53,090,491	431,488	65,705,394	0	0	2,595	2,595	378,562	79,222,503
1987	616,494	54,690,362	436,545	67,573,423	0	0	2,595	2,595	402,412	81,819,302
1988	584,341	51,739,012	407,740	63,947,480	0	0	2,601	2,601	390,301	78,573,112
1989	608,247	51,414,032	400,557	63,864,286	0	0	2,604	2,604	388,420	78,391,982
1990	602,342	51,528,380	401,208	63,911,290	0	0	2,605	2,605	388,505	78,434,196
1991	615,246	51,900,766	401,622	64,434,796	0	0	2,607	2,607	388,699	78,944,900
1992	597,014	51,077,913	402,028	63,403,037	0	0	2,608	2,608	388,876	77,920,647
1993	580,225	50,899,631	397,967	63,018,374	0	0	2,608	2,608	389,061	77,858,703
1994	630,236	53,125,406	410,423	65,890,050	0	0	2,608	2,608	389,434	80,750,120
1995	588,003	50,315,460	394,795	62,516,991	0	0	2,608	2,608	389,157	77,367,537
1996	605,674	53,112,061	412,368	65,599,262	0	0	2,608	2,608	389,508	80,466,538
1997	581,605	50,574,193	396,907	62,713,630	0	0	2,608	2,608	389,325	77,574,778
1998	652,585	54,130,987	413,919	67,180,765	0	0	2,608	2,608	389,760	82,060,876
1999	578,521	49,957,363	395,422	62,061,338	0	0	2,608	2,608	389,694	76,938,849
2000	596,133	52,722,097	408,587	65,091,180	0	0	2,608	2,608	389,966	79,980,754
2001	599,892	52,060,941	407,592	64,476,416	0	0	2,611	2,611	390,613	79,391,231
2002	627,919	52,896,607	405,971	65,667,821	0	0	2,611	2,611	392,576	80,697,091
2003	638,597	53,323,900	405,619	66,221,617	0	0	2,611	2,611	404,261	81,381,926
2004	584,909	53,937,868	430,067	66,354,015	0	0	2,611	2,611	405,431	81,710,122
2005	671,438	53,879,662	403,662	67,204,726	0	0	2,611	2,611	405,421	82,560,393
2006	601,354	54,223,120	423,284	66,842,589	0	0	2,611	2,611	405,534	82,269,842
2007	624,743	54,243,135	422,487	67,152,961	0	0	2,611	2,611	405,645	82,584,963
2008	619,390	54,362,585	424,168	67,218,264	0	0	2,611	2,611	405,754	82,655,016
2009	708,389	57,443,055	429,277	71,390,958	0	0	2,611	2,611	407,245	86,892,498
2010	579,592	52,983,292	419,816	65,380,358	0	0	2,611	2,611	407,251	80,882,137
2011	676,415	56,698,242	440,867	70,317,775	0	0	2,613	2,613	406,678	85,805,220
2012	622,954	54,177,952	414,702	67,064,710	0	0	2,613	2,613	406,745	82,555,034
2013	602,893	56,689,790	441,485	69,451,173	0	0	2,613	2,613	406,838	84,945,173
2014	736,619	53,586,543	395,042	67,731,393	0	0	2,613	2,613	406,918	83,228,854
2015	614,465	58,842,500	456,207	71,827,233	0	0	2,613	2,613	408,417	87,389,773
2016	622,809	51,615,875	397,774	64,462,828	0	0	2,613	2,613	408,486	80,028,286
2017	634,347	58,830,004	452,332	72,033,297	0	0	2,613	2,613	408,466	87,597,718
2018	637,201	55,278,552	427,016	68,412,375	0	0	2,613	2,613	408,449	83,975,928
2019	634,786	53,617,159	409,858	66,679,776	0	0	2,613	2,613	409,973	82,309,191
2020	666,755	58,699,891	445,027	72,274,342	0	0	2,613	2,613	409,529	87,849,724
2021	722,040	58,393,787	445,818	72,619,090	0	0	2,613	2,613	395,939	88,045,940
2022	639,929	53,866,131	399,431	66,892,849	0	0	2,613	2,613	395,545	82,137,624
2023	612,113	58,541,645	457,015	71,473,647	0	0	2,613	2,613	395,469	86,714,962
2024	668,561	54,840,964	415,863	68,203,778	0	0	2,613	2,613	394,723	83,299,120
2025	604,689	52,732,610	401,272	65,256,461	0	0	2,613	2,613	394,711	80,351,210
2026	618,272	55,252,471	417,101	68,019,257	0	0	2,613	2,613	395,802	83,161,403
2027	704,238	58,178,763	439,356	72,044,064	0	0	2,613	2,613	395,732	87,183,050
2028	565,006	53,253,379	416,725	65,392,195	0	0	2,613	2,613	395,746	80,531,780
2029	665,265	54,754,980	402,913	68,006,992	0	0	2,613	2,613	395,691	83,127,829
2030	628,002	53,200,739	406,027	66,027,517	0	0	2,613	2,613	395,678	81,147,414
2031	583,577	57,692,147	450,016	70,173,498	0	0	2,613	2,613	395,567	85,288,197
2032	587,912	50,316,070	388,389	62,598,066	0	0	2,613	2,613	395,569	77,712,550
2033	688,777	56,871,663	422,631	70,493,105	0	0	2,613	2,613	396,495	85,647,791
2034	602,985	52,311,998	401,485	64,839,456	0	0	2,613	2,613	396,466	79,992,876
2035	688,036	58,065,808	447,384	71,775,846	0	0	2,613	2,613	396,338	86,923,679
TOTAL	34,805,271	3,023,460,911	23,395,527	3,739,267,108	0	0	154,165	154,165	22,306,886	4,588,266,356

TABLE B-16B: MINIMUM OMP&R COMPONENT OF TRANSPORTATION CHARGE

(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)
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	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	47,471	31,445	863,898	942,814	0	0	0
1984	29,819	0	29,819	156,557	77,033	2,030,810	2,264,400	0	0	0
1985	59,540	0	59,540	498,904	634,127	2,934,534	4,067,565	0	0	0
1986	52,644	0	52,644	664,674	991,484	2,629,772	4,285,930	0	0	0
1987	61,988	0	61,988	605,557	980,518	2,235,087	3,821,162	0	0	0
1988	70,367	172,021	242,388	677,699	1,072,067	2,348,859	4,098,625	0	0	0
1989	75,722	196,145	271,867	721,311	1,095,822	2,437,867	4,255,000	0	0	0
1990	89,627	229,757	319,384	798,481	1,156,650	2,615,827	4,570,958	0	0	0
1991	102,314	232,945	335,259	858,873	1,140,582	2,615,630	4,615,085	0	0	0
1992	113,585	237,508	351,093	909,666	1,078,623	2,595,184	4,583,473	0	0	0
1993	124,332	242,665	366,997	958,397	1,089,059	2,577,964	4,625,420	401,360	730,251	1,131,611
1994	132,629	244,390	377,019	990,503	1,060,794	2,525,699	4,576,996	385,359	701,137	1,086,496
1995	147,431	275,167	422,598	1,072,059	1,072,059	2,552,521	4,696,639	389,451	708,583	1,098,034
1996	153,810	285,362	439,172	1,092,664	1,042,998	2,483,328	4,618,990	378,894	689,375	1,068,269
1997	160,841	284,446	445,287	1,119,071	1,021,761	2,432,763	4,573,595	371,179	675,338	1,046,517
1998	165,463	280,082	445,545	1,082,803	988,646	2,353,920	4,425,369	359,150	653,451	1,012,601
1999	162,898	265,189	428,087	1,006,215	918,718	2,187,425	4,112,358	333,746	607,232	940,978
2000	168,587	264,234	432,821	986,036	900,294	2,143,556	4,029,886	327,053	595,054	922,107
2001	167,591	255,199	422,790	938,184	856,603	2,039,530	3,834,317	311,182	566,176	877,358
2002	166,160	247,123	413,283	891,926	814,367	1,938,969	3,645,262	295,839	538,260	834,099
2003	164,280	238,547	402,827	847,009	773,356	1,841,324	3,461,689	280,940	511,154	792,094
2004	158,382	224,768	383,150	785,574	717,262	1,707,769	3,210,605	260,563	474,078	734,641
2005	159,418	218,091	377,509	761,775	695,534	1,656,034	3,113,343	252,670	459,717	712,387
2006	157,069	206,631	363,700	721,317	658,594	1,568,080	2,947,991	239,250	435,301	674,551
2007	154,331	195,537	349,868	682,177	622,858	1,482,996	2,788,031	226,268	411,681	637,949
2008	151,461	185,076	336,537	645,301	589,187	1,402,827	2,637,315	214,036	389,427	603,463
2009	145,389	171,564	316,953	597,831	545,846	1,299,632	2,443,309	198,291	360,780	559,071
2010	143,348	163,556	306,904	569,580	520,051	1,238,217	2,327,848	188,921	343,731	532,652
2011	140,052	154,030	294,082	536,087	489,472	1,165,408	2,190,967	177,812	323,518	501,330
2012	136,811	145,147	281,958	505,169	461,241	1,098,194	2,064,604	167,557	304,860	472,417
2013	91,292	93,659	184,951	325,581	297,270	707,785	1,330,636	107,991	196,482	304,473
2014	93,621	92,931	186,552	322,862	294,786	701,873	1,319,521	107,088	194,841	301,929
2015	49,862	47,942	97,804	166,459	151,985	361,867	680,311	55,212	100,455	155,667
2016	39,299	36,778	76,077	127,698	116,594	277,604	521,896	42,355	77,063	119,418
2017	21,344	19,457	40,801	67,554	61,680	146,856	276,090	22,407	40,768	63,175
2018	22,618	20,095	42,713	69,773	63,705	151,680	285,158	23,142	42,107	65,249
2019	11,802	10,228	22,030	35,509	32,422	77,195	145,126	11,778	21,430	33,208
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	4,055,797	5,936,270	9,992,067	23,844,307	25,115,493	63,428,484	112,388,284	6,129,494	11,152,250	17,281,744

a) Unadjusted for prior overpayments or underpayments of charges.

FOR EACH CONTRACTOR FOR OFF-AQUEDUCT POWER FACILITIES[a]

(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)
1960	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0
1972	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	76,952	159,184	0	34,375	2,964,945	13,173	9,673	3,733	3,262,035
1984	179,446	387,728	0	794,619	9,101,350	26,651	33,422	49,373	10,572,589
1985	246,235	574,568	64,561	1,145,097	13,037,575	42,237	46,032	1,363,914	16,520,219
1986	242,585	559,405	42,304	1,185,382	13,168,872	41,191	38,776	1,179,050	16,457,565
1987	196,861	486,338	28,386	1,062,305	11,481,881	37,848	33,557	1,121,229	14,448,405
1988	206,882	531,976	29,830	1,163,842	12,557,323	39,773	36,621	1,178,302	15,744,549
1989	209,949	561,056	30,273	1,224,492	13,093,468	40,364	38,541	1,195,776	16,393,919
1990	220,379	611,168	31,776	1,353,106	14,131,674	42,368	41,178	1,255,172	17,686,821
1991	215,673	598,120	31,098	1,324,217	13,829,965	41,464	40,299	1,228,374	17,309,210
1992	209,529	581,081	30,212	1,286,493	13,435,983	40,283	39,150	1,193,381	16,816,112
1993	203,891	565,445	29,399	1,251,876	13,074,447	39,199	38,097	1,161,269	16,363,623
1994	195,763	542,901	28,228	1,201,965	12,553,191	37,636	36,579	1,114,971	15,711,234
1995	197,842	548,667	28,527	1,214,730	12,686,499	38,035	36,966	1,126,812	15,878,078
1996	192,478	533,794	27,754	1,181,802	12,342,599	37,005	35,964	1,096,267	15,447,663
1997	188,559	522,925	27,188	1,157,738	12,091,283	36,252	35,233	1,073,945	15,133,123
1998	182,448	505,978	26,307	1,120,217	11,699,416	35,076	34,090	1,039,140	14,642,672
1999	169,543	470,189	24,447	1,040,982	10,871,903	32,596	31,680	965,640	13,606,980
2000	166,143	460,760	23,956	1,020,106	10,653,871	31,942	31,044	946,274	13,334,096
2001	158,080	438,399	22,794	970,601	10,136,842	30,392	29,537	900,352	12,686,997
2002	150,286	416,784	21,670	922,744	9,637,036	28,893	28,081	855,959	12,061,453
2003	142,718	395,794	20,579	876,275	9,151,720	27,438	26,667	812,854	11,454,045
2004	132,366	367,087	19,086	812,717	8,487,925	25,448	24,732	753,896	10,623,257
2005	128,356	355,966	18,508	788,097	8,230,792	24,677	23,984	731,057	10,301,437
2006	121,539	337,061	17,525	746,240	7,793,649	23,366	22,709	692,230	9,754,319
2007	114,944	318,772	16,574	705,749	7,370,760	22,099	21,478	654,669	9,225,045
2008	108,730	301,540	15,677	667,598	6,972,308	20,904	20,317	619,279	8,726,353
2009	100,732	279,357	14,525	618,488	6,459,411	19,366	18,822	573,723	8,084,424
2010	95,972	266,156	13,839	589,260	6,154,169	18,451	17,932	546,612	7,702,391
2011	90,329	250,506	13,024	554,611	5,792,292	17,366	16,878	514,470	7,249,476
2012	85,119	236,058	12,273	522,624	5,458,227	16,365	15,904	484,798	6,831,368
2013	54,859	152,139	7,910	336,831	3,517,825	10,547	10,250	312,452	4,402,813
2014	54,401	150,868	7,844	334,018	3,488,437	10,459	10,164	309,843	4,366,034
2015	28,048	77,784	4,044	172,211	1,798,549	5,392	5,241	159,746	2,251,015
2016	21,516	59,672	3,102	132,110	1,379,742	4,137	4,020	122,549	1,726,848
2017	11,383	31,567	1,641	69,888	729,905	2,188	2,127	64,830	913,529
2018	11,756	32,604	1,695	72,183	753,876	2,260	2,196	66,959	943,529
2019	5,983	16,594	862	36,737	383,674	1,150	1,118	34,078	480,196
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	5,118,275	13,685,991	737,418	29,692,326	316,473,384	963,991	939,059	27,502,978	395,113,422

TABLE B-16B: MINIMUM OMP&R COMPONENT OF TRANSPORTATION CHARGE

(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)
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	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	1,083,831	334,277	565,772	35,431	894,532	1,250	0	0	233,123	28,547
1984	2,488,358	938,033	1,420,867	101,645	2,252,769	77	0	0	500,655	689,888
1985	4,080,300	1,464,592	2,212,148	185,160	3,515,687	0	0	171,517	962,257	654,699
1986	3,701,039	1,481,722	2,124,885	176,082	3,383,946	59,587	0	292,907	1,114,485	1,108,534
1987	3,168,886	1,374,840	1,927,068	150,052	3,124,011	8,385	0	251,545	1,154,396	833,070
1988	3,439,013	1,570,361	2,152,416	185,309	3,543,587	8,812	0	334,843	1,725,936	875,474
1989	3,564,236	1,722,968	2,313,481	211,537	3,860,561	8,943	0	375,578	1,764,223	888,458
1990	3,822,940	1,914,889	2,564,621	241,474	4,229,958	9,387	0	431,779	2,398,087	1,110,225
1991	2,381,317	2,000,444	2,509,866	251,530	4,139,650	9,186	5,519,532	459,306	2,738,036	1,112,598
1992	2,404,419	2,066,580	2,438,366	256,504	4,021,721	169,564	5,362,294	501,999	2,865,872	1,106,237
1993	2,428,300	2,130,690	2,372,754	261,414	3,913,504	173,686	5,218,005	542,768	2,989,054	1,101,123
1994	2,416,453	2,160,777	2,278,157	262,333	3,757,479	175,100	5,009,972	573,242	3,062,197	1,080,892
1995	2,527,982	2,299,888	2,302,350	276,581	3,797,381	185,386	5,063,176	631,995	3,289,071	1,116,290
1996	2,590,625	2,350,648	2,239,939	280,234	3,694,445	188,558	4,925,925	672,251	3,413,240	1,113,181
1997	2,666,375	2,413,586	2,194,330	285,453	3,619,219	184,719	4,825,625	714,781	3,552,724	1,117,114
1998	2,704,296	2,442,574	2,123,213	286,772	3,501,923	178,733	4,669,231	746,012	3,639,795	1,106,644
1999	2,628,559	2,369,435	1,973,036	276,311	3,254,228	166,091	4,338,971	743,795	3,570,256	1,052,286
2000	2,689,069	2,419,546	1,933,468	280,394	3,188,966	162,760	4,251,955	778,414	3,682,796	1,054,618
2001	2,679,765	2,418,493	1,839,637	275,946	3,034,206	154,861	4,045,609	781,037	3,695,202	1,028,922
2002	2,662,856	2,409,877	1,748,932	271,046	2,884,603	147,225	3,846,136	780,934	3,694,714	1,002,418
2003	2,638,173	2,393,574	1,660,857	265,665	2,739,335	139,812	3,652,447	778,078	3,681,207	974,944
2004	2,548,301	2,733,825	1,540,391	254,064	2,540,645	129,671	3,387,526	755,470	3,574,240	925,569
2005	2,569,510	2,341,684	1,493,726	253,805	2,463,679	125,742	3,284,905	765,386	3,621,156	918,221
2006	2,557,282	2,234,809	1,414,393	247,366	2,332,831	119,064	3,110,441	758,902	3,575,783	891,497
2007	2,536,021	2,130,092	1,337,647	240,603	2,206,251	112,603	2,941,667	750,036	3,520,735	863,970
2008	2,510,075	2,030,542	1,265,337	233,895	2,086,984	106,516	2,782,645	740,055	3,461,874	547,765
2009	2,428,400	1,895,670	1,172,256	222,526	1,933,461	98,681	2,577,948	713,932	3,329,004	793,683
2010	2,411,750	1,819,903	1,116,861	217,570	1,842,094	94,018	2,456,126	707,174	3,287,727	773,583
2011	2,393,049	1,712,890	1,051,186	210,010	1,733,776	88,489	2,311,701	665,591	3,203,617	746,297
2012	2,371,047	1,614,100	990,561	202,829	1,633,781	83,386	2,178,375	627,204	3,121,766	720,408
2013	1,602,910	1,040,287	638,416	133,901	1,052,972	53,742	1,403,962	404,232	2,078,306	475,357
2014	1,663,666	1,031,596	633,083	135,934	1,044,175	53,293	1,392,234	400,855	2,126,719	482,349
2015	895,972	531,865	326,401	71,710	538,350	27,476	717,800	206,671	1,130,394	254,339
2016	714,830	408,016	250,396	56,258	412,991	21,078	550,654	158,546	910,531	199,883
2017	392,702	215,846	132,464	30,420	218,479	11,151	291,305	83,873	504,622	108,265
2018	420,620	222,935	136,814	32,101	225,653	11,517	300,871	86,628	544,885	114,426
2019	221,713	113,460	69,629	16,684	114,843	5,861	153,124	44,088	289,368	59,562
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	87,004,640	62,755,314	56,465,724	7,376,549	92,732,676	3,274,410	90,570,162	18,431,424	92,008,053	29,031,336

FOR EACH CONTRACTOR FOR OFF-AQUEDUCT POWER FACILITIES[a]

(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)
1960	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0
1972	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	12,790,786	0	15,967,549	0	0	0	0	20,182,468
1984	0	39,049,254	0	47,441,546	0	0	0	0	60,308,354
1985	0	84,284,718	0	97,531,078	0	0	0	0	118,178,402
1986	0	96,890,173	0	110,333,360	0	0	0	0	131,129,499
1987	0	109,255,614	0	121,247,867	0	0	0	0	139,579,422
1988	312,670	114,429,145	70,899	128,648,465	0	0	0	0	148,734,027
1989	317,306	115,732,578	143,900	130,903,769	0	0	0	0	151,824,555
1990	333,068	121,167,369	226,572	138,450,369	0	0	0	0	161,027,532
1991	369,418	118,580,461	320,284	140,391,628	0	0	0	0	162,651,182
1992	401,116	117,862,427	406,901	139,864,000	0	0	0	0	161,614,678
1993	431,409	115,985,204	489,118	138,037,029	0	0	0	0	160,524,680
1994	453,659	112,603,707	626,157	134,460,125	0	0	0	0	156,211,870
1995	498,345	115,094,949	791,008	137,874,402	0	0	0	0	159,969,751
1996	853,310	115,077,953	989,441	138,389,750	0	0	0	0	159,963,844
1997	911,929	115,062,091	1,206,233	138,754,179	0	0	0	0	159,952,701
1998	955,906	113,584,927	1,458,925	137,398,951	0	0	0	0	157,925,138
1999	956,624	107,643,553	1,413,837	130,386,982	0	0	0	0	149,475,385
2000	1,004,399	106,531,049	1,442,420	129,419,854	0	0	0	0	148,138,764
2001	1,040,072	103,035,922	1,386,867	125,416,539	0	0	0	0	143,238,001
2002	1,069,044	99,547,851	1,332,220	121,397,856	0	0	0	0	138,351,953
2003	1,091,420	96,046,700	1,278,173	117,340,385	0	0	0	0	133,451,040
2004	1,084,275	90,481,230	1,197,561	111,152,768	0	0	0	0	126,104,421
2005	1,118,679	89,101,375	1,173,012	109,230,880	0	0	0	0	123,735,556
2006	1,059,264	85,721,680	1,110,712	105,134,024	0	0	0	0	118,874,585
2007	1,001,788	82,349,536	1,050,444	101,041,393	0	0	0	0	114,042,286
2008	947,633	79,107,857	993,659	96,814,837	0	0	0	0	109,118,505
2009	877,923	74,409,525	920,563	91,373,572	0	0	0	0	102,777,329
2010	836,437	71,961,294	877,062	88,401,599	0	0	0	0	99,271,394
2011	787,252	68,412,419	825,489	84,141,766	0	0	0	0	94,377,621
2012	741,848	65,110,013	777,879	80,173,197	0	0	0	0	89,823,544
2013	478,121	42,377,928	501,343	52,241,477	0	0	0	0	58,464,350
2014	474,127	42,435,004	497,155	52,370,190	0	0	0	0	58,544,226
2015	244,447	22,090,354	256,320	27,292,099	0	0	0	0	30,476,896
2016	187,526	17,109,024	196,634	21,176,367	0	0	0	0	23,620,606
2017	99,204	9,136,960	104,022	11,329,313	0	0	0	0	12,622,908
2018	102,462	9,525,856	107,439	11,832,207	0	0	0	0	13,168,856
2019	52,146	4,893,259	54,679	6,088,416	0	0	0	0	6,768,976
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	21,092,827	2,984,479,745	24,226,928	3,569,449,788	0	0	0	0	4,104,225,305

TABLE B-17: UNIT VARIABLE OMP&R COMPONENT

(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 (b		Reach 1 South Bay and Del Valle Pumping Plant (c		Reach 1 Harvey O. Banks Delta 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	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1962	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	4.1511341	4.1511341	0.0000000	0.0000000
1963	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	4.5639383	4.5639383	0.0000000	0.0000000
1964	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	3.5452154	3.5452154	0.0000000	0.0000000
1965	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	4.1911773	4.1911773	0.0000000	0.0000000
1966	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	3.5074573	3.5074573	0.0000000	0.0000000
1967	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	3.9306767	5.1337448	1.2030681	1.2030681
1968	0.0000000	0.0000000	0.0000000	0.0000000	5.7570016	5.7570016	3.3315620	4.8750942	1.5435322	1.5435322
1969	0.0000000	0.0000000	0.0000000	0.0000000	3.1823595	3.1823595	3.6949019	4.8016170	1.1067151	1.1067151
1970	0.0000000	0.0000000	0.0000000	0.0000000	3.7584301	3.7584301	4.4256141	5.3721490	0.9465349	0.9465349
1971	0.0000000	0.0000000	0.0000000	0.0000000	4.2082507	4.2082507	3.8714396	4.7522833	0.8808437	0.8808437
1972	0.0000000	0.0000000	0.0000000	0.0000000	3.9577735	3.9577735	4.3250690	5.2281686	0.9030996	0.9030996
1973	0.0000000	0.0000000	0.0000000	0.0000000	3.8103903	3.8103903	5.2455409	6.1841800	0.9386391	0.9386391
1974	0.0000000	0.0000000	0.0000000	0.0000000	3.5878850	3.5878850	6.3321503	7.2293909	0.8972406	0.8972406
1975	0.0000000	0.0000000	0.0000000	0.0000000	2.1606725	2.1606725	3.7365711	4.8327731	1.0962020	1.0962020
1976	0.0000000	0.0000000	0.0000000	0.0000000	2.9283909	2.9283909	4.5191527	5.7132795	1.1941268	1.1941268
1977	0.0000000	0.0000000	0.0000000	0.0000000	2.7516411	2.7516411	4.7630172	6.5309908	1.7679736	1.7679736
1978	0.0000000	0.0000000	0.0000000	0.0000000	3.5949619	3.5949619	5.2086183	6.8200209	1.6114026	1.6114026
1979	0.0000000	0.0000000	0.0000000	0.0000000	2.4747752	2.4747752	4.9524184	7.0889234	2.1365050	2.1365050
1980	0.0000000	0.0000000	0.0000000	0.0000000	2.9737588	2.9737588	4.5186576	5.8810390	1.3623814	1.3623814
1981	0.0000000	0.0000000	0.0000000	0.0000000	2.4099544	2.4099544	4.3834851	6.4805853	2.0971002	2.0971002
1982	0.0000000	0.0000000	0.0000000	0.0000000	10.3528442	10.3528442	4.9087723	6.6537049	1.7449326	1.7449326
1983	0.0000000	0.0000000	0.0000000	0.0000000	1.1167468	1.1167468	1.5086524	2.3784402	0.8697878	0.8697878
1984	0.0000000	0.0000000	0.0000000	0.0000000	1.7642833	1.7642833	2.4919794	3.6073411	1.1153617	1.1153617
1985	0.0000000	0.0000000	0.0000000	0.0000000	2.4186680	2.4186680	4.1966614	5.8825251	1.6858637	1.6858637
1986	0.0000000	0.0000000	0.0000000	0.0000000	5.0080301	5.0080301	7.1296542	10.1120461	2.9823919	2.9823919
1987	0.0000000	0.0000000	0.0000000	0.0000000	5.1822635	5.1822635	8.7398021	12.7673863	4.0275842	4.0275842
1988	1.5570277	1.5570277	2.1507872	3.7078149	4.5408115	4.5408115	7.5486764	10.5898382	3.0411618	3.0411618
1989	1.7303941	1.7303941	2.3615578	4.0919519	5.0398379	5.0398379	8.3393598	11.6561401	3.3167803	3.3167803
1990	1.7004189	1.7004189	2.3073841	4.0078030	4.9606786	4.9606786	8.1652121	11.4065981	3.2413860	3.2413860
1991	1.7738417	1.7738417	2.3626088	4.1364505	5.1894251	5.1894251	8.4608878	11.8033680	3.3424802	3.3424802
1992	1.8144774	1.8144774	2.3577120	4.1721894	5.2884097	5.2884097	8.5768505	11.9626795	3.3858290	3.3858290
1993	1.9609714	1.9609714	2.5031344	4.4641058	5.6906283	5.6906283	9.1823776	12.7925176	3.6101400	3.6101400
1994	2.2012024	2.2012024	2.7606737	4.9618761	6.3399233	6.3399233	10.2120607	14.2014500	3.9893893	3.9893893
1995	2.1408337	2.1408337	2.5667020	4.7075357	6.0666667	6.0666667	9.7287120	13.5442891	3.8155771	3.8155771
1996	2.3719041	2.3719041	2.7983942	5.1702983	6.6184478	6.6184478	10.5917688	14.7254889	4.1337201	4.1337201
1997	2.3096928	2.3096928	2.7159039	5.0255967	6.4237724	6.4237724	10.2657553	14.2814855	4.0157302	4.0157302
1998	2.5420392	2.5420392	2.9830331	5.5250723	7.0520050	7.0520050	11.2437287	15.6145851	4.3708564	4.3708564
1999	2.5228012	2.5228012	2.9538735	5.4766747	6.9754140	6.9754140	11.0952447	15.4102407	4.3149960	4.3149960
2000	2.6646969	2.6646969	3.0936442	5.7583411	7.3588000	7.3588000	11.6951383	16.2462304	4.5510921	4.5510921
2001	2.7545916	2.7545916	3.1841224	5.9387140	7.5845329	7.5845329	12.0322181	16.7097037	4.6774856	4.6774856
2002	3.6101551	3.6101551	4.2180286	7.8281837	9.9034508	9.9034508	15.6853511	21.7217111	6.0363600	6.0363600
2003	3.7168358	3.7168358	4.3556315	8.0724673	10.1553597	10.1553597	16.0598032	22.2315095	6.1717063	6.1717063
2004	3.8798363	3.8798363	4.5652637	8.4451000	10.5636364	10.5636364	16.6821968	23.0802975	6.3981007	6.3981007
2005	3.8779577	3.8779577	4.4453018	8.3232595	10.5626144	10.5626144	16.6590532	23.0486607	6.3896075	6.3896075
2006	3.9534192	3.9534192	4.4442924	8.3977116	10.7466709	10.7466709	16.9139521	23.3971473	6.4831952	6.4831952
2007	4.0247506	4.0247506	4.4389934	8.4637440	10.9137848	10.9137848	17.1601006	23.7335048	6.5734942	6.5734942
2008	4.0981976	4.0981976	4.4380380	8.5362356	11.1001748	11.1001748	17.4054362	24.0690165	6.6635803	6.6635803
2009	4.9007397	4.9007397	5.2081567	10.1088964	13.2765467	13.2765467	20.7426809	28.6313350	7.8886541	7.8886541
2010	4.9226600	4.9226600	5.1341262	10.0567862	13.3377717	13.3377717	20.7551755	28.6484201	7.8932446	7.8932446
2011	4.9967816	4.9967816	5.1511695	10.1479511	13.5436649	13.5436649	20.9837979	28.9609663	7.9771684	7.9771684
2012	5.0469911	5.0469911	5.1052582	10.1522493	13.7143434	13.7143434	21.1339521	29.1666404	8.0322883	8.0322883
2013	5.1222436	5.1222436	5.0716859	10.1939295	13.9147317	13.9147317	21.3397926	29.4476330	8.1078404	8.1078404
2014	5.1878860	5.1878860	5.0344318	10.2223178	14.1180660	14.1180660	21.5203298	29.6944431	8.1741133	8.1741133
2015	6.0179186	6.0179186	5.7294407	11.7473593	16.4339269	16.4339269	24.8748723	34.2804094	9.4055371	9.4055371
2016	6.0740155	6.0740155	5.6900442	11.7640597	16.6441333	16.6441333	25.0293457	34.4915814	9.4622357	9.4622357
2017	6.0861751	6.0861751	5.6082353	11.6944104	16.7217316	16.7217316	24.9841223	34.4297615	9.4456392	9.4456392
2018	6.0988584	6.0988584	5.5307097	11.6295681	16.8199156	16.8199156	25.0547819	34.3768155	9.4220336	9.4220336
2019	6.9599548	6.9599548	6.2085138	13.1684686	19.2695473	19.2695473	28.3744096	39.0347436	10.6603340	10.6603340
2020	6.9560239	6.9560239	6.1051363	13.0611602	19.3300000	19.3300000	28.2573936	38.8570976	10.5997040	10.5997040
2021	6.9238942	6.9238942	6.0712699	12.9951641	19.2359551	19.2359551	28.1056117	38.6433607	10.5377490	10.5377490
2022	6.9409172	6.9409172	6.0818182	13.0227354	19.2872093	19.2872093	28.1662394	38.7198076	10.5535682	10.5535682
2023	6.9073477	6.9073477	6.0472990	12.9546467	19.1778846	19.1778846	28.0046543	38.4827897	10.4781354	10.4781354
2024	6.9220514	6.9220514	6.0545416	12.9765930	19.2084468	19.2084468	28.0432447	38.5189717	10.4757270	10.4757270
2025	6.9220000	6.9220000	6.0483473	12.9703473	19.2008400	19.2008400	28.0261702	38.4786884	10.4525182	10.4525182
2026	7.5349104	7.5349104	6.5779498	14.1128602	20.8822400	20.8822400	30.4803617	41.8165667	11.3362050	11.3362050
2027	7.5025373	7.5025373	6.5457950	14.0483323	20.7800800	20.7800800	30.3312660	41.5952871	11.2640211	11.2640211
2028	7.5190448	7.5190448	6.5572176	14.0762624	20.8164400	20.8164400	30.3843191	41.6398724	11.2555533	11.2555533
2029	7.4964328	7.4964328	6.5351883	14.0316211	20.7414000	20.7414000	30.2748564	41.4612053	11.1863489	11.1863489
2030	7.4992985	7.4992985	6.5406485	14.0399470	20.7338400	20.7338400	30.2638298	41.4160619	11.1522321	11.1522321
2031	7.4427015	7.4427015	6.4912971	13.9339986	20.5774000	20.5774000	30.0354415	41.0728518	11.0374103	11.0374103
2032	7.4460746	7.4460746	6.4942469	13.9403215	20.5867200	20.5867200	30.0490479	41.0796802	11.0306323	11.0306323
2033	7.9592985	7.9592985	6.9418619	14.9011604	22.0056800	22.0056800	32.1201915	43.9111254	11.7909339	11.7909339
2034	7.9432537	7.9432537	6.9278661	14.8711198	21.9612800	21.9612800	32.0554309	43.8225822	11.7671513	11.7671513
2035	7.8719851	7.8719851	6.8657113	14.7376964	21.7642400	21.7642400	31.7678138	43.4294028	11.6615890	11.6615890

a) Unit rates as shown constitute the rate for the indicated pumping plants, power plants, and reservoirs. Cumulative unit rates as shown constitute the total rate, cumulative from the Sacramento-San Joaquin Delta, applicable to deliveries from or downstream of the indicated pumping plants and power plants. Excludes extra peaking service costs.

OF TRANSPORTATION CHARGE[a]

(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 Ira J. Chrisman Wind Gap Pumping Plant		Reach 17E A.D. 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	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1962	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1963	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1964	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1965	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1966	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1967	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1968	1.0732031	2.6167353	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1969	0.7028165	1.8095316	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1970	0.7813430	1.7278779	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1971	0.4125312	1.2933749	1.3594550	2.6528299	4.9729730	7.6258029	0.0000000	0.0000000	0.0000000	0.0000000
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	0.4606980	1.5569000	0.8190849	2.3759849	0.9574493	3.3334342	1.9610412	5.2944754	6.9962702	12.2907456
1976	0.5163827	1.7105095	0.9626676	2.6731771	1.0211874	3.6943645	2.2275746	5.9219391	7.9384515	13.8603906
1977	0.5979675	2.3659411	1.0884667	3.4544078	1.3629729	4.8173807	2.9115870	7.7289677	9.9329609	17.6619286
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	0.8021465	2.1645279	1.3516057	3.5161336	1.5041463	5.0202799	3.1923433	8.2126232	10.9860288	19.1986520
1981	1.0931185	3.1902187	1.2429747	4.4331934	1.3242820	5.7574754	2.9650235	8.7224989	9.9857983	18.7082972
1982	0.8828442	2.6277768	1.2022668	3.8300436	1.3756370	5.2056806	3.1119429	8.3176235	10.1925517	18.5101752
1983	0.4088813	1.2786691	0.7501027	2.0287718	0.8750336	2.9038054	1.7454144	4.6492198	5.4509952	10.1002150
1984	0.6228113	1.7381730	0.9994603	2.7376333	1.1615960	3.8992293	2.3946402	6.2938695	7.7218990	14.0157685
1985	0.9064270	2.5922907	1.4835151	4.0758058	1.7115601	5.7873659	3.6110503	9.3984162	12.1983149	21.5967311
1986	1.5164839	4.4988758	2.5020445	7.0009203	2.9869413	9.9878616	6.2470881	16.2349497	21.5540111	37.7889608
1987	2.0572709	6.0848551	3.4970634	9.5819185	4.2201994	13.8021179	8.6579183	22.4600362	29.7709493	52.2309855
1988	1.5662208	4.6073826	2.7055419	7.3129245	3.2583591	10.5712836	6.5655755	17.1368591	21.9127980	39.0496571
1989	1.6892932	5.0060735	2.9288840	7.9349575	3.4856530	11.4206105	7.1946713	18.6152818	24.1150098	42.7302916
1990	1.6523817	4.8937677	2.8298040	7.7233717	3.3757649	11.0991366	6.9954927	18.0946293	23.6167128	41.7113421
1991	1.7030518	5.0455320	2.8841380	7.9296700	3.4637821	11.3934521	7.2319603	18.6254124	24.4237709	43.0491833
1992	1.7238386	5.1096676	2.9195554	8.0292230	3.5069537	11.5361767	7.3255184	18.8616951	24.7453089	43.6070040
1993	1.8310223	5.4411623	3.1003710	8.5415333	3.7274949	12.2690282	7.8032486	20.0722768	26.4712279	46.5435047
1994	2.0124922	6.0018815	3.4062866	9.4081681	4.1005267	13.5086948	8.6153608	22.1240556	29.3190538	51.4431094
1995	1.9341988	5.7497759	3.2594085	9.0091844	3.9213825	12.9305669	8.2338674	21.1644343	27.9817977	49.1462320
1996	2.0902366	6.2239567	3.5268165	9.7507732	4.2445562	13.9953294	8.9231369	22.9184663	30.3922674	53.3107337
1997	2.0692375	6.0849677	3.4404904	9.5254581	4.1352259	13.6606840	8.7035396	22.3642236	29.5034954	51.8677190
1998	2.2391250	6.6099814	3.7356927	10.3456741	4.4927930	14.8384671	9.5273712	24.3658383	32.2476211	56.6134594
1999	2.2461907	6.5611867	3.6933847	10.2545714	4.4460946	14.7006660	9.4656245	24.1662905	31.8521507	56.0184412
2000	2.3677730	6.9188651	3.8755803	10.7944454	4.6737430	15.4681884	9.9812422	25.4494306	33.5325665	58.9819971
2001	2.4457510	7.1232366	4.0005123	11.1237489	4.8060964	15.9298453	10.2944656	26.2243109	34.4854072	60.7097181
2002	3.0876771	9.1240371	5.1211455	14.2451826	6.1711963	20.4163789	13.2197863	33.6361652	44.6308372	78.2670024
2003	3.1505097	9.3222160	5.2600678	14.5822838	6.3392011	20.9214849	13.5231307	34.4446156	45.7365517	80.1811673
2004	3.2568385	9.6549392	5.4579183	15.1128575	6.5990867	21.7119442	14.0230225	35.7349667	47.4737009	83.2086676
2005	3.2529615	9.6425690	5.4624933	15.1050623	6.6066741	21.7117364	14.0117214	35.7234578	47.4054105	83.1288683
2006	3.2966279	9.7798231	5.5639206	15.3437437	6.7060812	22.0498249	14.2208947	36.2707196	48.0851716	84.3558912
2007	3.3364271	9.9099213	5.6278664	15.5377877	6.7816456	22.3194333	14.3989743	36.7184076	48.7407432	85.4591508
2008	3.3759179	10.0394982	5.7014625	15.7409607	6.8713764	22.6123371	14.5819815	37.1943186	49.3949466	86.5892652
2009	3.9427836	11.8314377	6.7020790	18.5335167	8.0866974	26.6202141	17.2157421	43.8359562	58.6237167	102.4596729
2010	3.9447490	11.8379936	6.7058183	18.5438119	8.0861284	26.6299403	17.2151535	43.8450938	58.6594792	102.5045730
2011	3.9843538	11.9615222	6.7743528	18.7358750	8.1643335	26.9002085	17.3852863	44.2854948	59.3050595	103.5905543
2012	4.0056953	12.0379836	6.8193909	18.8573745	8.2192361	27.0766106	17.4957511	44.5723617	59.7419708	104.3143325
2013	4.0051360	12.1129764	6.8780376	18.9910140	8.2945027	27.2855167	17.6588168	44.9443335	60.3185162	105.2628497
2014	4.0312664	12.2053797	6.9289927	19.1343724	8.3605187	27.4948911	17.8018337	45.2967248	60.8305987	106.1273235
2015	4.5961203	14.0016574	7.9315541	21.9332115	9.5870442	31.5202557	20.3414884	51.8617441	70.1367966	121.9985407
2016	4.6138291	14.0760648	7.9726414	22.0487062	9.6435623	31.6922685	20.4638974	52.1561659	70.5666376	122.7228035
2017	4.5885978	14.0342370	7.9537445	21.9879815	9.6212117	31.6091932	20.4280313	52.0372245	70.4411240	122.4783485
2018	4.5726856	13.9947192	7.9395183	21.9342375	9.6046442	31.5388817	20.4047933	51.9436750	70.3598450	122.3035200
2019	5.1256667	15.7860007	8.9424519	24.7284526	10.7856479	35.5141005	23.0904297	58.6045302	79.8431640	138.4476942
2020	5.0738761	15.6735801	8.8227939	24.4963740	10.6702585	35.1666325	22.9733103	58.1399428	79.4591154	137.5990582
2021	5.0362092	15.5739582	8.6520031	24.2259613	10.5399689	34.7659302	22.8279402	57.5938704	78.9651138	136.5589842
2022	4.9731543	15.5267225	8.6390118	24.1657343	10.5315065	34.6972408	22.7716337	57.4688745	79.0150820	136.4839565
2023	4.9368738	15.4150092	8.5905346	24.0055438	10.4723961	34.4779399	22.5369287	57.0148686	78.4355054	135.4503740
2024	4.8788115	15.3545385	8.6020725	23.9566110	10.4865109	34.4431219	22.4584964	56.9016183	78.4639828	135.3656011
2025	4.8760860	15.3286042	8.5969499	23.9255541	10.4802845	34.4058386	22.3762333	56.7820719	78.3716549	135.1537268
2026	5.2951728	16.6313778	9.3327723	25.9641501	11.3776173	37.3417674	24.2458934	61.5876608	85.1483558	146.7360166
2027	5.2699266	16.5339477	9.2880693	25.8220170	11.3230716	37.1450886	24.0950349	61.2401235	84.7348795	145.9750030
2028	5.2786774	16.5342307	9.3039824	25.8382131	11.3424770	37.1806901	24.1370595	61.3177496	84.8820699	146.1998195
2029	5.2600689	16.4464178	9.2711879	25.7176057	11.2920622	37.0096679	24.0503689	61.0600368	84.5784053	145.6384421
2030	5.2287315	16.3809636	9.2678748	25.6488384	11.2775123	36.9263507	24.0415951	60.9679458	84.5030171	145.4709629
2031	5.1599566	16.1973669	9.1571672	25.3545341	11.1833742	36.5379083	23.8606174	60.3985257	83.7808017	144.1793274
2032	5.1318599	16.1624922	9.1188897	25.2813819	11.1352504	36.4166323	23.8580324	60.2746647	83.7203779	143.9950426
2033	5.4863201	17.2772540	9.6973982	26.9746522	11.8393862	38.8140384	25.4854348	64.2994732	89.2473364	153.5468096
2034	5.4751151	17.2422664	9.6653825	26.9076489	11.7627189	38.6703678	25.4207473	64.0911151	88.9813409	153.0724560
2035	5.4267521	17.0883411	9.5666114	26.6549525	11.6364758	38.2914283	25.1796596	63.4710879	88.1409606	151.6120485

b) For the period 1968 through 1987, rates are for an interim facility.

c) 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

(in dollars per acre-foot)

Calendar Year	CALIFORNIA AQUEDUCT (continued)							
	Reach 18A Alamo Powerplant		Reach 22B Pearblossom Pumping Plant		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
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
1961	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1962	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1963	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1964	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1965	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1966	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1967	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1968	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1969	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1970	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1971	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
1972	0.0000000	0.0000000	14.2519509	27.5431181	-2.3717647	25.1713534	1.4212193	14.7123865
1973	0.0000000	0.0000000	4.4326545	17.7262422	-8.4298618	9.2963804	1.0210537	14.3146414
1974	0.0000000	0.0000000	3.4431782	15.7742225	-5.1043660	10.6698565	0.9241725	13.2552168
1975	0.0000000	0.0000000	3.1739313	15.4646769	-5.6510611	9.8136158	0.9362286	13.2269742
1976	0.0000000	0.0000000	3.9391330	17.7995236	-6.4449941	11.3545295	0.8622774	14.7226680
1977	0.0000000	0.0000000	3.4988957	21.1608243	-11.6274558	9.5333685	0.9076172	18.5695458
1978	0.0000000	0.0000000	4.1377503	17.2318705	-8.1314274	9.1004431	0.7314697	13.8255899
1979	0.0000000	0.0000000	5.1961178	22.6951308	-9.5825772	13.1125536	0.9504526	18.4494656
1980	0.0000000	0.0000000	4.3918283	23.5904803	-8.3797007	15.2107796	1.4269064	20.6255584
1981	0.0000000	0.0000000	4.0220251	22.7303223	-6.7353327	15.9949896	1.5667893	20.2750865
1982	0.0000000	0.0000000	3.7134691	22.2236443	-7.7626606	14.4609837	1.4904455	20.0006207
1983	0.0000000	0.0000000	1.6109184	11.7111334	-19.4689656	-7.7578322	1.4650678	11.5652828
1984	0.0000000	0.0000000	2.3659457	16.3817142	-29.7295856	-13.3478714	1.7101834	15.7259519
1985	0.0000000	0.0000000	3.4703984	25.0671295	-28.9831423	-3.9160128	2.2581389	23.8548700
1986	-1.6527780	36.1361828	6.8930659	43.0292487	-28.9765036	14.0527451	3.2954869	41.0844477
1987	-2.6696706	49.5613149	9.1645289	58.7258438	-29.9993634	28.7264804	4.6126629	56.8436484
1988	-3.0344056	36.0152515	6.8697401	42.8849916	-29.8966600	12.9883316	3.7109898	42.7606469
1989	-3.0343453	39.6959463	7.5622125	47.2581588	-29.9510834	17.3070754	3.8757640	46.6060556
1990	-3.0349507	38.6763914	7.4113763	46.0877677	-29.8628954	16.2248723	3.7377698	45.4491119
1991	-3.0364352	40.0127481	7.6716729	47.6844210	-29.9019840	17.7824370	3.8413735	46.8905568
1992	-3.0362383	40.5707657	7.7732373	48.3440030	-30.0023763	18.3416267	3.8851848	47.4921888
1993	-3.0298986	43.5136061	8.3272667	51.8408728	-29.7537133	22.0871595	4.1023749	50.6458796
1994	-3.0309372	48.4121722	9.2196640	57.6318362	-29.7698123	27.8620239	4.4564728	55.8995822
1995	-3.0147901	46.1314419	8.7910776	54.9225195	-29.7290341	25.1934854	4.2864780	53.4327100
1996	-3.0286237	50.2821100	9.5420159	59.8241259	-29.7434995	30.0806264	4.5845328	57.8952665
1997	-3.0218146	48.8459044	9.2530094	58.0989138	-29.5804018	28.5185120	4.4699397	56.3376587
1998	-3.0311462	53.5823132	10.1080157	63.6903289	-29.4964974	34.1938315	4.9367268	61.5501862
1999	-3.0270891	52.9913521	9.9783266	62.9696787	-29.6361992	33.3334795	4.9445985	60.9630397
2000	-3.0311613	55.9508358	10.5027190	66.4535548	-29.4581377	36.9954171	5.2040307	64.1860278
2001	-3.0315290	57.6781891	10.7975117	68.4757008	-29.4273822	39.0483186	5.3770148	66.0867329
2002	-3.0364869	75.2305155	14.0119992	89.2425147	-29.3093822	59.9331325	6.7048832	84.9718856
2003	-3.0372043	77.1439630	14.3603863	91.5043493	-29.3452439	62.1591054	6.8979904	87.0791577
2004	-3.0371002	80.1715674	14.9406683	95.1122357	-29.3315294	65.7807063	7.2853095	90.4939771
2005	-3.0384346	80.0904337	14.9567192	95.0471529	-29.2777215	65.7694314	7.4559664	90.5848347
2006	-3.0384073	81.3174839	15.2176245	96.5351084	-29.1627258	67.3723826	7.5317499	91.8876411
2007	-3.0388638	82.4202870	15.3886583	97.8089453	-29.1786074	68.6303379	7.6046204	93.0637712
2008	-3.0391741	83.5500911	15.5952505	99.1453416	-29.0845884	70.0607532	7.6607184	94.2499836
2009	-3.0401611	99.4195118	18.5137561	117.9332679	-29.1156385	88.8176294	8.7875278	111.2472007
2010	-3.0559460	99.4486270	18.5248857	117.9735127	-29.0954978	88.8780149	8.7919145	111.2964875
2011	-3.0565467	100.5340076	18.7244520	119.2584596	-29.1153011	90.1431585	8.8712212	112.4617755
2012	-3.0568283	101.2575042	18.8597974	120.1173016	-29.0713507	91.0459509	8.9456995	113.2600320
2013	-3.0570754	102.2057743	19.0426358	121.2484101	-29.0066897	92.2417204	9.0252226	114.2880723
2014	-3.0577443	103.0695792	19.1915208	122.2611000	-28.9539314	93.3071686	9.0764948	115.2038183
2015	-3.0576567	118.9408840	22.1170982	141.0579822	-28.9952523	112.0627299	10.2232219	132.2217626
2016	-3.0578580	119.6649455	22.2438453	141.9087908	-28.9134991	112.9952917	10.2587771	132.9815806
2017	-3.0582930	119.4200555	22.2000945	141.6201500	-28.8587227	112.7614273	10.2241105	132.7024590
2018	-3.0584500	119.2450700	22.1704784	141.4155484	-28.7884253	112.6271231	10.1945768	132.4980968
2019	-3.0587089	135.3889853	25.1610810	160.5500663	-28.7621660	131.7879003	11.2670931	149.7147873
2020	-3.0857060	134.5133522	25.0585201	159.5718723	-28.7294998	130.8423725	11.1041123	148.7031705
2021	-3.0859044	133.4730798	24.9256371	158.3987169	-28.7420302	129.6566867	11.0513725	147.6103567
2022	-3.0861024	133.3978541	24.9785247	158.3763788	-28.7494423	129.6269365	11.0724089	147.5563654
2023	-3.0861044	132.3642696	24.8372051	157.2014747	-28.7439251	128.4575496	11.0162326	146.4666066
2024	-3.0863748	132.2792263	24.8708193	157.1500456	-28.7278782	128.4221674	11.0297537	146.3953548
2025	-3.1147324	132.0389944	24.8558437	156.8948381	-28.6813270	128.2135111	11.0236935	146.1774203
2026	-3.1149176	143.6210990	27.0019719	170.6230709	-28.6354441	141.9876268	11.8757628	158.6117794
2027	-3.1151380	142.8598650	26.8714771	169.7313421	-28.5828206	141.1485215	11.8238078	157.7988108
2028	-3.1150738	143.0847457	26.9180433	170.0027890	-28.6022647	141.4005243	11.5933345	157.7931540
2029	-3.1154724	142.5229697	26.8219125	169.3448822	-28.6465149	140.6983673	11.4838571	157.1222992
2030	-3.1153933	142.3555696	26.8123930	169.1679626	-28.4925207	140.6754419	11.4058314	156.8767943
2031	-3.1157738	141.0635536	26.6122887	167.6758423	-28.2591149	139.4167274	11.2503484	155.4296758
2032	-3.1161653	140.8788773	26.5514412	167.4303185	-28.1712557	139.2590628	11.1239257	155.1189683
2033	-3.1166939	150.4301157	28.2903281	178.7204438	-28.1100403	150.6104035	11.7103572	165.2571668
2034	-3.1168724	149.9555836	28.1656895	178.1212731	-27.9721649	150.1491082	11.4085413	164.4809973
2035	-3.1172859	148.4947626	27.8467350	176.3414976	-27.9411723	148.4003253	11.0275242	162.6395727

OF TRANSPORTATION CHARGE[a]

(in dollars per acre-foot)

Calendar Year	CALIFORNIA AQUEDUCT (continued)							
	Reach 29G William E. Warne Powerplant		Reach 29J Castaic Powerplant		Reach 31A Las Perillas and Badger Hill Pumping Plants		Reach 33A Devil's Den, Sawtooth, and Polonio Pumping Plants and San Luis Obispo Powerplant	
	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate
	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)
1961	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0	0
1962	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0	0
1963	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0	0
1964	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0	0
1965	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0	0
1966	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0	0
1967	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0	0
1968	0.0000000	0.0000000	0.0000000	0.0000000	1.5014866	4.1182219	0	0
1969	0.0000000	0.0000000	0.0000000	0.0000000	1.2624065	3.0719381	0	0
1970	0.0000000	0.0000000	0.0000000	0.0000000	1.6309699	3.3588478	0	0
1971	0.0000000	0.0000000	0.0000000	0.0000000	1.4985537	2.7919286	0	0
1972	0.0000000	0.0000000	-2.9350830	11.7773035	1.7489056	3.2074977	0	0
1973	0.0000000	0.0000000	-6.8099448	7.5046966	1.4609575	2.9992858	0	0
1974	0.0000000	0.0000000	-7.4013274	5.8538894	1.4255635	2.8964935	0	0
1975	0.0000000	0.0000000	-6.5604921	6.6664821	1.0379624	2.5948624	0	0
1976	0.0000000	0.0000000	-6.7213324	8.0013356	1.5465478	3.2570573	0	0
1977	0.0000000	0.0000000	-30.6828669	-12.1133211	1.5544740	3.9204151	0	0
1978	0.0000000	0.0000000	-8.0476396	5.7779503	1.9022180	3.9335509	0	0
1979	0.0000000	0.0000000	-19.0478097	-0.5983441	1.5336852	4.3289836	0	0
1980	0.0000000	0.0000000	-20.5438586	0.0816998	1.5124754	3.6770033	0	0
1981	0.0000000	0.0000000	-9.9846574	10.2904291	1.5414290	4.7316477	0	0
1982	-2.1714430	17.8291777	-9.5987314	8.2304463	1.7386297	4.3664065	0	0
1983	-7.4896554	4.0756274	-32.6515465	-28.5759191	0.1315287	1.4101978	0	0
1984	-14.9847754	0.7411765	-15.8804776	-15.1393011	0.8331632	2.5713362	0	0
1985	-14.7594872	9.0953828	-31.2852762	-22.1898934	1.2864107	3.8787014	0	0
1986	-12.6634918	28.4209559	-24.3930192	4.0279367	2.6797302	7.1786060	0	0
1987	-14.2853257	42.5583227	-26.3086959	16.2496268	3.5982634	9.6831185	0	0
1988	-14.9991372	27.7615097	-26.7067081	1.0548016	2.5986382	7.2060208	0	0
1989	-15.0135157	31.5925399	-26.5506875	5.0418524	2.8712187	7.8772922	0	0
1990	-15.0469162	30.4021957	-26.3862717	4.0159240	2.8112845	7.7050522	0	0
1991	-15.1063932	31.7841636	-26.3687931	5.4153705	2.9137983	7.9593303	0	0
1992	-14.9775771	32.5146117	-26.2663939	6.2482178	2.9543420	8.0640096	0	0
1993	-15.1064354	35.5394442	-26.2634293	9.2760149	3.1597732	8.6009355	0	0
1994	-15.1672198	40.7323624	-26.2101819	14.5221805	3.5099551	9.5118366	0	0
1995	-15.0479435	38.3847665	-26.2650456	12.1197209	3.3417821	9.0915580	0	0
1996	-15.1377371	42.7575294	-26.2088217	16.5487077	3.6365902	9.8605469	0	0
1997	-14.9969480	41.3407107	-26.1701423	15.1705684	3.5232337	9.6082014	0	0
1998	-15.1183745	46.4318117	-26.1250338	20.3067779	3.8588755	10.4688569	0	0
1999	-15.0405320	45.9225077	-26.1565231	19.7659846	3.8079195	10.3691062	0	0
2000	-15.1327431	49.0532847	-26.1163958	22.9368889	4.0138004	10.9326655	0	0
2001	-15.1112672	50.9754657	-26.1230132	24.8524525	4.1294874	11.2527240	0	0
2002	-15.1456298	69.8262558	-26.1094860	43.7167698	5.3831832	14.5072203	0	0
2003	-15.1443268	71.9348309	-26.1098775	45.8249534	5.5117688	14.8339848	0	0
2004	-15.0969395	75.3970376	-26.0778959	49.3191417	5.7253757	15.3803149	0	0
2005	-15.1560119	75.4288228	-26.1175805	49.3112423	5.7174318	15.3600008	0	0
2006	-15.1157183	76.7719228	-26.1036401	50.6682827	5.8049102	15.5847333	0	0
2007	-15.1479882	77.9157830	-26.0922281	51.8235549	5.8893589	15.7992802	0	0
2008	-15.1377455	79.1122381	-26.0992038	53.0130343	5.9735898	16.0130880	0	0
2009	-15.1336285	96.1135722	-26.0946810	70.0188912	7.1189446	18.9503823	0	0
2010	-15.1008833	96.1956042	-26.1037067	70.0918975	7.1232357	18.9612293	0	0
2011	-15.1727169	97.2890586	-26.0790751	71.2099835	7.2016962	19.1632184	0	0
2012	-15.0343745	98.2256575	-26.1142926	72.1113649	7.2532297	19.2912133	0	0
2013	-15.1007918	99.1872805	-26.0891177	73.0981628	7.3238781	19.4368545	0	0
2014	-15.1454813	100.0583370	-26.1112338	73.9471032	7.3858328	19.5912125	0	0
2015	-15.1839539	117.0378087	-26.0716066	90.9662021	8.5371303	22.5387877	0	0
2016	-15.2318951	117.7496855	-26.0745553	91.6751302	8.5901432	22.6662080	0	0
2017	-15.2090885	117.4933705	-26.0288621	91.4645084	8.5746203	22.6088573	0	0
2018	-15.2552842	117.2428126	-26.0591568	91.1836558	8.5645487	22.5592679	0	0
2019	-15.2733345	134.4414528	-26.0636126	108.3778402	9.7381729	25.5241736	0	0
2020	-15.2356854	133.4674851	-26.0331511	107.4343340	9.6980130	25.3715931	0	0
2021	-15.2316312	132.3787255	-26.0522901	106.3264354	9.6459273	25.2198855	0	0
2022	-15.2477318	132.3086336	-26.0680153	106.2406183	9.6667291	25.1934516	0	0
2023	-15.1957558	131.2708508	-26.0257642	105.2450866	9.6112744	25.0262836	0	0
2024	-15.2674274	131.1279274	-26.0485745	105.0793529	9.6245174	24.9790559	0	0
2025	-15.3655604	130.8118599	-26.0604669	104.7513930	9.6186558	24.9472600	0	0
2026	-15.3872110	143.2245684	-26.0392739	117.1852945	10.4609496	27.0923274	0	0
2027	-15.3468098	142.4520010	-26.0571454	116.3948556	10.4097808	26.9437285	0	0
2028	-15.3346789	142.4584751	-26.0592508	116.3992243	10.4279837	26.9622144	0	0
2029	-15.2909256	141.8313736	-26.0844044	115.7469692	10.3904178	26.8368356	0	0
2030	-15.3067060	141.5700883	-26.0703551	115.4997332	10.3866282	26.7675918	0	0
2031	-15.2448038	140.1848720	-26.0450044	114.1398676	10.3082488	26.5056157	0	0
2032	-15.2795777	139.8393906	-26.0855175	113.7538731	10.3129148	26.4754070	0	0
2033	-15.2319813	150.0251855	-26.0596396	123.9655459	11.0237403	28.3009943	0	0
2034	-15.2722383	149.2087590	-26.0707350	123.1380240	11.0015097	28.2437761	0	0
2035	-15.2193437	147.4202290	-26.0481839	121.3720451	10.9028047	27.9911458	0	0

TABLE B-18: VARIABLE OMP&R COMPONENT OF

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1962	0	0	0	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	98,742	64,892	517,532	681,166	0	0	0
1981	21,692	0	21,692	126,954	142,035	570,292	839,281	0	0	0
1982	12,558	0	12,558	87,317	42,025	580,609	709,951	0	0	0
1983	2,554	0	2,554	11,335	7,509	206,289	225,133	0	0	0
1984	5,157	0	5,157	24,473	12,041	317,446	353,960	0	0	0
1985	9,769	0	9,769	88,661	111,862	517,662	718,185	0	0	0
1986	19,957	0	19,957	224,912	335,498	889,859	1,450,269	0	0	0
1987	20,102	0	20,102	304,400	492,885	1,123,530	1,920,815	0	0	0
1988	25,550	61,269	86,819	268,876	425,341	931,905	1,626,122	0	0	0
1989	30,080	77,837	107,917	310,392	471,549	1,049,052	1,830,993	0	0	0
1990	33,372	87,381	120,753	320,332	464,021	1,049,407	1,833,760	0	0	0
1991	40,693	94,946	135,639	364,323	483,820	1,109,516	1,957,659	0	0	0
1992	47,433	101,851	149,284	402,544	477,311	1,148,418	2,028,273	0	0	0
1993	57,479	115,926	173,405	466,070	529,610	1,253,667	2,249,347	215,024	391,222	606,246
1994	71,284	136,558	207,842	556,938	596,461	1,420,145	2,573,544	237,796	432,655	670,451
1995	75,345	145,991	221,336	568,860	568,860	1,354,429	2,492,149	227,289	413,538	640,827
1996	88,501	171,914	260,415	647,922	618,470	1,472,549	2,738,941	246,514	448,517	695,031
1997	91,771	171,067	262,838	656,949	599,823	1,428,148	2,684,920	240,205	437,039	677,244
1998	107,185	192,463	299,648	718,271	655,813	1,561,458	2,935,542	261,721	476,187	737,908
1999	112,421	195,132	307,553	708,871	647,230	1,541,025	2,897,126	259,228	471,649	730,877
2000	125,294	209,738	335,032	747,326	682,342	1,624,623	3,054,291	273,316	497,284	770,600
2001	135,029	220,702	355,731	768,646	701,807	1,670,971	3,141,424	281,318	511,841	793,159
2002	184,055	296,560	480,615	999,199	912,312	2,172,171	4,083,682	362,681	659,875	1,022,556
2003	196,708	311,719	508,427	1,022,649	933,724	2,223,151	4,179,524	370,850	674,738	1,045,588
2004	212,897	332,199	545,096	1,061,694	969,372	2,308,030	4,339,096	384,508	699,590	1,084,098
2005	220,941	330,301	551,242	1,060,238	968,044	2,304,867	4,333,149	384,000	698,665	1,082,665
2006	234,025	336,348	570,373	1,076,269	982,680	2,339,715	4,398,664	389,619	708,887	1,098,506
2007	247,083	342,060	589,143	1,091,741	996,807	2,373,351	4,461,899	394,982	718,646	1,113,628
2008	260,804	348,034	608,838	1,107,175	1,010,898	2,406,902	4,524,975	400,328	728,372	1,128,700
2009	323,192	415,708	738,900	1,317,041	1,202,516	2,863,133	5,382,690	473,760	861,976	1,335,736
2010	335,992	417,047	753,039	1,317,827	1,203,233	2,864,842	5,385,902	474,031	862,470	1,336,501
2011	354,123	424,699	778,822	1,332,205	1,216,361	2,896,096	5,444,662	479,080	871,657	1,350,737
2012	371,474	428,701	800,175	1,341,647	1,224,982	2,916,624	5,483,253	482,280	877,480	1,359,760
2013	390,258	434,226	824,484	1,354,591	1,236,800	2,944,764	5,536,155	485,921	884,105	1,370,026
2014	409,286	439,147	848,433	1,365,944	1,247,167	2,969,444	5,582,555	489,781	891,126	1,380,907
2015	491,695	508,859	1,000,554	1,576,899	1,439,778	3,428,041	6,444,718	563,469	1,025,199	1,588,668
2016	511,158	512,868	1,024,026	1,586,613	1,448,647	3,449,158	6,484,418	566,656	1,030,995	1,597,651
2017	526,863	513,037	1,039,900	1,583,769	1,446,050	3,442,976	6,472,795	565,222	1,028,386	1,593,608
2018	543,175	513,330	1,056,505	1,581,334	1,443,826	3,437,681	6,462,841	563,982	1,026,131	1,590,113
2019	637,377	584,739	1,222,116	1,795,598	1,639,459	3,903,474	7,338,531	638,104	1,160,993	1,799,097
2020	654,522	583,368	1,237,890	1,787,426	1,631,999	3,885,709	7,305,134	634,290	1,154,052	1,788,342
2021	651,903	580,525	1,232,428	1,777,594	1,623,021	3,864,336	7,264,951	630,497	1,147,152	1,777,649
2022	654,129	581,865	1,235,994	1,781,111	1,626,232	3,871,981	7,279,324	629,836	1,145,950	1,775,786
2023	651,087	578,928	1,230,015	1,770,208	1,616,277	3,848,280	7,234,765	625,657	1,138,345	1,764,002
2024	652,740	580,012	1,232,752	1,771,872	1,617,797	3,851,898	7,241,567	624,476	1,136,198	1,760,674
2025	653,071	579,835	1,232,906	1,770,020	1,616,105	3,847,869	7,233,994	623,681	1,134,751	1,758,432
2026	710,429	630,892	1,341,321	1,923,562	1,756,296	4,181,657	7,861,515	677,308	1,232,322	1,909,630
2027	707,065	627,996	1,335,061	1,913,383	1,747,002	4,159,529	7,819,914	673,594	1,225,562	1,899,156
2028	708,387	629,235	1,337,622	1,915,434	1,748,874	4,163,987	7,828,295	674,056	1,226,403	1,900,459
2029	705,946	627,232	1,333,178	1,907,215	1,741,371	4,146,121	7,794,707	670,921	1,220,700	1,891,621
2030	705,828	627,614	1,333,442	1,905,139	1,739,475	4,141,606	7,786,220	669,190	1,217,550	1,886,740
2031	700,503	622,877	1,323,380	1,889,351	1,725,060	4,107,285	7,721,696	662,640	1,205,635	1,868,275
2032	700,820	623,160	1,323,980	1,889,665	1,725,347	4,107,968	7,722,980	661,885	1,204,260	1,866,145
2033	749,124	666,112	1,415,236	2,019,912	1,844,267	4,391,112	8,255,291	707,525	1,287,299	1,994,824
2034	747,613	664,769	1,412,382	2,015,839	1,840,548	4,382,258	8,238,645	706,095	1,284,697	1,990,792
2035	740,906	658,804	1,399,710	1,997,752	1,824,035	4,342,941	8,164,728	699,779	1,273,205	1,972,984
TOTAL	18,880,652		38,216,233		59,088,428		268,017,420		38,723,304	
		19,335,581		62,779,255		146,149,737		21,283,095		60,006,399

TRANSPORTATION CHARGE FOR EACH CONTRACTOR[a]

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA									
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	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)
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	27,764	63,140	4,671	0	34,580	842,161	2,491	3,920	134,295	1,113,022
1976	38,108	70,851	5,131	0	94,653	965,096	2,737	4,910	100,597	1,282,083
1977	19,896	26,387	1,746	0	84,310	488,473	3,620	2,602	42,779	669,813
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	51,044	88,746	1,935	0	121,602	1,731,588	4,762	7,766	163,301	2,170,744
1981	60,092	130,799	18,692	0	261,893	2,406,874	7,337	9,018	266,186	3,160,891
1982	55,454	107,739	949	0	141,418	2,325,038	4,599	6,697	48,748	2,690,642
1983	17,852	54,855	0	0	14,359	962,786	4,540	3,324	1,286	1,059,002
1984	32,761	78,392	0	0	160,289	1,804,158	5,389	6,358	9,983	2,097,330
1985	46,928	119,896	13,472	0	238,671	2,674,300	8,814	9,159	284,611	3,395,851
1986	95,483	226,064	17,096	0	477,787	5,284,424	16,646	15,231	476,471	6,609,202
1987	122,975	312,762	18,255	0	682,957	7,375,960	24,339	20,943	721,056	9,279,247
1988	91,517	246,495	13,822	0	539,537	5,816,913	18,430	16,422	545,975	7,289,111
1989	100,041	278,338	15,018	0	607,729	6,493,249	20,024	18,574	593,219	8,126,192
1990	97,854	282,370	14,681	0	625,092	6,514,848	19,576	18,476	579,911	8,152,808
1991	101,083	291,127	15,136	0	644,359	6,710,113	20,182	19,052	597,896	8,398,948
1992	102,413	294,827	15,329	0	652,546	6,795,494	20,438	19,299	605,496	8,505,842
1993	109,232	313,955	16,323	0	694,837	7,235,438	21,765	20,578	644,778	9,056,906
1994	120,800	346,309	18,005	0	766,380	7,980,033	24,008	22,740	711,223	9,989,498
1995	115,463	331,762	17,250	0	734,100	7,640,457	22,999	21,749	681,349	9,565,129
1996	125,229	359,123	18,672	0	794,664	8,272,709	24,896	23,562	737,539	10,356,394
1997	122,024	351,103	18,255	0	776,792	8,080,768	24,340	22,890	721,069	10,117,241
1998	132,955	381,396	19,830	0	844,013	8,783,381	26,440	24,914	783,282	10,996,211
1999	131,688	378,580	19,684	0	837,713	8,711,699	26,245	24,595	777,501	10,907,705
2000	138,845	399,219	20,756	0	883,265	9,180,753	27,675	25,941	819,885	11,496,339
2001	142,909	411,011	21,369	0	909,431	9,454,113	28,493	26,662	844,103	11,838,091
2002	184,241	526,457	27,372	0	1,165,000	12,121,824	36,496	34,407	1,081,199	15,176,996
2003	188,391	537,891	27,967	0	1,190,551	12,396,115	37,289	35,179	1,104,682	15,518,065
2004	195,330	557,090	28,965	0	1,233,223	12,846,056	38,619	36,469	1,144,110	16,079,862
2005	195,072	556,376	28,928	0	1,231,751	12,833,714	38,570	36,421	1,142,644	16,063,476
2006	197,926	564,295	29,340	0	1,249,417	13,023,316	39,120	36,954	1,158,909	16,299,277
2007	200,651	571,803	29,729	0	1,265,930	13,193,614	39,640	37,469	1,174,326	16,513,162
2008	203,366	579,279	30,119	0	1,282,471	13,366,887	40,158	37,982	1,189,680	16,729,942
2009	240,670	682,674	35,494	0	1,511,368	15,757,795	47,326	44,965	1,402,026	19,722,318
2010	240,807	683,052	35,514	0	1,512,163	15,765,871	47,352	44,991	1,402,802	19,732,552
2011	243,373	690,180	35,885	0	1,527,893	15,929,749	47,846	45,470	1,417,440	19,937,836
2012	244,998	694,592	36,114	0	1,537,672	16,032,808	48,152	45,784	1,426,501	20,066,621
2013	246,848	698,918	36,339	0	1,547,532	16,142,872	48,452	46,215	1,435,388	20,202,564
2014	248,808	704,250	36,616	0	1,559,361	16,266,820	48,821	46,592	1,446,337	20,357,605
2015	286,243	807,895	42,005	0	1,788,554	18,661,532	56,006	53,612	1,659,196	23,355,043
2016	287,861	812,189	42,228	0	1,798,110	18,762,194	56,304	53,935	1,668,014	23,480,835
2017	287,133	809,775	42,103	0	1,792,871	18,709,930	56,137	53,840	1,663,057	23,414,846
2018	286,503	807,495	41,984	0	1,787,980	18,662,600	55,979	53,706	1,658,374	23,354,621
2019	324,157	910,852	47,358	0	2,016,858	21,055,313	63,144	60,764	1,870,642	26,349,088
2020	322,219	904,366	47,021	0	2,002,307	20,893,909	62,695	60,418	1,857,319	26,150,254
2021	320,292	898,617	46,722	0	1,988,971	20,730,439	62,296	60,065	1,845,514	25,952,916
2022	319,956	895,892	46,580	0	1,983,091	20,678,645	62,107	60,155	1,839,917	25,886,343
2023	317,833	889,446	46,245	0	1,968,722	20,533,961	61,660	59,725	1,826,679	25,704,271
2024	317,234	885,956	46,063	0	1,961,354	20,474,523	61,418	59,712	1,819,513	25,625,773
2025	316,830	884,460	45,986	0	1,957,985	20,442,968	61,314	59,579	1,816,439	25,585,561
2026	344,073	959,630	49,895	0	2,124,342	22,184,055	66,526	64,616	1,970,818	27,763,955
2027	342,185	954,009	49,602	0	2,111,944	22,058,299	66,136	64,205	1,959,273	27,605,653
2028	342,420	954,025	49,603	0	2,112,211	22,067,164	66,137	64,157	1,959,306	27,615,023
2029	340,828	948,958	49,339	0	2,101,199	21,957,865	65,785	63,762	1,948,900	27,476,636
2030	339,948	945,182	49,143	0	2,093,292	21,887,562	65,524	63,568	1,941,145	27,385,364
2031	336,621	934,588	48,592	0	2,070,144	21,650,169	64,790	62,913	1,919,388	27,087,205
2032	336,238	932,575	48,488	0	2,065,685	21,601,761	64,650	62,875	1,915,255	27,027,527
2033	359,423	996,898	51,832	0	2,207,739	23,074,178	69,109	67,208	2,047,355	28,873,742
2034	358,696	994,879	51,726	0	2,203,037	23,019,935	68,969	67,073	2,043,208	28,807,523
2035	355,488	985,998	51,265	0	2,183,223	22,809,338	68,353	66,471	2,024,968	28,545,104
TOTAL	12,236,885	33,714,351	1,781,338	0	73,185,387	770,646,047	2,317,382	2,259,622	68,950,423	965,091,435

a) Unadjusted for prior overpayments or underpayments of charges.

TABLE B - 18: VARIABLE OMP&R COMPONENT OF

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	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	99,186	0	108,253	12,758	170,111	6,392	0	0	136,067	53,485
1976	385,090	0	135,276	17,835	213,595	8,163	0	0	139,356	68,933
1977	197,849	0	0	23,468	0	1,960	1,693	0	236,741	85,762
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	1,390,117	99	256,759	29,229	401,036	3,666	94,362	0	0	16,503
1981	1,484,971	59,282	275,150	33,755	431,875	23,760	90,920	0	256,256	57,886
1982	930,895	78,321	296,153	27,512	466,698	0	233,348	0	121,603	182,193
1983	332,913	-270,784	170,363	10,668	269,356	384	0	0	-46,500	-5,695
1984	457,783	-173,753	258,306	18,478	409,543	14	0	0	-74,161	-102,192
1985	800,461	-275,177	425,865	35,646	676,813	0	0	33,648	-28,939	-19,689
1986	1,355,649	56,391	783,562	64,931	1,247,847	21,826	0	107,289	134,217	133,501
1987	1,873,070	248,360	1,141,102	88,852	1,849,863	4,957	0	148,685	334,376	241,303
1988	1,405,602	17,521	885,661	76,249	1,458,090	3,603	0	136,858	215,087	109,103
1989	1,582,200	90,552	1,033,678	94,516	1,724,922	3,971	0	166,723	288,682	145,379
1990	1,575,211	76,367	1,064,628	100,240	1,755,944	3,869	0	177,911	350,457	162,249
1991	1,037,250	109,926	1,101,509	110,391	1,816,777	3,999	2,422,369	200,064	448,117	182,092
1992	1,093,058	134,868	1,116,748	117,477	1,841,905	77,083	2,455,874	228,210	497,974	192,220
1993	1,216,727	212,141	1,197,524	131,934	1,975,138	87,026	2,633,516	271,959	642,737	236,775
1994	1,403,032	350,799	1,331,295	153,301	2,195,773	101,665	2,927,697	332,833	865,116	305,369
1995	1,383,942	308,338	1,268,710	152,409	2,092,546	101,489	2,790,063	345,985	831,386	282,165
1996	1,588,914	442,298	1,381,936	172,891	2,279,300	115,649	3,039,064	412,314	1,058,837	345,326
1997	1,621,684	424,972	1,342,085	174,586	2,213,569	112,345	2,951,425	434,729	1,066,591	335,376
1998	1,864,665	594,968	1,471,248	198,714	2,426,601	123,239	3,235,469	514,391	1,354,076	411,694
1999	1,928,885	604,543	1,454,599	203,706	2,399,144	121,880	3,198,860	545,811	1,393,340	410,667
2000	2,126,131	731,021	1,535,077	222,619	2,531,882	128,688	3,375,839	615,459	1,627,800	466,141
2001	2,295,592	832,110	1,581,790	237,268	2,608,924	132,658	3,478,566	669,068	1,811,842	504,504
2002	3,129,590	1,534,152	2,061,501	319,488	3,400,140	173,032	4,533,520	917,813	2,924,737	793,515
2003	3,348,047	1,681,959	2,113,751	338,109	3,486,317	177,430	4,648,421	987,444	3,182,545	842,879
2004	3,623,755	2,229,225	2,197,092	362,380	3,623,776	184,396	4,831,702	1,074,301	3,525,845	913,036
2005	3,764,251	1,968,800	2,195,589	373,059	3,621,297	184,208	4,828,395	1,121,266	3,683,089	933,924
2006	4,017,083	2,038,941	2,229,961	390,001	3,677,988	187,030	4,903,983	1,192,115	3,934,547	980,943
2007	4,269,370	2,101,757	2,259,386	406,398	3,726,521	189,568	4,968,696	1,262,679	4,172,724	1,023,965
2008	4,528,415	2,166,644	2,290,258	423,350	3,777,435	192,165	5,036,584	1,335,130	4,427,839	700,608
2009	5,627,145	2,883,729	2,724,259	517,138	4,493,258	228,665	5,991,011	1,654,342	5,826,436	1,389,108
2010	5,867,468	2,908,812	2,725,189	530,881	4,494,790	228,731	5,993,055	1,720,461	6,043,706	1,422,048
2011	6,253,217	2,955,214	2,754,872	550,378	4,543,748	231,228	6,058,329	1,739,238	6,346,078	1,478,348
2012	6,622,240	2,992,622	2,774,710	568,156	4,576,469	232,892	6,101,958	1,751,755	6,628,146	1,529,572
2013	7,011,316	3,033,574	2,800,840	587,448	4,619,564	235,073	6,159,420	1,768,161	6,936,577	1,586,556
2014	7,400,396	3,068,807	2,824,231	606,416	4,658,149	237,059	6,210,863	1,783,104	7,240,635	1,642,206
2015	8,920,567	3,775,097	3,258,439	715,868	5,374,308	273,564	7,165,746	2,057,679	8,965,019	2,017,129
2016	9,333,866	3,804,518	3,278,092	736,508	5,406,726	275,229	7,208,967	2,070,204	9,491,605	2,083,634
2017	9,673,024	3,795,777	3,271,425	751,297	5,395,729	274,667	7,194,304	2,065,968	9,923,006	2,128,935
2018	10,016,587	3,784,122	3,266,699	766,471	5,387,932	274,265	7,183,909	2,062,939	10,361,696	2,175,957
2019	11,778,840	4,497,680	3,708,707	888,646	6,116,957	311,395	8,155,945	2,342,229	12,651,638	2,604,129
2020	12,106,200	4,458,525	3,686,111	901,581	6,079,689	309,381	8,106,251	2,327,080	13,084,237	2,643,015
2021	12,653,249	4,412,548	3,659,009	913,169	6,034,992	306,988	8,046,654	2,309,083	13,302,777	2,686,486
2022	13,286,426	4,408,986	3,658,494	918,582	6,034,139	306,815	8,045,520	2,307,783	13,299,725	2,753,276
2023	13,818,830	4,367,671	3,631,353	911,769	5,989,376	304,439	7,985,835	2,289,901	13,179,745	2,795,236
2024	14,444,891	4,360,794	3,630,166	911,470	5,987,417	304,242	7,983,223	2,288,431	13,176,116	2,861,246
2025	15,052,446	4,347,184	3,624,272	909,991	5,977,694	303,690	7,970,258	2,284,275	13,154,706	2,923,267
2026	17,248,894	4,863,191	3,941,392	989,612	6,500,739	330,329	8,667,651	2,484,645	14,567,930	3,316,832
2027	18,028,915	4,830,385	3,920,793	984,442	6,466,763	328,578	8,622,352	2,471,476	14,481,840	3,376,273
2028	18,930,113	4,830,567	3,927,064	986,016	6,477,107	329,095	8,636,142	2,475,366	14,507,693	3,461,485
2029	19,725,179	4,803,499	3,911,868	982,200	6,452,041	327,803	8,602,721	2,465,647	14,435,653	3,523,087
2030	19,702,012	4,793,239	3,907,781	981,175	6,445,300	327,418	8,593,733	2,462,752	14,433,302	3,601,291
2031	19,523,196	4,736,804	3,873,313	972,522	6,388,450	324,446	8,517,932	2,440,399	14,304,156	3,658,295
2032	19,497,637	4,720,786	3,867,641	971,096	6,379,095	324,020	8,505,460	2,437,205	14,287,980	3,743,284
2033	20,819,528	5,144,571	4,128,443	1,036,579	6,809,251	345,991	9,078,999	2,602,440	15,452,628	4,144,800
2034	20,753,853	5,110,227	4,114,600	1,033,103	6,786,420	344,897	9,048,560	2,594,231	15,405,300	4,228,199
2035	20,551,675	5,036,939	4,073,490	1,022,781	6,718,612	341,538	8,958,149	2,568,959	15,225,873	4,273,929
TOTAL	424,414,544	131,100,506	132,513,980	27,846,509	218,286,794	10,456,881	275,565,830	73,058,438	356,774,434	85,118,594

TRANSPORTATION CHARGE FOR EACH CONTRACTOR[a]

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC & WCD	Total	South Bay	
	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
1962	0	0	0	0	0	0	0	0	0	36,970
1963	0	0	0	0	0	0	0	0	0	57,711
1964	0	0	0	0	0	0	0	0	0	74,134
1965	0	0	0	0	0	0	0	0	0	142,609
1966	0	0	0	0	0	0	0	0	0	192,605
1967	0	0	0	0	0	0	0	0	0	236,998
1968	0	0	0	0	0	0	0	0	0	1,117,913
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	3,887,151	0	4,473,403	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	-841,568	0	-294,095	0	0	0	0	0	1,101,767
1978	0	3,844,052	0	4,992,899	0	0	0	0	0	7,752,522
1979	0	4,019,308	0	5,772,423	0	0	0	0	0	9,861,400
1980	0	5,362,248	0	7,554,019	0	0	0	0	0	10,425,874
1981	0	10,937,016	0	13,650,871	0	0	0	0	0	17,672,735
1982	0	7,539,678	0	9,876,401	0	0	0	0	0	13,289,552
1983	0	-6,675,224	0	-6,214,519	0	0	0	0	0	-4,927,830
1984	0	-7,792,225	0	-6,998,207	0	0	0	0	0	-4,541,760
1985	0	-11,091,557	0	-9,442,929	0	0	0	0	0	-5,319,124
1986	0	6,175,469	0	10,080,682	0	0	0	0	0	18,160,110
1987	0	25,117,612	0	31,048,180	0	0	0	0	0	42,268,344
1988	38,965	7,156,147	792	11,503,678	0	0	0	0	0	20,505,730
1989	51,922	11,754,626	7,563	16,944,734	0	0	0	0	0	27,009,836
1990	48,673	10,422,712	9,036	15,747,297	0	0	0	0	0	25,854,618
1991	60,460	12,113,439	24,191	19,630,584	0	0	0	0	0	30,122,830
1992	69,697	13,345,877	39,688	21,210,679	0	0	0	0	0	31,894,078
1993	92,766	17,633,143	68,396	26,399,782	0	0	0	0	0	38,485,686
1994	128,165	24,508,287	127,865	34,731,197	0	0	0	0	0	48,172,532
1995	125,967	21,834,857	138,878	31,656,735	0	0	0	0	0	44,576,176
1996	264,710	28,438,207	225,485	39,764,931	0	0	0	0	0	53,815,712
1997	273,779	27,312,639	264,728	38,528,508	0	0	0	0	0	52,270,751
1998	355,615	35,024,122	420,681	47,995,483	0	0	0	0	0	62,964,792
1999	373,335	34,890,450	445,738	47,970,958	0	0	0	0	0	62,814,219
2000	443,945	39,902,551	540,268	54,247,421	0	0	0	0	0	69,903,683
2001	509,972	43,365,640	586,885	58,614,819	0	0	0	0	0	74,743,224
2002	846,255	71,614,340	962,987	93,211,070	0	0	0	0	0	113,974,919
2003	943,576	75,891,343	1,018,273	98,660,094	0	0	0	0	0	119,911,698
2004	1,069,593	82,218,298	1,101,693	106,955,092	0	0	0	0	0	129,003,244
2005	1,137,810	83,591,925	1,116,811	108,520,424	0	0	0	0	0	130,550,956
2006	1,165,542	87,246,873	1,143,884	113,108,891	0	0	0	0	0	135,475,711
2007	1,187,304	90,530,340	1,166,932	117,265,640	0	0	0	0	0	139,943,472
2008	1,212,051	94,063,243	1,190,757	121,344,479	0	0	0	0	0	144,336,934
2009	1,536,544	123,108,407	1,530,852	157,510,894	0	0	0	0	0	184,690,538
2010	1,537,590	125,170,748	1,532,356	160,175,835	0	0	0	0	0	187,383,829
2011	1,559,476	128,389,776	1,554,595	164,414,497	0	0	0	0	0	191,926,554
2012	1,575,095	131,157,220	1,572,800	168,083,635	0	0	0	0	0	195,793,444
2013	1,595,783	134,310,873	1,592,408	172,237,593	0	0	0	0	0	200,170,822
2014	1,614,214	137,287,930	1,609,497	176,183,507	0	0	0	0	0	204,353,007
2015	1,938,687	168,010,796	1,949,682	214,422,581	0	0	0	0	0	246,811,564
2016	1,954,819	171,099,275	1,963,877	218,707,320	0	0	0	0	0	251,294,250
2017	1,950,774	172,425,687	1,959,434	220,810,027	0	0	0	0	0	253,331,176
2018	1,948,448	173,824,802	1,953,970	223,007,797	0	0	0	0	0	255,471,877
2019	2,279,931	206,527,225	2,297,875	264,161,197	0	0	0	0	0	300,870,029
2020	2,263,572	206,913,382	2,278,852	265,157,876	0	0	0	0	0	301,639,496
2021	2,243,060	206,327,926	2,256,789	265,152,730	0	0	0	0	0	301,380,674
2022	2,242,546	207,622,641	2,255,152	267,140,085	0	0	0	0	0	303,317,532
2023	2,222,315	207,076,946	2,235,032	266,808,448	0	0	0	0	0	302,741,501
2024	2,221,704	208,312,376	2,231,829	268,713,905	0	0	0	0	0	304,574,671
2025	2,218,094	209,253,286	2,225,331	270,244,494	0	0	0	0	0	306,055,387
2026	2,456,386	233,775,510	2,473,901	301,617,012	0	0	0	0	0	340,493,433
2027	2,441,870	233,582,137	2,458,183	301,994,007	0	0	0	0	0	340,653,791
2028	2,446,229	235,145,150	2,458,281	304,610,308	0	0	0	0	0	343,291,707
2029	2,434,081	235,169,416	2,445,360	305,278,555	0	0	0	0	0	343,774,697
2030	2,433,685	236,265,244	2,440,347	306,387,279	0	0	0	0	0	344,779,045
2031	2,411,909	240,366,986	2,413,021	309,931,429	0	0	0	0	0	347,931,985
2032	2,409,182	246,343,653	2,405,506	315,892,545	0	0	0	0	0	353,833,177
2033	2,605,559	273,938,984	2,609,609	348,717,382	0	0	0	0	0	389,256,475
2034	2,597,579	279,749,995	2,593,114	354,360,078	0	0	0	0	0	394,809,420
2035	2,567,326	283,099,320	2,557,681	356,996,272	0	0	0	0	0	397,078,798
TOTAL	68,106,560	6,376,884,840	68,456,865	8,248,584,775	0	0	0	0	0	9,579,916,262

TABLE B-19: TOTAL TRANSPORTATION

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1962	0	0	0	11,750	43,787	0	55,537	0	0	0
1963	0	0	0	153,066	189,194	456,425	798,685	0	0	0
1964	0	0	0	173,772	267,039	633,130	1,073,941	9,089	17,998	27,087
1965	0	0	0	249,438	369,432	1,176,729	1,795,599	14,973	29,020	43,993
1966	18,445	0	18,445	275,931	380,251	1,434,828	2,091,010	24,444	46,705	71,149
1967	42,393	0	42,393	351,838	459,118	1,707,493	2,518,449	43,108	81,311	124,419
1968	130,933	0	130,933	397,738	560,106	2,011,497	2,969,341	69,493	130,171	199,664
1969	257,834	0	257,834	453,462	495,859	2,111,420	3,060,741	124,641	232,046	356,687
1970	280,737	0	280,737	467,476	487,543	2,231,657	3,186,676	137,768	256,352	394,120
1971	230,704	0	230,704	428,449	506,921	2,198,917	3,134,287	138,963	258,640	397,603
1972	228,234	0	228,234	514,715	633,145	2,349,520	3,497,380	145,217	270,296	415,513
1973	224,366	32,157	256,523	479,241	503,976	2,367,782	3,350,999	142,299	264,963	407,262
1974	243,826	33,759	277,585	502,584	519,105	2,535,558	3,557,247	143,652	267,509	411,161
1975	240,944	37,174	278,118	550,959	559,921	2,439,192	3,550,072	160,306	298,277	458,583
1976	274,864	41,803	316,667	641,272	689,006	2,529,813	3,860,091	272,595	505,641	778,236
1977	297,253	46,143	343,396	604,587	667,728	2,505,902	3,778,217	283,424	526,078	809,502
1978	279,479	50,295	329,774	664,633	652,079	2,828,447	4,145,159	293,578	544,969	838,547
1979	293,121	54,420	347,541	721,675	689,967	2,841,691	4,253,333	290,056	538,592	828,648
1980	314,838	68,911	383,749	838,401	820,085	3,056,990	4,715,476	315,843	586,301	902,144
1981	350,032	86,654	436,686	804,694	836,675	2,956,651	4,598,020	339,433	629,919	969,352
1982	441,967	104,801	546,768	829,701	799,912	3,221,199	4,850,812	337,443	626,362	963,805
1983	382,566	145,836	528,402	846,257	851,203	3,872,210	5,569,670	360,544	669,025	1,029,569
1984	505,992	216,447	722,439	1,108,057	1,026,078	5,617,982	7,752,117	393,520	729,917	1,123,437
1985	750,297	353,650	1,103,947	1,602,594	1,776,161	6,802,885	10,181,640	431,461	800,007	1,231,468
1986	1,025,772	677,158	1,702,930	2,048,923	2,475,244	7,155,010	11,679,177	454,081	841,840	1,295,921
1987	1,509,764	1,465,411	2,975,175	2,101,227	2,656,805	7,036,666	11,794,698	506,543	938,629	1,445,172
1988	2,318,088	3,342,385	5,660,473	2,118,473	2,667,868	6,933,052	11,719,393	523,581	970,066	1,493,647
1989	2,371,259	3,456,162	5,827,421	2,205,945	2,741,022	7,154,259	12,101,226	513,456	951,390	1,464,846
1990	2,389,992	3,501,542	5,891,534	2,298,291	2,799,132	7,344,196	12,441,619	518,251	960,237	1,478,488
1991	2,409,951	3,512,426	5,922,377	2,406,488	2,806,384	7,412,760	12,625,632	522,316	967,738	1,490,054
1992	2,428,122	3,524,129	5,952,251	2,496,622	2,738,954	7,433,797	12,669,373	527,686	977,651	1,505,337
1993	2,449,145	3,543,666	5,992,811	2,609,097	2,801,893	7,522,318	12,933,308	1,274,302	2,342,523	3,616,825
1994	2,471,633	3,566,536	6,038,169	2,732,424	2,840,806	7,637,335	13,210,565	1,282,441	2,357,987	3,640,428
1995	2,490,312	3,606,500	6,096,812	2,825,698	2,824,280	7,597,973	13,247,951	1,275,374	2,344,816	3,620,190
1996	2,510,172	3,643,051	6,153,223	2,925,674	2,845,119	7,647,607	13,418,400	1,285,192	2,363,240	3,648,432
1997	2,520,348	3,641,124	6,161,472	2,960,972	2,805,107	7,552,328	13,318,407	1,270,738	2,336,732	3,607,470
1998	2,540,754	3,658,645	6,199,399	2,986,391	2,828,322	7,607,632	13,422,345	1,281,533	2,357,001	3,638,534
1999	2,543,370	3,646,348	6,189,718	2,900,348	2,749,759	7,420,575	13,070,682	1,253,444	2,305,808	3,559,252
2000	2,562,158	3,660,300	6,222,458	2,918,851	2,766,658	7,460,824	13,146,333	1,261,650	2,321,135	3,582,785
2001	2,571,348	3,662,887	6,234,235	2,893,405	2,743,466	7,405,928	13,042,799	1,254,630	2,308,587	3,563,217
2002	2,620,326	3,732,500	6,352,826	3,079,981	2,913,839	7,811,672	13,805,492	1,326,050	2,440,909	3,766,959
2003	2,631,241	3,739,271	6,370,512	3,082,963	2,917,880	7,829,783	13,830,626	1,319,819	2,429,814	3,749,633
2004	2,648,655	3,755,468	6,404,123	3,062,951	2,899,669	7,786,810	13,749,430	1,316,216	2,423,726	3,739,942
2005	2,657,726	3,746,882	6,404,608	3,037,687	2,876,604	7,731,893	13,646,184	1,307,786	2,408,368	3,716,154
2006	2,668,557	3,741,597	6,410,154	3,013,356	2,854,389	7,679,003	13,546,748	1,305,838	2,405,196	3,711,034
2007	2,678,972	3,736,337	6,415,309	2,989,781	2,832,866	7,627,764	13,450,411	1,298,545	2,392,090	3,690,635
2008	2,689,915	3,731,975	6,421,890	2,968,431	2,813,370	7,581,360	13,363,161	1,291,987	2,380,318	3,672,305
2009	2,747,492	3,787,812	6,535,304	3,132,080	2,962,809	7,937,248	14,032,137	1,354,135	2,495,542	3,849,677
2010	2,758,258	3,781,148	6,539,406	3,104,620	2,937,735	7,877,555	13,919,910	1,345,053	2,479,022	3,824,075
2011	2,772,743	3,778,727	6,551,470	3,084,291	2,919,121	7,832,814	13,836,226	1,338,780	2,467,743	3,806,523
2012	2,786,909	3,773,922	6,560,831	3,062,872	2,899,562	7,786,257	13,748,691	1,331,924	2,455,368	3,787,292
2013	2,760,252	3,728,062	6,488,314	2,783,323	2,642,886	7,050,634	12,476,843	1,276,264	2,354,227	3,630,491
2014	2,781,678	3,732,347	6,514,025	2,756,152	2,594,914	6,901,275	12,252,341	1,270,374	2,342,160	3,612,534
2015	2,821,599	3,758,753	6,580,352	2,773,366	2,581,353	6,646,535	12,001,254	1,290,784	2,381,143	3,671,927
2016	2,812,110	3,751,676	6,563,786	2,724,979	2,530,601	6,406,386	11,661,966	1,271,846	2,346,333	3,618,179
2017	2,785,898	3,734,503	6,520,401	2,630,318	2,443,906	6,152,944	11,227,168	1,231,734	2,272,669	3,504,403
2018	2,722,053	3,735,418	6,457,471	2,587,799	2,403,641	6,027,841	11,019,281	1,216,598	2,244,557	3,461,155
2019	2,762,139	3,798,678	6,560,817	2,730,236	2,533,832	6,318,420	11,582,488	1,280,076	2,362,020	3,642,096
2020	2,763,580	3,787,021	6,550,601	2,671,289	2,479,530	6,181,326	11,332,145	1,261,661	2,328,270	3,589,931
2021	2,758,654	3,784,102	6,542,756	2,629,805	2,439,951	6,077,128	11,146,884	1,256,298	2,318,297	3,574,595
2022	2,752,141	3,775,504	6,527,645	2,631,546	2,441,366	6,077,914	11,150,826	1,253,146	2,312,405	3,565,551
2023	2,748,021	3,740,328	6,488,349	2,619,943	2,430,746	6,050,768	11,101,457	1,248,214	2,303,255	3,551,469
2024	2,745,978	3,738,964	6,484,942	2,619,441	2,430,159	6,048,105	11,097,705	1,236,304	2,281,165	3,517,469
2025	2,737,701	3,735,364	6,473,065	2,616,764	2,427,537	6,040,261	11,084,562	1,234,966	2,278,661	3,513,627
2026	2,791,223	3,783,024	6,574,247	2,770,356	2,567,771	6,373,994	11,712,121	1,181,750	2,180,412	3,362,162
2027	2,784,807	3,775,712	6,560,519	2,758,356	2,556,720	6,346,045	11,661,121	1,175,002	2,167,499	3,342,501
2028	2,782,816	3,772,827	6,555,643	2,758,025	2,556,362	6,343,621	11,658,008	1,168,777	2,155,868	3,324,645
2029	2,776,866	3,766,644	6,543,510	2,746,572	2,545,875	6,317,682	11,610,129	1,163,529	2,146,075	3,309,604
2030	2,766,660	3,752,529	6,519,189	2,742,126	2,541,765	6,307,406	11,591,297	1,159,035	2,137,678	3,296,713
2031	2,746,728	3,729,935	6,476,663	2,719,255	2,520,825	6,257,048	11,497,128	1,141,995	2,106,167	3,248,162
2032	2,737,385	3,712,078	6,449,463	2,721,361	2,522,716	6,261,225	11,505,302	1,145,366	2,112,289	3,257,655
2033	2,760,670	3,715,034	6,475,704	2,851,457	2,641,480	6,543,760	12,036,697	1,195,140	2,204,186	3,399,326
2034	2,695,977	3,643,047	6,339,024	2,840,624	2,631,459	6,518,614	11,990,697	1,192,470	2,199,194	3,391,664
2035	2,562,444	3,499,736	6,062,180	2,816,329	2,609,230	6,465,084	11,890,643	1,186,633	2,188,321	3,374,954
TOTAL	135,919,187	180,637,245	316,556,432	151,219,554	148,777,579	409,406,353	709,403,486	62,051,163	114,456,426	176,507,589

a) Unadjusted for prior overpayments or underpayments of charges.

CHARGE FOR EACH CONTRACTOR[a]

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA									
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	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)
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	2,779	0	0	0	0	0	2,779
1965	0	0	0	6,145	75,080	0	0	0	0	81,225
1966	0	0	0	12,267	140,079	0	0	0	0	152,346
1967	0	0	0	26,750	272,885	0	0	0	0	299,635
1968	72,848	179,432	9,733	55,503	453,031	1,527,288	13,040	11,296	205,246	2,527,417
1969	120,864	175,028	10,121	88,649	533,962	2,356,977	11,662	10,275	343,218	3,650,756
1970	143,843	196,548	16,886	95,780	583,583	2,872,182	11,794	12,799	283,484	4,216,899
1971	148,385	192,031	17,845	96,825	615,958	3,766,683	16,745	14,075	437,950	5,306,497
1972	170,964	213,379	18,649	99,941	641,907	4,880,917	14,174	20,042	1,045,331	7,105,304
1973	161,415	195,702	14,784	98,724	649,640	4,823,743	14,440	11,343	396,293	6,366,084
1974	171,133	271,560	14,753	99,697	708,682	5,113,437	14,533	12,379	576,660	6,982,834
1975	191,317	336,132	15,696	107,980	726,096	6,214,083	15,544	14,051	703,346	8,324,245
1976	212,386	294,442	16,241	109,290	784,821	6,563,112	15,913	15,667	546,719	8,558,591
1977	208,999	256,497	13,343	113,767	808,006	6,717,996	17,340	13,498	494,255	8,643,701
1978	236,166	346,951	12,415	117,873	909,735	8,248,060	17,881	17,759	494,499	10,401,339
1979	270,509	372,362	16,074	115,458	905,074	9,266,396	18,966	24,375	932,353	11,921,567
1980	254,877	392,664	14,425	126,730	897,415	9,813,756	19,498	23,587	717,037	12,259,989
1981	273,379	457,234	32,424	134,466	1,083,288	11,244,046	23,622	22,545	889,352	14,160,356
1982	270,279	449,994	15,435	135,709	1,009,283	12,012,328	21,726	21,799	724,270	14,660,823
1983	326,844	605,870	16,479	148,012	1,017,315	15,036,476	37,103	30,079	403,390	17,621,568
1984	466,507	889,455	17,473	163,804	1,995,209	23,082,507	52,593	58,104	766,669	27,492,321
1985	574,595	1,148,465	96,490	182,756	2,480,691	29,040,522	72,785	75,120	2,309,450	35,980,874
1986	634,688	1,266,487	78,569	193,377	2,827,838	33,000,632	80,376	77,017	2,608,545	40,767,529
1987	648,519	1,295,741	66,046	217,559	2,928,631	34,253,570	85,137	78,080	2,826,277	42,399,560
1988	633,637	1,278,612	62,727	224,826	2,876,756	34,014,448	81,160	76,774	2,715,672	41,964,612
1989	634,776	1,352,999	64,498	219,086	3,028,222	35,488,396	83,941	81,357	2,807,586	43,760,861
1990	643,033	1,417,511	65,647	220,444	3,190,826	36,848,217	85,961	84,057	2,896,559	45,452,255
1991	641,540	1,412,575	65,391	221,453	3,192,937	36,731,466	85,987	83,681	2,886,400	45,321,430
1992	636,836	1,399,367	64,703	221,730	3,166,339	36,426,821	85,142	82,785	2,859,268	44,942,991
1993	650,427	1,403,124	64,895	230,236	3,175,071	36,445,439	85,398	83,016	2,866,933	45,004,539
1994	654,084	1,413,305	65,423	230,383	3,197,566	36,678,865	86,096	83,669	2,887,823	45,297,214
1995	650,723	1,404,352	64,961	230,315	3,177,650	36,467,902	85,478	83,062	2,869,443	45,033,886
1996	655,309	1,417,152	65,623	230,436	3,206,013	36,764,763	86,360	83,880	2,895,712	45,405,248
1997	648,118	1,398,154	64,635	230,393	3,163,829	36,318,553	85,044	82,474	2,856,699	44,847,899
1998	653,143	1,411,851	65,346	230,533	3,194,345	36,638,851	85,987	83,365	2,884,808	45,248,229
1999	638,945	1,373,199	63,338	230,511	3,108,706	35,738,414	83,310	80,634	2,805,432	44,122,489
2000	642,829	1,384,634	63,931	230,601	3,133,911	35,995,610	84,098	81,349	2,828,901	44,445,864
2001	639,180	1,374,521	63,402	230,837	3,111,614	35,764,849	83,389	80,581	2,808,102	44,156,475
2002	673,846	1,471,301	68,433	231,603	3,325,013	37,997,929	90,046	87,062	3,006,787	46,952,020
2003	670,506	1,461,880	67,944	231,658	3,304,406	37,790,557	89,388	86,423	2,987,431	46,690,193
2004	668,625	1,457,152	67,694	232,695	3,294,534	37,706,260	88,981	86,023	2,977,679	46,579,643
2005	664,352	1,445,310	67,079	232,692	3,268,422	37,436,566	88,161	85,227	2,953,356	46,241,165
2006	662,615	1,434,658	66,517	234,216	3,247,705	37,234,952	87,408	84,488	2,931,262	45,983,821
2007	658,797	1,423,968	65,956	234,253	3,223,932	36,984,745	86,665	83,774	2,909,294	45,671,384
2008	655,349	1,414,298	65,454	234,288	3,202,523	36,761,955	85,993	83,129	2,889,433	45,392,422
2009	685,356	1,496,713	69,737	234,764	3,385,097	38,672,613	91,682	88,647	3,058,626	47,783,235
2010	680,736	1,483,896	69,071	234,766	3,356,674	38,375,563	90,794	87,784	3,032,299	47,411,583
2011	677,343	1,475,049	68,608	234,553	3,337,490	38,172,595	90,184	87,191	3,014,102	47,157,115
2012	673,790	1,465,068	68,090	234,573	3,315,406	37,943,030	89,491	86,533	2,993,595	46,869,576
2013	645,419	1,385,542	63,954	234,601	3,139,623	36,114,465	83,976	81,313	2,830,272	44,579,165
2014	646,958	1,389,667	64,168	231,848	3,148,784	36,210,760	84,261	81,605	2,838,740	44,696,791
2015	658,746	1,421,437	65,816	228,961	3,143,887	36,948,360	86,439	83,734	2,903,915	45,541,295
2016	653,863	1,407,673	65,099	222,862	3,048,465	36,631,666	85,486	82,836	2,875,644	45,073,594
2017	642,994	1,377,133	63,512	208,371	2,848,150	35,929,001	83,368	80,848	2,812,929	44,046,306
2018	642,725	1,375,870	63,447	185,249	2,726,066	35,905,141	74,603	80,783	2,810,339	43,864,223
2019	675,318	1,464,440	68,050	177,110	2,861,233	37,960,721	80,204	86,794	2,992,161	46,366,031
2020	666,943	1,439,376	66,747	174,961	2,773,211	37,379,480	78,245	85,140	2,940,695	45,604,798
2021	664,981	1,433,566	66,447	173,812	2,737,336	37,214,312	77,700	84,786	2,928,771	45,381,711
2022	663,588	1,426,042	66,054	172,473	2,710,157	37,035,075	77,186	84,622	2,913,329	45,148,526
2023	661,430	1,419,531	65,716	172,016	2,691,139	36,888,572	76,705	84,190	2,899,957	44,959,256
2024	656,623	1,415,031	65,502	168,607	2,674,825	36,738,986	76,410	84,149	2,891,107	44,771,240
2025	656,213	1,413,522	65,424	168,027	2,668,918	36,707,078	76,281	84,016	2,888,008	44,727,487
2026	683,969	1,489,568	69,376	168,108	2,835,218	38,471,997	81,504	89,076	3,044,141	46,932,957
2027	682,049	1,483,887	69,080	167,429	2,819,625	38,344,595	81,064	88,663	3,032,474	46,768,866
2028	682,291	1,483,910	69,081	164,955	2,817,833	38,353,676	81,044	88,615	3,032,522	46,773,927
2029	680,643	1,478,661	68,812	164,734	2,803,672	38,228,681	80,659	88,219	3,021,861	46,615,942
2030	679,755	1,474,861	68,616	164,477	2,793,061	38,157,747	80,344	88,024	3,014,062	46,520,947
2031	676,372	1,464,167	68,059	163,117	2,754,724	37,917,565	79,321	87,367	2,992,104	46,202,796
2032	675,987	1,462,149	67,955	162,891	2,749,882	37,868,935	79,112	87,329	2,987,960	46,142,200
2033	699,608	1,527,217	71,336	162,575	2,885,191	39,361,605	83,381	91,681	3,121,553	48,004,147
2034	698,866	1,525,176	71,229	161,981	2,874,126	39,306,717	83,095	91,546	3,117,358	47,930,094
2035	695,598	1,516,192	70,763	161,533	2,848,067	39,093,302	82,299	90,941	3,098,913	47,657,608
TOTAL	37,343,351	78,281,241	3,707,227	12,462,384	168,586,389	2,014,002,507	4,593,703	4,637,132	158,316,361	2,481,930,295

TABLE B-19: TOTAL TRANSPORTATION

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1962	0	0	0	0	0	0	0	0	0	0
1963	34,103	0	0	0	0	0	0	0	52,892	0
1964	64,236	20,562	14,748	4,467	37,994	1,169	29,073	8,390	84,582	35,768
1965	121,108	38,997	25,633	7,348	41,627	2,127	51,397	15,549	137,892	36,084
1966	220,291	73,722	45,669	12,739	74,670	3,833	92,298	28,262	237,296	62,734
1967	426,148	151,596	87,901	23,956	144,320	7,436	178,805	55,148	442,208	117,940
1968	750,131	317,790	155,626	42,306	256,011	13,117	316,670	97,300	797,134	212,925
1969	1,079,764	478,906	229,708	62,418	378,184	19,060	467,059	140,769	1,229,190	327,991
1970	1,404,428	610,413	321,468	91,454	529,520	25,730	644,468	188,506	1,812,780	476,684
1971	1,737,517	767,135	440,873	130,821	726,443	32,454	872,327	235,769	2,586,668	672,016
1972	2,057,276	950,791	571,068	184,005	941,169	43,074	1,128,353	279,486	3,445,306	879,698
1973	2,148,591	989,578	705,726	186,612	1,153,227	44,176	1,191,886	292,353	4,030,837	961,992
1974	2,212,528	1,042,727	721,398	196,264	1,180,339	45,914	1,223,903	297,161	4,059,537	1,006,340
1975	2,389,597	1,097,621	762,564	209,099	1,248,564	49,202	1,290,987	309,438	4,221,731	1,107,235
1976	2,742,919	1,079,058	809,296	218,194	1,324,546	52,178	1,333,750	318,882	4,363,722	1,161,586
1977	2,684,660	1,156,800	705,266	229,055	1,162,493	48,054	1,405,565	334,612	4,616,083	1,224,948
1978	3,071,107	1,232,058	900,582	237,863	1,461,679	48,986	1,435,628	335,576	4,606,402	1,250,964
1979	3,551,679	1,201,534	952,800	240,863	1,534,501	49,039	1,530,360	337,111	4,483,616	1,168,227
1980	4,098,699	1,289,090	1,042,694	262,448	1,696,563	53,996	1,650,430	365,142	4,899,330	1,285,829
1981	4,428,274	1,507,967	1,113,877	274,027	1,814,467	78,306	1,769,615	396,155	5,283,670	1,373,158
1982	3,982,479	1,594,874	1,166,365	283,169	1,901,216	56,364	1,963,161	409,738	5,461,600	1,571,616
1983	5,156,136	1,797,798	1,744,650	333,406	2,826,489	69,590	2,024,065	496,247	6,074,032	1,569,544
1984	7,303,018	2,696,190	2,832,158	450,119	4,563,175	78,514	2,311,874	574,178	7,153,383	2,356,146
1985	9,410,974	3,128,798	3,838,660	562,452	6,171,961	81,387	2,414,065	802,037	7,937,452	2,479,291
1986	9,852,217	3,568,493	4,181,270	604,978	6,730,292	167,851	2,554,530	1,032,710	8,643,530	3,187,502
1987	9,887,728	3,699,416	4,377,530	619,416	7,132,634	101,447	2,615,033	1,041,132	9,194,227	3,094,146
1988	9,591,901	3,605,768	4,328,828	627,774	7,129,747	99,258	2,597,146	1,102,723	9,429,805	2,961,825
1989	9,904,890	3,821,570	4,649,775	682,023	7,733,117	100,043	2,607,430	1,175,210	9,732,330	3,051,328
1990	10,172,640	4,011,737	4,932,203	715,737	8,134,099	100,651	2,612,518	1,244,610	10,393,567	3,284,141
1991	8,201,866	4,136,723	4,921,168	742,284	8,115,900	100,740	10,558,406	1,295,452	10,944,385	3,328,738
1992	8,284,262	4,229,644	4,859,199	746,475	8,013,689	334,263	10,436,337	1,366,746	10,982,455	3,305,229
1993	8,435,795	4,358,100	4,869,258	758,345	8,030,273	348,411	10,472,376	1,451,839	11,117,290	3,319,173
1994	8,614,081	4,564,415	4,927,633	802,496	8,126,563	364,552	10,561,918	1,543,788	11,801,574	3,443,981
1995	8,704,730	4,613,536	4,873,470	797,334	8,037,224	374,620	10,475,901	1,615,411	11,665,508	3,391,666
1996	8,975,584	4,851,547	4,931,655	829,123	8,133,194	392,026	10,590,522	1,722,506	12,153,316	3,478,795
1997	9,082,971	4,850,063	4,837,169	825,483	7,977,347	384,858	10,401,575	1,787,274	12,112,998	3,436,009
1998	9,367,547	5,100,558	4,921,928	882,033	8,117,156	389,851	10,532,492	1,898,745	13,040,455	3,610,301
1999	9,355,556	4,980,542	4,728,266	843,982	7,797,731	375,839	10,165,202	1,927,871	12,431,113	3,441,867
2000	9,615,625	5,197,055	4,776,236	874,643	7,876,850	379,368	10,257,212	2,032,503	12,914,418	3,526,630
2001	9,779,322	5,293,562	4,731,284	886,357	7,802,704	375,509	10,156,012	2,089,234	13,138,412	3,545,129
2002	10,612,915	5,979,891	5,134,986	975,447	8,468,565	408,610	11,024,707	2,340,381	14,460,678	3,850,907
2003	10,807,769	6,110,139	5,103,418	993,338	8,416,491	405,625	10,947,087	2,407,338	14,787,685	3,889,139
2004	11,027,811	7,065,596	5,051,962	981,747	8,331,616	403,031	10,879,915	2,475,917	14,593,776	3,828,544
2005	11,189,445	6,332,346	5,034,958	1,030,254	8,303,583	398,912	10,773,932	2,532,786	15,474,841	3,974,133
2006	11,455,448	6,351,943	4,968,263	1,009,524	8,193,565	395,485	10,685,074	2,600,371	15,125,801	3,887,851
2007	11,691,211	6,306,171	4,934,091	1,028,373	8,137,211	391,697	10,595,663	2,662,931	15,479,801	3,939,670
2008	11,925,207	6,276,531	4,891,003	1,036,227	8,066,129	388,226	10,505,320	2,725,541	15,633,623	3,291,964
2009	12,954,675	6,872,776	5,267,822	1,157,338	8,687,659	417,174	11,266,066	3,020,580	17,587,705	4,362,628
2010	13,178,384	6,793,192	5,166,957	1,109,434	8,521,268	412,578	11,146,315	3,079,945	16,756,160	4,178,906
2011	13,545,276	6,796,984	5,165,831	1,164,042	8,519,433	409,544	11,066,989	3,057,128	17,732,145	4,355,669
2012	13,892,853	6,655,580	5,105,955	1,151,085	8,420,661	406,118	10,977,791	3,031,346	17,513,789	4,299,435
2013	13,480,412	6,204,462	4,772,936	1,092,595	7,857,726	378,674	10,261,493	2,824,894	16,568,512	4,067,386
2014	13,900,782	6,068,444	4,824,640	1,167,964	7,957,352	379,057	10,272,726	2,828,175	17,934,930	4,325,784
2015	14,608,819	6,441,887	4,901,098	1,156,061	8,083,437	389,071	10,541,880	2,903,356	17,646,266	4,272,352
2016	14,742,355	6,134,118	4,827,891	1,159,510	7,962,700	382,644	10,377,552	2,855,133	17,918,512	4,270,507
2017	14,553,330	6,022,069	4,665,160	1,142,330	7,694,302	368,545	10,016,865	2,749,308	17,829,463	4,186,579
2018	14,665,751	5,793,692	4,609,738	1,145,056	7,602,903	363,914	9,902,425	2,715,028	18,028,215	4,163,528
2019	15,933,345	6,189,067	4,917,334	1,231,115	8,110,237	390,095	10,595,501	2,912,961	19,620,794	4,423,215
2020	15,731,837	6,019,469	4,748,103	1,213,452	7,831,137	375,835	10,221,507	2,808,171	19,449,067	4,307,325
2021	16,016,076	5,840,799	4,634,122	1,213,282	7,643,163	367,889	9,959,983	2,751,707	19,384,079	4,255,580
2022	16,481,818	5,611,724	4,544,034	1,165,430	7,494,573	364,654	9,838,125	2,728,232	18,324,579	4,093,395
2023	16,962,781	5,730,239	4,489,390	1,141,619	7,404,441	361,264	9,743,008	2,703,237	17,847,717	4,056,625
2024	17,526,121	5,563,097	4,494,237	1,162,653	7,412,447	359,993	9,710,552	2,693,784	18,206,644	4,187,156
2025	18,103,386	5,495,011	4,444,155	1,131,021	7,329,843	358,823	9,646,658	2,685,278	17,621,508	4,128,548
2026	20,295,707	6,048,095	4,758,913	1,213,528	7,848,995	385,413	10,331,737	2,885,305	19,055,638	4,521,974
2027	21,062,767	6,073,373	4,762,006	1,244,284	7,854,112	383,429	10,271,484	2,870,428	19,592,418	4,699,300
2028	21,953,730	5,992,100	4,713,414	1,183,228	7,773,939	383,755	10,275,888	2,872,946	18,498,335	4,563,963
2029	22,733,606	5,906,172	4,730,708	1,222,780	7,802,483	382,195	10,234,577	2,861,269	19,195,349	4,774,191
2030	22,690,716	5,867,760	4,708,704	1,204,176	7,766,179	381,480	10,216,384	2,855,916	18,879,754	4,789,653
2031	22,410,911	5,874,427	4,635,180	1,169,918	7,644,918	376,750	10,093,354	2,820,521	18,293,976	4,749,330
2032	22,393,705	5,646,120	4,633,588	1,170,743	7,642,284	376,458	10,086,447	2,818,354	18,317,099	4,842,602
2033	23,624,567	6,136,860	4,913,977	1,274,732	8,104,765	396,947	10,627,959	2,972,343	20,165,803	5,370,888
2034	23,438,641	6,017,277	4,845,904	1,225,723	7,992,490	393,827	10,550,999	2,948,976	19,305,876	5,284,515
2035	23,172,290	6,077,819	4,824,442	1,249,154	7,957,100	389,387	10,438,501	2,915,604	19,724,733	5,441,454
TOTAL	767,666,825	302,401,964	259,260,522	55,398,731	426,895,385	18,420,092	507,004,813	125,560,753	860,267,997	222,379,872

CHARGE FOR EACH CONTRACTOR[a]

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC & WCD	Total	South Bay	
	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
1962	0	0	0	0	0	0	0	0	0	55,537
1963	0	707,040	0	794,035	0	0	0	0	59,816	1,652,536
1964	22,220	1,288,250	9,598	1,621,057	0	0	0	0	99,096	2,823,960
1965	22,324	2,227,522	18,164	2,745,772	0	0	412	412	170,836	4,837,837
1966	38,748	3,983,276	34,159	4,907,697	0	0	575	575	197,632	7,438,854
1967	72,741	7,857,318	69,640	9,635,157	0	0	573	573	256,263	12,876,889
1968	131,380	15,633,682	145,835	18,869,907	0	0	575	575	333,889	25,031,726
1969	202,617	23,643,507	219,939	28,479,112	0	0	3,250	3,250	405,735	36,214,115
1970	295,272	31,267,287	279,655	37,947,665	0	0	15,402	15,402	444,995	46,486,494
1971	417,147	40,791,458	349,890	49,760,518	0	0	16,297	16,297	434,848	59,280,754
1972	546,252	53,924,697	430,666	65,381,841	0	0	17,695	17,695	460,574	77,106,541
1973	597,469	58,288,683	444,025	71,035,155	0	0	17,656	17,656	435,119	81,868,798
1974	621,182	62,834,863	464,270	75,906,426	0	0	17,799	17,799	458,186	87,611,238
1975	654,643	67,834,245	487,199	81,662,125	0	0	18,728	18,728	467,775	94,759,646
1976	678,581	69,580,398	484,487	84,147,597	0	0	17,799	17,799	490,385	98,169,366
1977	706,955	67,301,469	516,088	82,092,048	0	0	18,555	18,555	483,248	96,168,667
1978	733,171	75,457,578	543,225	91,314,819	0	0	17,703	17,703	488,818	107,536,159
1979	722,638	73,724,176	534,985	90,031,529	0	0	20,901	20,901	506,493	107,910,012
1980	788,166	81,037,443	580,321	99,050,151	0	0	18,083	18,083	567,357	117,896,949
1981	815,402	92,680,393	647,603	112,182,914	0	0	21,516	21,516	586,289	132,955,133
1982	862,208	94,350,715	681,377	114,284,882	0	0	28,626	28,626	565,302	135,901,018
1983	958,026	102,919,875	788,764	126,758,622	0	0	17,249	17,249	619,965	152,145,045
1984	1,095,411	139,645,714	886,870	171,946,750	0	0	18,315	18,315	620,096	209,675,475
1985	1,141,746	183,513,143	899,770	222,381,736	0	0	20,272	20,272	736,223	271,636,160
1986	1,204,611	219,377,387	936,620	262,041,991	0	0	20,268	20,268	779,007	318,286,823
1987	1,251,570	253,717,336	949,414	297,681,029	0	0	20,268	20,268	803,789	357,119,691
1988	1,575,493	238,534,146	996,073	282,580,487	0	0	20,274	20,274	795,730	344,234,616
1989	1,619,059	244,559,996	1,073,383	290,710,154	0	0	20,277	20,277	798,015	354,682,800
1990	1,627,627	249,223,360	1,163,214	297,616,104	0	0	20,278	20,278	799,895	363,700,173
1991	1,690,387	248,897,142	1,274,460	304,207,651	0	0	20,280	20,280	801,442	370,388,866
1992	1,713,449	248,626,701	1,377,346	304,275,795	0	0	20,281	20,281	801,891	370,167,919
1993	1,750,036	250,859,455	1,484,218	307,254,569	0	0	20,281	20,281	802,082	375,624,415
1994	1,857,696	256,578,877	1,693,182	314,880,756	0	0	20,281	20,281	802,455	383,889,868
1995	1,857,951	253,586,743	1,853,418	311,847,512	0	0	20,281	20,281	802,178	380,668,810
1996	2,369,330	262,969,698	2,156,031	323,553,327	0	0	20,281	20,281	802,529	393,001,440
1997	2,412,949	259,290,400	2,396,605	319,795,701	0	0	20,281	20,281	802,346	388,553,576
1998	2,609,742	269,081,513	2,822,262	332,374,583	0	0	20,281	20,281	802,781	401,706,152
1999	2,554,116	258,832,843	2,783,734	320,218,662	0	0	20,281	20,281	802,715	387,983,799
2000	2,690,113	265,497,174	2,920,012	328,557,839	0	0	20,281	20,281	802,987	396,778,547
2001	2,795,572	264,803,980	2,910,081	328,307,158	0	0	20,284	20,284	803,634	396,127,802
2002	3,188,854	290,400,275	3,229,915	360,076,131	0	0	20,284	20,284	805,597	431,779,309
2003	3,319,229	291,603,420	3,230,802	362,021,480	0	0	20,284	20,284	817,282	433,500,010
2004	3,384,413	292,978,873	3,258,058	364,261,259	0	0	20,284	20,284	818,452	435,573,133
2005	3,573,563	292,914,439	3,222,222	364,755,414	0	0	20,284	20,284	818,442	435,602,251
2006	3,471,796	293,533,150	3,206,617	364,884,888	0	0	20,284	20,284	818,555	435,375,484
2007	3,459,471	293,464,488	3,168,600	365,259,378	0	0	20,284	20,284	818,666	435,326,067
2008	3,424,710	293,875,162	3,137,321	365,176,964	0	0	20,284	20,284	818,775	434,865,801
2009	3,768,492	321,302,464	3,409,429	400,074,808	0	0	20,284	20,284	820,266	473,115,711
2010	3,599,255	316,456,811	3,357,971	393,757,176	0	0	20,284	20,284	820,272	466,292,706
2011	3,668,779	319,841,914	3,349,688	398,673,422	0	0	20,286	20,286	819,699	470,864,741
2012	3,585,533	316,786,662	3,294,118	395,120,926	0	0	20,286	20,286	819,766	466,927,368
2013	3,314,098	299,013,027	3,063,973	372,900,188	0	0	20,286	20,286	772,669	440,867,956
2014	3,457,106	298,362,704	3,020,833	374,500,497	0	0	20,286	20,286	734,781	442,331,255
2015	3,420,912	313,057,605	3,172,782	390,595,526	0	0	19,874	19,874	679,540	459,089,768
2016	3,372,043	302,182,375	3,052,863	379,238,203	0	0	19,711	19,711	655,196	446,830,635
2017	3,257,221	298,876,810	2,974,884	374,336,866	0	0	19,714	19,714	612,943	440,267,801
2018	3,211,186	290,309,749	2,880,831	365,392,016	0	0	19,711	19,711	534,526	430,748,383
2019	3,421,589	309,031,226	3,083,819	389,860,298	0	0	17,036	17,036	470,222	458,498,988
2020	3,295,312	302,312,035	2,988,705	381,301,955	0	0	4,884	4,884	447,300	448,831,614
2021	3,217,891	292,988,314	2,907,573	371,180,458	0	0	4,043	4,043	429,644	438,260,091
2022	3,070,992	282,791,244	2,821,022	359,329,822	0	0	2,631	2,631	428,404	426,153,405
2023	3,000,376	284,645,031	2,855,070	360,940,798	0	0	2,631	2,631	427,590	427,471,550
2024	3,042,885	280,113,752	2,795,610	357,268,931	0	0	2,630	2,630	426,341	423,569,258
2025	2,961,677	277,964,819	2,770,032	354,640,759	0	0	2,627	2,627	424,503	420,866,630
2026	3,200,377	304,136,819	3,030,051	387,712,552	0	0	2,626	2,626	425,155	456,721,820
2027	3,263,581	306,164,953	3,032,173	391,274,308	0	0	2,624	2,624	424,136	460,034,075
2028	3,123,696	302,187,189	3,003,826	386,526,009	0	0	2,622	2,622	422,955	455,263,809
2029	3,209,144	302,986,009	2,968,878	389,007,361	0	0	2,620	2,620	421,576	457,510,742
2030	3,167,861	301,076,146	2,948,984	386,553,713	0	0	2,619	2,619	420,172	454,904,650
2031	3,083,482	306,518,355	2,931,762	390,602,884	0	0	2,618	2,618	417,093	458,447,344
2032	3,086,104	304,305,909	2,851,133	388,170,546	0	0	2,616	2,616	417,351	455,945,133
2033	3,366,486	336,628,403	3,071,892	426,655,622	0	0	2,615	2,615	417,208	496,991,319
2034	3,248,838	336,404,107	3,024,444	424,681,617	0	0	2,614	2,614	413,565	494,749,275
2035	3,292,231	344,856,744	3,032,037	433,371,496	0	0	2,613	2,613	409,728	502,769,222
TOTAL	156,233,183	15,695,000,466	142,454,501	19,538,945,104	0	0	1,037,818	1,037,818	42,920,786	23,267,301,510

TABLE B-20A: CALCULATION OF DELTA WATER RATES

[values in millions of dollars ($) or millions of acre-feet (AF)
discounted to 1986 at 4.727 percent per annum]

Procedure	Capital Cost Component		Minimum Operation, Maintenance, Power, and Replacement Component(a		Total Delta Water Rate	
In accordance with amendment to Articles 22(e) and 22(g) (for all contractors except Solano County Flood Control and Water Conservation District)						
Commencing in 1987						
Total costs of "initial" Project conservation facilities to be reimbursed and Project water entitlements during the Project repayment period	$1,733.67(b	120.40 AF	$922.19(c	120.40 AF	$2,655.86	120.40 AF
Less, Project power revenues to be realized during the Project repayment period	-726.48		-256.37		-982.85	
Less, Delta Water Charges paid, and Project water entitlements, prior to 1987	-356.86(d	-42.21 AF	-156.69	-42.21 AF	-513.55	-42.21 AF
Subtotal	$ 650.33	78.19 AF	$509.13	78.19 AF	$1,159.46	78.19 AF
Rate applicable 1987 through 2035	$8.32 per acre-foot		$6.51 per acre-foot		$14.83 per acre-foot	
Calculation under original provisions of Article 22(e) and 22(g) (for Solano County Flood Control and Water Conservation District)						
Commencing in 1987						
Total costs of "initial" Project conservation facilities to be reimbursed and Project water entitlements during the Project repayment period	$1,764.67(b	120.40 AF	$922.19(c	120.40 AF	$2,686.86	120.40 AF
Less, Project power revenues to be realized during the Project repayment period	-726.48		-256.37		-982.85	
Less, Delta Water Charges paid, and Project water entitlements, prior to 1987	-356.86(d	-42.21 AF	-156.69	-42.21 AF	-513.55	-42.21 AF
Subtotal	$ 681.33	78.19 AF	$509.13	78.19 AF	$1,190.46	78.19 AF
Rate applicable 1987 through 2035	$8.71 per acre-foot		$6.51 per acre-foot		$15.23 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.
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[a]

Item	Rate per acre-foot		
	Capital Cost Component	Minimum Operation, Maintenance, Power, and Replacement Component	Total Delta Water Rate
Initial Conservation Facilities			
Oroville Division			
Water supply and power costs[b]	$ 15.08	$6.81	$21.89
Less, Oroville power revenues	-9.29	-3.28	-12.57
Subtotal	$5.79	$3.53	$ 9.32
Delta Facilities	2.06	1.44	3.50
California Aqueduct, portion of Reaches 1, 2A, 2B, and 3	1.93	1.43	3.36
San Luis Facilities	2.88	2.11	4.99
Planning and preoperating costs through 1985	0.64	0	0.64
Less, Capital Cost Credits	-0.42	0	-0.42
Less, Delta Water Charges paid prior to 1987	-4.56	-2.00	-6.56
Rate applicable 1987 through 2035	$8.32	$6.51	$14.83

a) Delta Water Rate applicable to all contractors except Solano County Flood Control and Water Conservation District. (See Table B-20A).
b) Includes revenue received from non-contractors.

TABLE B-21: TOTAL DELTA WATER

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
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	76,284	21,767	98,051	423,378	485,372	1,330,615	2,239,365	151,206	275,347	426,553
1987	0	209,341	209,341	430,024	493,786	1,304,900	2,228,710	185,355	336,664	522,019
1988	85,189	238,421	323,610	444,852	511,580	1,304,900	2,261,332	229,840	418,488	648,328
1989	91,862	280,441	372,303	459,681	529,374	1,334,557	2,323,612	296,568	538,894	835,462
1990	100,018	323,527	423,545	474,509	547,168	1,364,214	2,385,891	370,710	674,485	1,045,195
1991	108,099	339,513	447,612	504,166	569,411	1,393,871	2,467,448	370,710	674,485	1,045,195
1992	116,255	367,984	484,239	533,823	591,654	1,423,528	2,549,005	370,710	674,485	1,045,195
1993	125,893	397,824	523,717	563,480	613,896	1,453,185	2,630,561	370,710	674,485	1,045,195
1994	135,458	427,513	562,971	593,137	622,793	1,482,841	2,698,771	370,710	674,485	1,045,195
1995	145,022	521,450	666,472	622,793	622,793	1,482,841	2,728,427	370,710	674,485	1,045,195
1996	154,586	575,498	730,084	652,450	622,793	1,482,841	2,758,084	370,710	674,485	1,045,195
1997	164,076	582,349	746,425	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
1998	173,641	589,352	762,993	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
1999	182,834	596,356	779,190	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2000	193,511	603,207	796,718	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2001	202,630	610,210	812,840	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2002	210,341	617,214	827,555	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2003	219,461	624,217	843,678	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2004	228,358	631,068	859,426	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2005	237,255	631,830	869,085	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2006	243,927	632,591	876,518	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2007	252,083	633,352	885,435	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2008	261,722	634,113	895,835	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2009	269,877	634,875	904,752	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2010	278,033	635,636	913,669	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2011	287,671	636,397	924,068	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2012	295,827	637,158	932,985	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2013	305,465	637,920	943,385	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2014	315,104	638,681	953,785	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2015	324,742	639,442	964,184	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2016	333,639	639,442	973,081	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2017	342,536	639,442	981,978	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2018	351,433	639,442	990,875	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2019	360,330	639,442	999,772	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2020	369,228	639,442	1,008,670	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2021	370,710	639,442	1,010,152	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2022	370,710	639,442	1,010,152	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2023	370,710	639,442	1,010,152	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2024	370,710	639,442	1,010,152	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2025	370,710	639,442	1,010,152	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2026	370,710	639,442	1,010,152	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2027	370,710	639,442	1,010,152	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2028	370,710	639,442	1,010,152	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2029	370,710	639,442	1,010,152	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2030	370,710	639,442	1,010,152	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2031	370,710	639,442	1,010,152	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2032	370,710	639,442	1,010,152	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2033	370,710	639,442	1,010,152	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2034	370,710	639,442	1,010,152	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
2035	370,710	639,442	1,010,152	682,107	622,793	1,482,841	2,787,741	370,710	674,485	1,045,195
TOTAL	13,103,040	28,473,258	41,576,298	35,975,708	34,941,243	89,583,491	160,500,442	18,186,275	33,076,721	51,262,996

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)
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	38,606	0	1,526,231	9,548,592	39,893	61,770	1,140,169	13,099,073
1985	179,667	667,740	42,441	0	1,752,816	11,191,715	48,100	69,320	644,383	14,596,182
1986	192,032	745,447	45,362	0	1,941,488	12,698,304	55,946	77,115	1,469,725	17,225,419
1987	188,321	762,180	44,485	0	1,766,064	13,410,818	59,314	77,108	1,503,601	17,811,891
1988	188,321	793,320	44,485	0	1,837,240	14,097,374	59,314	80,073	1,565,881	18,666,008
1989	188,321	824,460	44,485	0	1,901,002	14,592,643	59,314	83,039	1,629,643	19,322,907
1990	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
1991	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
1992	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
1993	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
1994	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
1995	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
1996	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
1997	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
1998	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
1999	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2000	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2001	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2002	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2003	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2004	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2005	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2006	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2007	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2008	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2009	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2010	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2011	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2012	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2013	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2014	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2015	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2016	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2017	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2018	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2019	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2020	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2021	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2022	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2023	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2024	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2025	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2026	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2027	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2028	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2029	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2030	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2031	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2032	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2033	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2034	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
2035	188,321	855,599	44,485	0	1,995,904	15,107,189	59,314	84,522	1,757,167	20,092,501
TOTAL	11,510,377	49,063,726	2,778,293	0	111,227,609	842,513,124	3,355,444	4,980,574	98,884,706	1,124,313,853

TABLE B-21: TOTAL DELTA WATER

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
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	682,107	523,443	306,236	77,404	504,166	30,695	682,107	237,848	1,379,043	385,539
1989	1,863,932	554,583	324,342	81,705	541,237	32,474	719,178	247,041	1,438,356	406,299
1990	1,958,834	582,757	342,536	86,005	564,963	34,105	753,283	256,532	1,505,084	427,058
1991	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
1992	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
1993	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
1994	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
1995	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
1996	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
1997	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
1998	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
1999	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2000	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2001	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2002	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2003	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2004	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2005	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2006	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2007	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2008	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2009	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2010	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2011	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2012	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2013	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2014	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2015	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2016	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2017	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2018	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2019	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2020	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2021	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2022	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2023	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2024	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2025	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2026	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2027	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2028	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2029	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2030	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2031	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2032	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2033	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2034	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
2035	2,052,253	615,379	342,536	86,005	564,963	34,105	753,283	256,532	1,521,395	427,058
TOTAL	107,238,574	33,062,166	18,768,975	4,706,513	30,785,571	1,863,740	41,340,512	14,352,164	85,677,228	23,854,772

CHARGE FOR EACH CONTRACTOR

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC & WCD	Total	South Bay	
	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
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	37,460,476
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	13,458	63,356	0	49,858,374
1987	207,598	26,095,043	148,284	31,009,788	37,071	17,794	13,642	68,507	0	51,850,256
1988	223,909	27,586,782	192,769	32,812,048	43,002	17,794	14,235	75,031	0	54,786,357
1989	240,220	29,078,520	237,255	35,765,142	48,934	17,794	14,828	81,556	0	58,700,982
1990	256,532	29,827,355	296,568	36,891,612	56,348	17,794	15,422	89,564	0	60,928,308
1991	256,532	29,827,355	296,568	37,033,964	142,353	407,781	16,015	566,149	0	61,652,869
1992	256,532	29,827,355	296,568	37,033,964	142,353	407,781	16,608	566,742	0	61,771,646
1993	256,532	29,827,355	296,568	37,033,964	142,353	407,781	17,201	567,335	0	61,893,273
1994	256,532	29,827,355	296,568	37,033,964	142,353	407,781	17,794	567,928	0	62,001,330
1995	256,532	29,827,355	296,568	37,033,964	142,353	407,781	18,536	568,670	0	62,135,229
1996	256,532	29,827,355	296,568	37,033,964	142,353	407,781	19,277	569,411	0	62,229,239
1997	256,532	29,827,355	296,568	37,033,964	142,353	407,781	20,018	570,152	0	62,275,978
1998	256,532	29,827,355	296,568	37,033,964	142,353	407,781	20,760	570,894	0	62,293,288
1999	256,532	29,827,355	296,568	37,033,964	142,353	407,781	21,501	571,635	0	62,310,226
2000	256,532	29,827,355	296,568	37,033,964	142,353	407,781	22,391	572,525	0	62,328,644
2001	256,532	29,827,355	296,568	37,033,964	142,353	407,781	23,281	573,415	0	62,345,656
2002	256,532	29,827,355	296,568	37,033,964	142,353	407,781	24,170	574,304	0	62,361,260
2003	256,532	29,827,355	296,568	37,033,964	142,353	407,781	25,060	575,194	0	62,378,273
2004	256,532	29,827,355	296,568	37,033,964	142,353	407,781	25,950	576,084	0	62,394,911
2005	256,532	29,827,355	296,568	37,033,964	142,353	407,781	26,839	576,973	0	62,405,459
2006	256,532	29,827,355	296,568	37,033,964	142,353	407,781	27,877	578,011	0	62,413,930
2007	256,532	29,827,355	296,568	37,033,964	142,353	407,781	28,915	579,049	0	62,423,885
2008	256,532	29,827,355	296,568	37,033,964	142,353	407,781	29,953	580,087	0	62,435,323
2009	256,532	29,827,355	296,568	37,033,964	142,353	407,781	30,991	581,125	0	62,445,278
2010	256,532	29,827,355	296,568	37,033,964	142,353	407,781	32,029	582,163	0	62,455,233
2011	256,532	29,827,355	296,568	37,033,964	142,353	407,781	33,216	583,350	0	62,466,819
2012	256,532	29,827,355	296,568	37,033,964	142,353	407,781	34,402	584,536	0	62,476,922
2013	256,532	29,827,355	296,568	37,033,964	142,353	407,781	35,736	585,870	0	62,488,656
2014	256,532	29,827,355	296,568	37,033,964	142,353	407,781	37,071	587,205	0	62,500,391
2015	256,532	29,827,355	296,568	37,033,964	142,353	407,781	38,554	588,688	0	62,512,273
2016	256,532	29,827,355	296,568	37,033,964	142,353	407,781	40,037	590,171	0	62,522,653
2017	256,532	29,827,355	296,568	37,033,964	142,353	407,781	40,037	590,171	0	62,531,550
2018	256,532	29,827,355	296,568	37,033,964	142,353	407,781	40,037	590,171	0	62,540,447
2019	256,532	29,827,355	296,568	37,033,964	142,353	407,781	40,037	590,171	0	62,549,344
2020	256,532	29,827,355	296,568	37,033,964	142,353	407,781	40,037	590,171	0	62,558,242
2021	256,532	29,827,355	296,568	37,033,964	142,353	407,781	40,037	590,171	0	62,559,724
2022	256,532	29,827,355	296,568	37,033,964	142,353	407,781	40,037	590,171	0	62,559,724
2023	256,532	29,827,355	296,568	37,033,964	142,353	407,781	40,037	590,171	0	62,559,724
2024	256,532	29,827,355	296,568	37,033,964	142,353	407,781	40,037	590,171	0	62,559,724
2025	256,532	29,827,355	296,568	37,033,964	142,353	407,781	40,037	590,171	0	62,559,724
2026	256,532	29,827,355	296,568	37,033,964	142,353	407,781	40,037	590,171	0	62,559,724
2027	256,532	29,827,355	296,568	37,033,964	142,353	407,781	40,037	590,171	0	62,559,724
2028	256,532	29,827,355	296,568	37,033,964	142,353	407,781	40,037	590,171	0	62,559,724
2029	256,532	29,827,355	296,568	37,033,964	142,353	407,781	40,037	590,171	0	62,559,724
2030	256,532	29,827,355	296,568	37,033,964	142,353	407,781	40,037	590,171	0	62,559,724
2031	256,532	29,827,355	296,568	37,033,964	142,353	407,781	40,037	590,171	0	62,559,724
2032	256,532	29,827,355	296,568	37,033,964	142,353	407,781	40,037	590,171	0	62,559,724
2033	256,532	29,827,355	296,568	37,033,964	142,353	407,781	40,037	590,171	0	62,559,724
2034	256,532	29,827,355	296,568	37,033,964	142,353	407,781	40,037	590,171	0	62,559,724
2035	256,532	29,827,355	296,568	37,033,964	142,353	407,781	40,037	590,171	0	62,559,724
TOTAL	13,490,473		14,647,079		6,667,633		1,637,795		0	
		1,643,084,876		2,032,872,643		18,638,259		26,943,687		3,437,469,919

TABLE B - 22: TOTAL TRANSPORTATION[a] AND

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1962	0	0	0	11,750	43,787	0	55,537	0	0	0
1963	0	0	0	153,066	189,194	456,425	798,685	0	0	0
1964	0	0	0	173,772	267,039	633,130	1,073,941	9,089	17,998	27,087
1965	0	0	0	249,438	369,432	1,176,729	1,795,599	14,973	29,020	43,993
1966	18,445	0	18,445	275,931	380,251	1,434,828	2,091,010	24,444	46,705	71,149
1967	42,393	0	42,393	365,838	509,168	1,884,593	2,759,599	43,108	81,311	124,419
1968	130,933	0	130,933	416,894	589,807	2,204,742	3,211,443	69,493	130,171	199,664
1969	257,834	0	257,834	483,786	539,955	2,326,903	3,350,644	124,641	232,046	356,687
1970	280,737	0	280,737	548,384	595,273	2,816,857	3,960,514	137,768	256,352	394,120
1971	230,704	0	230,704	485,769	630,001	2,836,037	3,951,807	138,963	258,640	397,603
1972	228,234	0	228,234	614,383	777,022	3,056,848	4,448,253	145,217	270,296	415,513
1973	224,366	32,157	256,523	600,121	671,075	3,149,949	4,421,145	142,299	264,963	407,262
1974	243,826	33,759	277,585	640,268	701,444	3,354,222	4,695,934	143,652	267,509	411,161
1975	240,944	37,174	278,118	697,163	747,245	3,243,315	4,687,723	160,306	298,277	458,583
1976	274,864	41,803	316,667	809,761	897,658	3,391,849	5,099,268	272,595	505,641	778,236
1977	297,253	46,143	343,396	777,518	876,373	3,332,964	4,986,855	283,424	526,078	809,502
1978	279,479	50,295	329,774	871,011	895,310	3,755,041	5,521,362	293,578	544,969	838,547
1979	293,121	54,420	347,541	959,446	963,175	3,847,646	5,770,267	290,056	538,592	828,648
1980	314,838	87,236	402,074	1,111,118	1,127,511	4,147,857	6,386,486	328,239	589,780	918,019
1981	350,032	112,094	462,126	1,220,258	1,306,443	4,546,635	7,073,336	357,501	640,333	997,834
1982	441,967	139,718	581,685	1,287,689	1,318,965	4,900,488	7,507,142	375,609	726,150	1,101,759
1983	382,566	157,871	540,437	1,162,960	1,210,978	4,987,005	7,360,943	398,548	737,927	1,136,475
1984	505,992	238,900	744,892	1,442,644	1,406,992	6,750,430	9,600,066	451,429	835,415	1,286,844
1985	750,297	375,651	1,125,948	1,984,564	2,211,889	8,047,824	12,244,277	537,564	992,944	1,530,508
1986	1,102,056	698,925	1,800,981	2,472,301	2,960,616	8,485,625	13,918,542	605,287	1,117,187	1,722,474
1987	1,509,764	1,674,752	3,184,516	2,531,251	3,150,591	8,341,566	14,023,408	691,898	1,275,293	1,967,191
1988	2,403,277	3,580,806	5,984,083	2,563,325	3,179,448	8,237,952	13,980,725	753,421	1,388,554	2,141,975
1989	2,463,121	3,736,603	6,199,724	2,665,626	3,270,396	8,488,816	14,424,838	810,024	1,490,284	2,300,308
1990	2,490,010	3,825,069	6,315,079	2,772,800	3,346,300	8,708,410	14,827,510	888,961	1,634,722	2,523,683
1991	2,518,050	3,851,939	6,369,989	2,910,654	3,375,795	8,806,631	15,093,080	893,026	1,642,223	2,535,249
1992	2,544,377	3,892,113	6,436,490	3,030,445	3,330,608	8,857,325	15,218,378	898,396	1,652,136	2,550,532
1993	2,575,038	3,941,490	6,516,528	3,172,577	3,415,789	8,975,503	15,563,869	1,645,012	3,017,008	4,662,020
1994	2,607,091	3,994,049	6,601,140	3,325,561	3,463,599	9,120,176	15,909,336	1,653,151	3,032,472	4,685,623
1995	2,635,334	4,127,950	6,763,284	3,448,491	3,447,073	9,080,814	15,976,378	1,646,084	3,019,301	4,665,385
1996	2,664,758	4,218,549	6,883,307	3,578,124	3,467,912	9,130,448	16,176,484	1,655,902	3,037,725	4,693,627
1997	2,684,424	4,223,473	6,907,897	3,643,079	3,427,900	9,035,169	16,106,148	1,641,448	3,011,217	4,652,665
1998	2,714,395	4,247,997	6,962,392	3,668,498	3,451,115	9,090,473	16,210,086	1,652,243	3,031,486	4,683,729
1999	2,726,204	4,242,704	6,968,908	3,582,455	3,372,552	8,903,416	15,858,423	1,624,154	2,980,293	4,604,447
2000	2,755,669	4,263,507	7,019,176	3,600,958	3,389,451	8,943,665	15,934,074	1,632,360	2,995,620	4,627,980
2001	2,773,978	4,273,097	7,047,075	3,575,512	3,366,259	8,888,769	15,830,540	1,625,340	2,983,072	4,608,412
2002	2,830,667	4,349,714	7,180,381	3,762,088	3,536,632	9,294,513	16,593,233	1,696,760	3,115,394	4,812,154
2003	2,850,702	4,363,488	7,214,190	3,765,070	3,540,673	9,312,624	16,618,367	1,690,529	3,104,299	4,794,828
2004	2,877,013	4,386,536	7,263,549	3,745,058	3,522,462	9,269,651	16,537,171	1,686,926	3,098,211	4,785,137
2005	2,894,981	4,378,712	7,273,693	3,719,794	3,499,397	9,214,734	16,433,925	1,678,496	3,082,853	4,761,349
2006	2,912,484	4,374,188	7,286,672	3,695,463	3,477,182	9,161,844	16,334,489	1,676,548	3,079,681	4,756,229
2007	2,931,055	4,369,689	7,300,744	3,671,888	3,455,659	9,110,605	16,238,152	1,669,255	3,066,575	4,735,830
2008	2,951,637	4,366,088	7,317,725	3,650,538	3,436,163	9,064,201	16,150,902	1,662,697	3,054,803	4,717,500
2009	3,017,369	4,422,687	7,440,056	3,814,187	3,585,602	9,420,089	16,819,878	1,724,845	3,170,027	4,894,872
2010	3,036,291	4,416,784	7,453,075	3,786,727	3,560,528	9,360,396	16,707,651	1,715,763	3,153,507	4,869,270
2011	3,060,414	4,415,124	7,475,538	3,766,398	3,541,914	9,315,655	16,623,967	1,709,490	3,142,228	4,851,718
2012	3,082,736	4,411,080	7,493,816	3,744,979	3,522,355	9,269,098	16,536,432	1,702,634	3,129,853	4,832,487
2013	3,065,717	4,365,982	7,431,699	3,465,430	3,265,679	8,533,475	15,264,584	1,646,974	3,028,712	4,675,686
2014	3,096,782	4,371,028	7,467,810	3,438,259	3,217,707	8,384,116	15,040,082	1,641,084	3,016,645	4,657,729
2015	3,146,341	4,398,195	7,544,536	3,455,473	3,204,146	8,129,376	14,788,995	1,661,494	3,055,628	4,717,122
2016	3,145,749	4,391,118	7,536,867	3,407,086	3,153,394	7,889,227	14,449,707	1,642,556	3,020,818	4,663,374
2017	3,128,434	4,373,945	7,502,379	3,312,425	3,066,699	7,635,785	14,014,909	1,602,444	2,947,154	4,549,598
2018	3,073,486	4,374,860	7,448,346	3,269,906	3,026,434	7,510,682	13,807,022	1,587,308	2,919,042	4,506,350
2019	3,122,469	4,438,120	7,560,589	3,412,343	3,156,625	7,801,261	14,370,229	1,650,786	3,036,505	4,687,291
2020	3,132,808	4,426,463	7,559,271	3,353,396	3,102,323	7,664,167	14,119,886	1,632,371	3,002,755	4,635,126
2021	3,129,364	4,423,544	7,552,908	3,311,912	3,062,744	7,559,969	13,934,625	1,627,008	2,992,782	4,619,790
2022	3,122,851	4,414,946	7,537,797	3,313,653	3,064,159	7,560,755	13,938,567	1,623,856	2,986,890	4,610,746
2023	3,118,731	4,379,770	7,498,501	3,302,050	3,053,539	7,533,609	13,889,198	1,618,924	2,977,740	4,596,664
2024	3,116,688	4,378,406	7,495,094	3,301,548	3,052,952	7,530,946	13,885,446	1,607,014	2,955,650	4,562,664
2025	3,108,411	4,374,806	7,483,217	3,298,871	3,050,330	7,523,102	13,872,303	1,605,676	2,953,146	4,558,822
2026	3,161,933	4,422,466	7,584,399	3,452,463	3,190,564	7,856,835	14,499,862	1,552,460	2,854,897	4,407,357
2027	3,155,517	4,415,154	7,570,671	3,440,463	3,179,513	7,828,886	14,448,862	1,545,712	2,841,984	4,387,696
2028	3,153,526	4,412,269	7,565,795	3,440,132	3,179,155	7,826,462	14,445,749	1,539,487	2,830,353	4,369,840
2029	3,147,576	4,406,086	7,553,662	3,428,679	3,168,668	7,800,523	14,397,870	1,534,239	2,820,560	4,354,799
2030	3,137,370	4,391,971	7,529,341	3,424,233	3,164,558	7,790,247	14,379,038	1,529,745	2,812,163	4,341,908
2031	3,117,438	4,369,377	7,486,815	3,401,362	3,143,618	7,739,889	14,284,869	1,512,705	2,780,652	4,293,357
2032	3,108,095	4,351,520	7,459,615	3,403,468	3,145,509	7,744,066	14,293,043	1,516,076	2,786,774	4,302,850
2033	3,131,380	4,354,476	7,485,856	3,533,564	3,264,273	8,026,601	14,824,438	1,565,850	2,878,671	4,444,521
2034	3,066,687	4,282,489	7,349,176	3,522,731	3,254,252	8,001,455	14,778,438	1,563,180	2,873,679	4,436,859
2035	2,933,154	4,139,178	7,072,332	3,498,436	3,232,023	7,947,925	14,678,384	1,557,343	2,862,806	4,420,149
TOTAL	149,022,227		358,132,730		183,718,822		869,903,928		147,533,147	
		209,110,503		187,195,262		498,989,844		80,237,438		227,770,585

a) Unadjusted for prior overpayments or underpayments of charges. See Table B-19 for total Transportation Charge for each contractor.

DELTA WATER[b] CHARGE FOR EACH CONTRACTOR

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA									
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	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)
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	2,779	0	0	0	0	0	2,779
1965	0	0	0	6,145	75,080	0	0	0	0	81,225
1966	0	0	0	12,267	140,079	0	0	0	0	152,346
1967	0	0	0	26,750	272,885	0	0	0	0	299,635
1968	85,908	220,127	20,202	55,503	453,031	1,692,810	16,217	19,369	303,854	2,867,021
1969	138,668	236,295	13,402	88,649	533,962	2,694,663	15,862	19,080	445,696	4,186,277
1970	181,748	300,953	36,836	95,780	583,583	3,837,097	20,439	30,089	511,579	5,598,104
1971	196,893	321,627	39,565	96,825	615,958	5,144,455	26,157	34,347	702,210	7,178,037
1972	232,855	374,135	42,762	99,941	641,907	7,056,752	25,427	63,173	1,950,388	10,487,340
1973	238,743	391,243	41,448	98,724	1,036,278	7,196,910	27,773	38,896	769,600	9,839,615
1974	261,372	495,762	42,662	99,697	1,155,227	7,895,032	28,487	42,149	1,021,798	11,042,186
1975	289,091	665,820	43,109	107,980	1,207,656	9,255,131	30,164	47,753	1,530,937	13,177,641
1976	326,998	708,687	45,629	109,290	1,334,370	10,494,897	31,586	51,633	1,423,870	14,526,960
1977	328,359	569,029	41,538	113,767	1,377,551	10,789,214	33,317	53,787	1,120,465	14,427,027
1978	369,890	689,159	44,003	117,873	1,584,674	13,199,019	37,887	58,824	1,161,015	17,262,344
1979	415,687	767,885	50,368	115,458	1,677,831	15,168,382	41,829	70,100	1,703,966	20,011,506
1980	412,309	948,005	52,104	126,730	1,778,786	16,797,782	46,770	94,245	1,650,518	21,907,249
1981	502,843	1,198,023	86,628	134,466	2,434,775	22,384,776	65,178	100,237	2,262,520	29,169,446
1982	512,631	1,232,390	72,683	135,709	2,528,276	24,715,764	69,433	107,672	2,254,713	31,629,271
1983	487,729	1,149,332	54,483	148,012	2,075,104	24,177,791	72,574	88,352	481,896	28,735,273
1984	629,940	1,469,834	56,079	163,804	3,521,440	32,631,099	92,486	119,874	1,906,838	40,591,394
1985	754,262	1,816,205	138,931	182,756	4,233,507	40,232,237	120,885	144,440	2,953,833	50,577,056
1986	826,720	2,011,934	123,931	193,377	4,769,326	45,698,936	136,322	154,132	4,078,270	57,992,948
1987	836,840	2,057,921	110,531	217,559	4,694,695	47,664,388	144,451	155,188	4,329,878	60,211,451
1988	821,958	2,071,932	107,212	224,826	4,713,996	48,111,822	140,474	156,847	4,281,553	60,630,620
1989	823,097	2,177,459	108,983	219,086	4,929,224	50,081,039	143,255	164,396	4,437,229	63,083,768
1990	831,354	2,273,110	110,132	220,444	5,186,730	51,955,406	145,275	168,579	4,653,726	65,544,756
1991	829,861	2,268,174	109,876	221,453	5,188,841	51,838,655	145,301	168,203	4,643,567	65,413,931
1992	825,157	2,254,966	109,188	221,730	5,162,243	51,534,010	144,456	167,307	4,616,435	65,035,492
1993	838,748	2,258,723	109,380	230,236	5,170,975	51,552,628	144,712	167,538	4,624,100	65,097,040
1994	842,405	2,268,904	109,908	230,383	5,193,470	51,786,054	145,410	168,191	4,644,990	65,389,715
1995	839,044	2,259,951	109,446	230,315	5,173,554	51,575,091	144,792	167,584	4,626,610	65,126,387
1996	843,630	2,272,751	110,108	230,436	5,201,917	51,871,952	145,674	168,402	4,652,879	65,497,749
1997	836,439	2,253,753	109,120	230,393	5,159,733	51,425,742	144,358	166,996	4,613,866	64,940,400
1998	841,464	2,267,450	109,831	230,533	5,190,249	51,746,040	145,301	167,887	4,641,975	65,340,730
1999	827,266	2,228,798	107,823	230,511	5,104,610	50,845,603	142,624	165,156	4,562,599	64,214,990
2000	831,150	2,240,233	108,416	230,601	5,129,815	51,102,799	143,412	165,871	4,586,068	64,538,365
2001	827,501	2,230,120	107,887	230,837	5,107,518	50,872,038	142,703	165,103	4,565,269	64,248,976
2002	862,167	2,326,900	112,918	231,603	5,320,917	53,105,118	149,360	171,584	4,763,954	67,044,521
2003	858,827	2,317,479	112,429	231,658	5,300,310	52,897,746	148,702	170,945	4,744,598	66,782,694
2004	856,946	2,312,751	112,179	232,695	5,290,438	52,813,449	148,295	170,545	4,734,846	66,672,144
2005	852,673	2,300,909	111,564	232,692	5,264,326	52,543,755	147,475	169,749	4,710,523	66,333,666
2006	850,936	2,290,257	111,002	234,216	5,243,609	52,342,141	146,722	169,010	4,688,429	66,076,322
2007	847,118	2,279,567	110,441	234,253	5,219,836	52,091,934	145,979	168,296	4,666,461	65,763,885
2008	843,670	2,269,897	109,939	234,288	5,198,427	51,869,144	145,307	167,651	4,646,600	65,484,923
2009	873,677	2,352,312	114,222	234,764	5,381,001	53,779,802	150,996	173,169	4,815,793	67,875,736
2010	869,057	2,339,495	113,556	234,766	5,352,578	53,482,752	150,108	172,306	4,789,466	67,504,084
2011	865,664	2,330,648	113,093	234,553	5,333,394	53,279,784	149,498	171,713	4,771,269	67,249,616
2012	862,111	2,320,667	112,575	234,573	5,311,310	53,050,219	148,805	171,055	4,750,762	66,962,077
2013	833,740	2,241,141	108,439	234,601	5,135,527	51,221,654	143,290	165,835	4,587,439	64,671,666
2014	835,279	2,245,266	108,653	231,848	5,144,688	51,317,949	143,575	166,127	4,595,907	64,789,292
2015	847,067	2,277,036	110,301	228,961	5,139,791	52,055,549	145,753	168,256	4,661,082	65,633,796
2016	842,184	2,263,272	109,584	222,862	5,044,369	51,738,855	144,800	167,358	4,632,811	65,166,095
2017	831,315	2,232,732	107,997	208,371	4,844,054	51,036,190	142,682	165,370	4,570,096	64,138,807
2018	831,046	2,231,469	107,932	185,249	4,721,970	51,012,330	133,917	165,305	4,567,506	63,956,724
2019	863,639	2,320,039	112,535	177,110	4,857,137	53,067,910	139,518	171,316	4,749,328	66,458,532
2020	855,264	2,294,975	111,232	174,961	4,769,115	52,486,669	137,559	169,662	4,697,862	65,697,299
2021	853,302	2,289,165	110,932	173,812	4,733,240	52,321,501	137,014	169,308	4,685,938	65,474,212
2022	851,909	2,281,641	110,539	172,473	4,706,061	52,142,264	136,500	169,144	4,670,496	65,241,027
2023	849,751	2,275,130	110,201	172,016	4,687,043	51,995,761	136,019	168,712	4,657,124	65,051,757
2024	844,944	2,270,630	109,987	168,607	4,670,729	51,846,175	135,724	168,671	4,648,274	64,863,741
2025	844,534	2,269,121	109,909	168,027	4,664,822	51,814,267	135,595	168,538	4,645,175	64,819,988
2026	872,290	2,345,167	113,861	168,108	4,831,122	53,579,186	140,818	173,598	4,801,308	67,025,458
2027	870,370	2,339,486	113,565	167,429	4,815,529	53,451,784	140,378	173,185	4,789,641	66,861,367
2028	870,612	2,339,509	113,566	164,955	4,813,737	53,460,865	140,358	173,137	4,789,689	66,866,428
2029	868,964	2,334,260	113,297	164,734	4,799,576	53,335,870	139,973	172,741	4,779,028	66,708,443
2030	868,076	2,330,460	113,101	164,477	4,788,965	53,264,936	139,658	172,546	4,771,229	66,613,448
2031	864,693	2,319,766	112,544	163,117	4,750,628	53,024,754	138,635	171,889	4,749,271	66,295,297
2032	864,308	2,317,748	112,440	162,891	4,745,786	52,976,124	138,426	171,851	4,745,127	66,234,701
2033	887,929	2,382,816	115,821	162,575	4,881,095	54,468,794	142,695	176,203	4,878,720	68,096,648
2034	887,187	2,380,775	115,714	161,981	4,870,030	54,413,906	142,409	176,068	4,874,525	68,022,595
2035	883,919	2,371,791	115,248	161,533	4,843,971	54,200,491	141,613	175,463	4,856,080	67,750,109
TOTAL	48,853,728	127,344,967	6,485,520	12,462,384	279,813,998	2,856,515,631	7,949,147	9,617,706	257,201,067	3,606,244,148

b) See Table B-21 for total Delta Water Charge for each contractor.

TABLE B-22: TOTAL TRANSPORTATION[a] AND

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1962	0	0	0	0	0	0	0	0	0	0
1963	34,103	0	0	0	0	0	0	0	52,892	0
1964	64,236	20,562	14,748	4,467	37,994	1,169	29,073	8,390	84,582	35,768
1965	121,108	38,997	25,633	7,348	41,627	2,127	51,397	15,549	137,892	36,084
1966	220,291	73,722	45,669	12,739	74,670	3,833	92,298	28,262	237,296	62,734
1967	426,148	151,596	87,901	23,956	144,320	7,436	178,805	55,148	442,208	117,940
1968	750,131	317,790	155,626	42,306	256,011	13,117	316,670	97,300	797,134	212,925
1969	1,079,764	478,906	229,708	62,418	378,184	19,060	467,059	140,769	1,229,190	327,991
1970	1,404,428	610,413	321,468	91,454	529,520	25,730	644,468	188,506	1,812,780	476,684
1971	1,737,517	767,135	440,873	130,821	726,443	32,454	872,327	235,769	2,586,668	672,016
1972	2,218,032	963,651	612,865	188,667	1,005,472	44,441	1,195,871	292,507	3,815,045	964,900
1973	2,370,798	1,019,413	757,278	193,891	1,233,221	46,753	1,286,990	318,484	4,085,745	976,330
1974	2,491,618	1,095,754	780,937	207,055	1,273,369	49,635	1,345,772	336,792	4,524,687	1,120,767
1975	2,709,419	1,166,154	826,528	222,349	1,349,079	53,954	1,431,709	360,427	4,701,464	1,226,940
1976	3,173,937	1,172,119	883,745	235,239	1,442,096	58,447	1,508,116	386,473	4,902,494	1,298,728
1977	3,154,582	1,263,942	784,410	248,134	1,284,673	54,915	1,595,413	411,867	5,156,493	1,364,045
1978	3,671,287	1,373,153	997,895	262,291	1,609,092	58,673	1,672,541	433,921	5,238,170	1,416,277
1979	4,271,852	1,376,433	1,067,833	270,699	1,705,971	60,928	1,815,000	454,396	5,198,073	1,357,987
1980	4,956,517	1,508,503	1,177,614	298,397	1,907,299	68,252	1,987,607	503,732	5,711,282	1,501,523
1981	5,783,374	1,871,134	1,332,590	331,664	2,157,759	101,252	2,304,428	607,551	6,521,328	1,703,802
1982	5,533,913	2,016,604	1,420,663	349,577	2,301,955	82,699	2,335,871	644,838	6,803,523	1,936,098
1983	6,267,130	2,109,434	1,928,933	381,165	3,117,856	88,592	2,458,582	660,172	7,017,807	1,821,640
1984	7,753,423	3,042,359	3,035,072	502,366	4,884,893	99,233	2,784,156	748,678	8,157,143	2,622,529
1985	9,976,855	3,540,477	4,079,004	623,992	6,553,931	105,861	2,965,799	1,002,642	9,090,435	2,787,696
1986	10,487,283	4,035,720	4,456,617	675,138	7,168,790	195,673	3,180,524	1,256,495	9,928,783	3,538,301
1987	10,540,178	4,187,271	4,665,661	692,520	7,599,729	130,511	3,263,035	1,269,786	10,513,956	3,458,925
1988	10,274,008	4,129,211	4,635,064	705,178	7,633,913	129,953	3,279,253	1,340,571	10,808,848	3,347,364
1989	11,768,822	4,376,153	4,974,117	763,728	8,274,354	132,517	3,326,608	1,422,251	11,170,686	3,457,627
1990	12,131,474	4,594,494	5,274,739	801,742	8,699,062	134,756	3,365,801	1,501,142	11,898,651	3,711,199
1991	10,254,119	4,752,102	5,263,704	828,289	8,680,863	134,845	11,311,689	1,551,984	12,465,780	3,755,796
1992	10,336,515	4,845,023	5,201,735	832,480	8,578,652	368,368	11,189,620	1,623,278	12,503,850	3,732,287
1993	10,488,048	4,973,479	5,211,794	844,350	8,595,236	382,516	11,225,659	1,708,371	12,638,685	3,746,231
1994	10,666,334	5,179,794	5,270,169	888,501	8,691,526	398,657	11,315,201	1,800,320	13,322,969	3,871,039
1995	10,756,983	5,228,915	5,216,006	883,339	8,602,187	408,725	11,229,184	1,871,943	13,186,903	3,818,724
1996	11,027,837	5,466,926	5,274,191	915,128	8,698,157	426,131	11,343,805	1,979,038	13,674,711	3,905,853
1997	11,135,224	5,465,442	5,179,705	911,488	8,542,310	418,963	11,154,858	2,043,806	13,634,393	3,863,067
1998	11,419,800	5,715,937	5,264,464	968,038	8,682,119	423,956	11,285,775	2,155,277	14,561,850	4,037,359
1999	11,407,809	5,595,921	5,070,802	929,987	8,362,694	409,944	10,918,485	2,184,403	13,952,508	3,868,925
2000	11,667,878	5,812,434	5,118,772	960,648	8,441,813	413,473	11,010,495	2,289,035	14,435,813	3,953,688
2001	11,831,575	5,908,941	5,073,820	972,362	8,367,667	409,614	10,909,295	2,345,766	14,659,807	3,972,187
2002	12,665,168	6,595,270	5,477,522	1,061,452	9,033,528	442,715	11,777,990	2,596,913	15,982,073	4,277,965
2003	12,860,022	6,725,518	5,445,954	1,079,343	8,981,454	439,730	11,700,370	2,663,870	16,309,080	4,316,197
2004	13,080,064	7,680,975	5,394,498	1,067,752	8,896,579	437,136	11,633,198	2,732,449	16,115,171	4,255,602
2005	13,241,698	6,947,725	5,377,494	1,116,259	8,868,546	433,017	11,527,215	2,789,318	16,996,236	4,401,191
2006	13,507,701	6,967,322	5,310,799	1,095,529	8,758,528	429,590	11,438,357	2,856,903	16,647,196	4,314,909
2007	13,743,464	6,921,550	5,276,627	1,114,378	8,702,174	425,802	11,348,946	2,919,463	17,001,196	4,366,728
2008	13,977,460	6,891,910	5,233,539	1,122,232	8,631,092	422,331	11,258,603	2,982,073	17,155,018	3,719,022
2009	15,006,928	7,488,155	5,610,358	1,243,343	9,252,622	451,279	12,019,349	3,277,112	19,109,100	4,789,686
2010	15,230,637	7,408,571	5,509,493	1,195,439	9,086,231	446,683	11,899,598	3,336,477	18,277,555	4,605,964
2011	15,597,529	7,412,363	5,508,367	1,250,047	9,084,396	443,649	11,820,272	3,313,660	19,253,540	4,782,727
2012	15,945,106	7,270,959	5,448,491	1,237,090	8,985,624	440,223	11,731,074	3,287,878	19,035,184	4,726,493
2013	15,532,665	6,819,841	5,115,472	1,178,600	8,422,689	412,779	11,014,776	3,081,426	18,089,907	4,494,444
2014	15,953,035	6,683,823	5,167,176	1,253,969	8,522,315	413,162	11,026,009	3,084,707	19,456,325	4,752,842
2015	16,661,072	7,057,266	5,243,634	1,242,066	8,648,400	423,176	11,295,163	3,159,888	19,167,661	4,699,410
2016	16,794,608	6,749,497	5,170,427	1,245,515	8,527,663	416,749	11,130,835	3,111,665	19,439,907	4,697,565
2017	16,605,583	6,637,448	5,007,696	1,228,335	8,259,265	402,650	10,770,148	3,005,840	19,350,858	4,613,637
2018	16,718,004	6,409,071	4,952,274	1,231,061	8,167,866	398,019	10,655,708	2,971,560	19,549,610	4,590,586
2019	17,985,598	6,804,446	5,259,870	1,317,120	8,675,200	424,200	11,348,784	3,169,493	21,142,189	4,850,273
2020	17,784,090	6,634,848	5,090,639	1,299,457	8,396,100	409,940	10,974,790	3,064,703	20,970,462	4,734,383
2021	18,068,329	6,456,178	4,976,658	1,299,287	8,208,126	401,994	10,713,266	3,008,239	20,905,474	4,682,638
2022	18,534,071	6,227,103	4,886,570	1,251,435	8,059,536	398,759	10,591,408	2,984,764	19,845,974	4,520,453
2023	19,015,034	6,345,618	4,831,926	1,227,624	7,969,404	395,369	10,496,291	2,959,769	19,369,112	4,483,683
2024	19,578,374	6,178,476	4,836,773	1,248,658	7,977,410	394,098	10,463,835	2,950,316	19,728,039	4,614,214
2025	20,155,639	6,110,390	4,786,691	1,217,026	7,894,806	392,928	10,399,941	2,941,810	19,142,903	4,555,606
2026	22,347,960	6,663,474	5,101,449	1,299,533	8,413,958	419,518	11,085,020	3,141,837	20,577,033	4,949,032
2027	23,115,020	6,688,752	5,104,542	1,330,289	8,419,075	417,534	11,024,767	3,126,960	21,113,813	5,126,358
2028	24,005,983	6,607,479	5,055,950	1,269,233	8,338,902	417,860	11,029,171	3,129,478	20,019,730	4,991,021
2029	24,785,859	6,521,551	5,073,244	1,308,785	8,367,446	416,300	10,987,860	3,117,801	20,716,744	5,201,249
2030	24,742,969	6,483,139	5,051,240	1,290,181	8,331,142	415,585	10,969,667	3,112,448	20,401,149	5,216,711
2031	24,463,164	6,489,806	4,977,716	1,255,923	8,209,881	410,855	10,846,637	3,077,053	19,815,371	5,176,388
2032	24,445,958	6,261,499	4,976,124	1,256,748	8,207,247	410,563	10,839,730	3,074,886	19,838,494	5,269,660
2033	25,676,820	6,752,239	5,256,513	1,360,737	8,669,728	431,052	11,381,242	3,228,875	21,687,198	5,797,946
2034	25,490,894	6,632,656	5,188,440	1,311,728	8,557,453	427,932	11,304,282	3,205,508	20,827,271	5,711,573
2035	25,224,543	6,693,198	5,166,978	1,335,159	8,522,063	423,492	11,191,784	3,172,136	21,246,128	5,868,512
TOTAL	874,905,399	335,464,130	278,029,497	60,105,244	457,680,956	20,283,832	548,345,325	139,912,917	945,945,225	246,234,644

DELTA WATER[b] CHARGE FOR EACH CONTRACTOR

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC & WCD	Total	South Bay	
	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
1962	0	0	0	0	0	0	0	0	0	55,537
1963	0	707,040	0	794,035	0	0	0	0	59,816	1,652,536
1964	22,220	1,288,250	9,598	1,621,057	0	0	0	0	99,096	2,823,960
1965	22,324	2,227,522	18,164	2,745,772	0	0	412	412	170,836	4,837,837
1966	38,748	3,983,276	34,159	4,907,697	0	0	575	575	197,632	7,438,854
1967	72,741	7,857,318	69,640	9,635,157	0	0	573	573	256,263	13,118,039
1968	131,380	15,633,682	145,835	18,869,907	0	1,050	1,450	2,500	333,889	25,615,357
1969	202,617	23,643,507	219,939	28,479,112	0	1,225	4,179	5,404	405,735	37,041,693
1970	295,272	31,267,287	279,655	37,947,665	0	3,848	17,397	21,245	444,995	48,647,380
1971	417,147	40,791,458	349,890	49,760,518	0	4,546	19,483	24,029	434,848	61,977,546
1972	546,252	55,967,908	430,666	68,246,277	0	4,929	21,473	26,402	460,574	84,312,593
1973	597,469	60,606,576	444,025	73,936,973	0	7,059	22,100	29,159	435,119	89,325,796
1974	621,182	67,066,796	464,270	81,378,634	0	8,336	22,730	31,066	458,186	98,294,752
1975	654,643	72,907,531	487,199	88,097,396	0	9,416	23,845	33,261	467,775	107,200,497
1976	678,581	76,002,565	484,487	92,227,027	0	7,004	23,579	30,583	490,385	113,469,126
1977	706,955	74,405,747	516,088	90,947,264	0	16,917	24,382	41,299	483,248	112,038,591
1978	733,171	84,473,967	543,225	102,483,663	0	12,635	24,547	37,182	488,818	126,961,690
1979	722,638	84,659,368	534,985	103,496,163	0	16,575	28,674	45,249	506,493	131,005,867
1980	872,460	94,140,239	592,717	115,226,142	0	19,834	26,884	46,718	567,357	145,454,045
1981	956,332	113,590,492	683,739	137,945,445	0	21,682	34,886	56,568	586,289	176,291,044
1982	1,030,137	118,349,275	738,625	143,543,778	0	16,117	43,320	59,437	565,302	184,988,374
1983	1,082,174	120,123,182	839,436	147,896,103	0	15,202	27,383	42,585	619,965	186,331,781
1984	1,234,393	158,412,172	951,214	194,227,631	20,590	15,442	28,996	65,028	620,096	247,135,951
1985	1,308,681	205,564,117	984,652	248,584,142	24,050	16,976	32,438	73,464	736,223	314,871,618
1986	1,399,667	244,467,045	1,057,585	291,847,621	31,753	18,145	33,726	83,624	779,007	368,145,197
1987	1,459,168	279,812,379	1,097,698	328,690,817	37,071	17,794	33,910	88,775	803,789	408,969,947
1988	1,799,402	266,120,928	1,188,842	315,392,535	43,002	17,794	34,509	95,305	795,730	399,020,973
1989	1,859,279	273,638,516	1,310,638	326,475,296	48,934	17,794	35,105	101,833	798,015	413,383,782
1990	1,884,159	279,050,715	1,459,782	334,507,716	56,348	17,794	35,700	109,842	799,895	424,628,481
1991	1,946,919	278,724,497	1,571,028	341,241,615	142,353	407,781	36,295	586,429	801,442	432,041,735
1992	1,969,981	278,454,056	1,673,914	341,309,759	142,353	407,781	36,889	587,023	801,891	431,939,565
1993	2,006,568	280,686,810	1,780,786	344,288,533	142,353	407,781	37,482	587,616	802,082	437,517,688
1994	2,114,228	286,406,232	1,989,750	351,914,720	142,353	407,781	38,075	588,209	802,455	445,891,198
1995	2,114,483	283,414,098	2,149,986	348,881,476	142,353	407,781	38,817	588,951	802,178	442,804,039
1996	2,625,862	292,797,053	2,452,599	360,587,291	142,353	407,781	39,558	589,692	802,529	455,230,679
1997	2,669,481	289,117,755	2,693,173	356,829,665	142,353	407,781	40,299	590,433	802,346	450,829,554
1998	2,866,274	298,908,868	3,118,830	369,408,547	142,353	407,781	41,041	591,175	802,781	463,999,440
1999	2,810,648	288,660,198	3,080,302	357,252,626	142,353	407,781	41,782	591,916	802,715	450,294,025
2000	2,946,645	295,324,529	3,216,580	365,591,803	142,353	407,781	42,672	592,806	802,987	459,107,191
2001	3,052,104	294,631,335	3,206,649	365,341,122	142,353	407,781	43,565	593,699	803,634	458,473,458
2002	3,445,386	320,227,630	3,526,483	397,110,095	142,353	407,781	44,454	594,588	805,597	494,140,569
2003	3,575,761	321,430,775	3,527,370	399,055,444	142,353	407,781	45,344	595,478	817,282	495,878,283
2004	3,640,945	322,806,228	3,554,626	401,295,223	142,353	407,781	46,234	596,368	818,452	497,968,044
2005	3,830,095	322,741,794	3,518,790	401,789,378	142,353	407,781	47,123	597,257	818,442	498,007,710
2006	3,728,328	323,360,505	3,503,185	401,918,852	142,353	407,781	48,161	598,295	818,555	497,789,414
2007	3,716,003	323,291,843	3,465,168	402,293,342	142,353	407,781	49,199	599,333	818,666	497,749,952
2008	3,681,242	323,702,517	3,433,889	402,210,928	142,353	407,781	50,237	600,371	818,775	497,301,124
2009	4,025,024	351,129,819	3,705,997	437,108,772	142,353	407,781	51,275	601,409	820,266	535,560,989
2010	3,855,787	346,284,166	3,654,539	430,791,140	142,353	407,781	52,313	602,447	820,272	528,747,939
2011	3,925,311	349,669,269	3,646,256	435,707,386	142,353	407,781	53,502	603,636	819,699	533,331,560
2012	3,842,065	346,614,017	3,590,686	432,154,890	142,353	407,781	54,688	604,822	819,766	529,404,290
2013	3,570,630	328,840,382	3,360,541	409,934,152	142,353	407,781	56,022	606,156	772,669	503,356,612
2014	3,713,638	328,190,059	3,317,401	411,534,461	142,353	407,781	57,357	607,491	734,781	504,831,646
2015	3,677,444	342,884,960	3,469,350	427,629,490	142,353	407,781	58,428	608,562	679,540	521,602,041
2016	3,628,575	332,009,730	3,349,431	416,272,167	142,353	407,781	59,748	609,882	655,196	509,353,288
2017	3,513,753	328,704,165	3,271,452	411,370,830	142,353	407,781	59,751	609,885	612,943	502,799,351
2018	3,467,718	320,137,104	3,177,399	402,425,980	142,353	407,781	59,748	609,882	534,526	493,288,830
2019	3,678,121	338,858,581	3,380,387	426,894,262	142,353	407,781	57,073	607,207	470,222	521,048,332
2020	3,551,844	332,139,390	3,285,273	418,335,919	142,353	407,781	44,921	595,055	447,300	511,389,856
2021	3,474,423	322,815,669	3,204,141	408,214,422	142,353	407,781	44,080	594,214	429,644	500,819,815
2022	3,327,524	312,618,599	3,117,590	396,363,786	142,353	407,781	42,668	592,802	428,404	488,713,129
2023	3,256,908	314,472,386	3,151,638	397,974,762	142,353	407,781	42,668	592,802	427,590	490,031,274
2024	3,299,417	309,941,107	3,092,178	394,302,895	142,353	407,781	42,667	592,801	426,341	486,128,982
2025	3,218,209	307,792,174	3,066,600	391,674,723	142,353	407,781	42,664	592,798	424,503	483,426,354
2026	3,456,909	333,964,174	3,326,619	424,746,516	142,353	407,781	42,663	592,797	425,155	519,281,544
2027	3,520,113	335,992,308	3,328,741	428,308,272	142,353	407,781	42,661	592,795	424,136	522,593,799
2028	3,380,228	332,014,544	3,300,394	423,559,973	142,353	407,781	42,659	592,793	422,955	517,823,533
2029	3,465,676	332,813,364	3,265,446	426,041,325	142,353	407,781	42,657	592,791	421,576	520,070,466
2030	3,424,393	330,903,501	3,245,552	423,587,677	142,353	407,781	42,656	592,790	420,172	517,464,374
2031	3,340,014	336,345,710	3,228,330	427,636,848	142,353	407,781	42,655	592,789	417,093	521,007,068
2032	3,342,636	334,133,264	3,147,701	425,204,510	142,353	407,781	42,653	592,787	417,351	518,504,857
2033	3,623,018	366,455,758	3,368,460	463,689,586	142,353	407,781	42,652	592,786	417,208	559,551,043
2034	3,505,370	366,231,462	3,321,012	461,715,581	142,353	407,781	42,651	592,785	413,565	557,308,999
2035	3,548,763	374,684,099	3,328,605	470,405,460	142,353	407,781	42,650	592,784	409,728	565,328,946
TOTAL	169,723,656	17,338,085,342	157,101,580	21,571,817,747	6,667,633	18,638,259	2,675,613	27,981,505	42,920,786	26,704,771,429

TABLE B-23: EQUIVALENT UNIT CHARGE FOR WATER SUPPLY FOR EACH CONTRACTOR [a]

(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		
FEATHER RIVER AREA							
City of Yuba City	.00	.00	.00	.00	.00	22.33	22.33
County of Butte	.00	.00	.00	.00	.00	15.21	15.21
Plumas County Flood Control and Water Conservation District	17.92	1.98	.00	.00	19.90	15.72	35.62
Feather River Area	1.83	.14	.00	.00	1.97	16.57	18.54
NORTH BAY AREA							
Napa County Flood Control and Water Conservation District	112.77	20.03	5.55	15.30	153.65	10.21	163.86
Solano County Flood Control and Water Conservation District	82.63	14.59	.96	6.37	104.55	15.83	120.38
North Bay Area	94.05	16.65	2.70	9.75	123.15	13.71	136.86
SOUTH BAY AREA							
Alameda County Flood Control and Water Conservation District, Zone 7	16.42	21.23	12.84	17.34	67.83	15.52	83.35
Alameda County Water District	15.39	16.84	11.85	14.68	58.76	13.57	72.33
Santa Clara Valley Water District	17.64	13.42	9.08	11.95	52.09	11.49	63.58
South Bay Area	17.02	15.29	10.20	13.32	55.83	12.52	68.35
SAN JOAQUIN VALLEY AREA							
County of Kings	3.87	2.72	4.92	6.02	17.53	13.45	30.81
Devil's Den Water District	8.36	10.87	5.90	7.90	33.03	11.63	44.54
Dudley Ridge Water District	4.57	3.18	4.10	5.40	17.25	11.95	29.06
Empire West Side Irrigation District	2.70	2.53	3.61	4.86	13.70	12.60	26.18
Kern County Water Agency	8.29	6.58	6.40	7.97	29.24	12.79	42.65
Oak Flat Water District	1.75	1.55	2.56	3.33	9.19	11.50	20.56
Tulare Lake Basin Water Storage District	4.68	3.27	4.16	5.60	17.71	12.19	29.81
San Joaquin Valley Area	7.67	6.08	6.40	7.56	27.71	12.67	40.86
CENTRAL COASTAL AREA							
San Luis Obispo County Flood Control and Water Conservation District	22.92	30.73	8.90	16.26	78.81	20.56	99.37
Santa Barbara County Flood Control and Water Conservation District	23.51	31.34	8.90	16.26	80.01	20.53	100.54
Central Coastal Area	23.30	31.12	8.90	16.26	79.58	20.54	100.12
SOUTHERN CALIFORNIA AREA							
Antelope Valley-East Kern Water Agency	57.16	40.35	34.45	62.97	194.93	29.92	224.85
Castaic Lake Water Agency	68.16	37.54	55.05	45.17	205.92	23.28	229.20
Coachella Valley Water District	40.08	29.57	59.06	67.24	195.95	14.56	210.51
Crestline-Lake Arrowhead Water Agency	85.04	57.08	48.52	82.68	273.32	25.58	298.90
Desert Water Agency	40.71	30.04	59.58	67.96	198.29	14.57	212.86
Littlerock Creek Irrigation District	43.31	29.32	43.02	71.74	187.39	22.12	209.51
Mojave Water Agency	60.63	46.01	59.83	92.99	259.46	24.58	284.04
Palmdale Water District	60.16	41.14	46.08	87.33	234.71	34.02	268.73
San Bernardino Valley Municipal Water District	129.60	86.63	41.27	66.58	324.08	36.63	360.71
San Gabriel Valley Municipal Water District	112.86	77.91	50.94	55.29	297.00	33.85	330.85
San Gorgonio Pass Water Agency	122.33	84.04	50.62	78.58	335.57	29.45	365.02
The Metropolitan Water District of Southern California	71.03	41.84	52.21	42.78	207.86	22.39	230.25
Ventura County Flood Control District	81.58	47.03	47.37	64.48	240.46	23.56	264.02
Southern California Area	71.31	43.13	51.34	46.90	212.68	23.03	235.71
ALL AREAS	37.87	23.67	26.56	25.65	113.75	17.63	131.38

a) Hypothetical charges, which, if assessed on all entitlement water delivered to date, all surplus water delivered prior to May 1, 1973, and all entitlement water now estimated to be delivered during the remainder of the project repayment period (Table B5-B), would provide a sum at the end of the period financially equivalent to all Transportation Charge and Delta Water Charge payments required under a water supply contract, considering interest at the Project Interest Rate, 4.727 percent per annum.

TABLE B-24: EQUIVALENT UNIT TRANSPORTATION COSTS OF WATER DELIVERED FROM OR THRU EACH AQUEDUCT REACH[a]

(in dollars per acre-foot)

Aqueduct Reach	Unit Costs of Reach[b]					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
North Bay Aqueduct										
1	43.08	5.27	2.04	3.62	54.01	43.08	5.27	2.04	3.62	54.01
2	48.38	3.77	.00	.00	52.15	91.46	9.04	2.04	3.62	106.16
3A	4.54	4.79	2.30	3.49	15.12	96.00	13.83	4.34	7.11	121.28
3B	43.96	13.31	4.36	9.36	70.99	139.96	27.14	6.40	12.98	186.48
South Bay Aqueduct										
1	6.08	10.12	7.59	9.79	33.58	7.72	12.24	10.94	14.37	45.27
2	.56	1.13	.00	.00	1.69	8.28	13.37	10.94	14.37	46.96
4	1.91	1.88	.00	.00	3.79	10.19	15.25	10.94	14.37	50.75
5	4.06	1.24	.00	.00	5.30	14.25	16.49	10.94	14.37	56.05
6	.23	.19	.00	.00	.42	14.48	16.68	10.94	14.37	56.47
7	1.85	.29	.00	.00	2.14	16.33	16.97	10.94	14.37	58.61
8	2.71	.38	.00	.00	3.09	19.04	17.35	10.94	14.37	61.70
9	5.26	1.50	.00	.00	6.76	24.30	18.85	10.94	14.37	68.46
California Aqueduct										
1	1.64	2.12	3.35	4.58	11.69	1.64	2.12	3.35	4.58	11.69
2A	1.17	.31	.00	.00	1.48	2.81	2.43	3.35	4.58	13.17
2B	.57	.14	.00	.00	.71	3.38	2.57	3.35	4.58	13.88
3	.47	.13	.00	.00	.60	3.85	2.70	3.35	4.58	14.48
4	.79	.89	1.58	2.29	5.55	4.64	3.59	4.93	6.87	20.03
5	.64	.17	.00	.00	.81	5.28	3.76	4.93	6.87	20.84
6	.17	.07	.00	.00	.24	5.45	3.83	4.93	6.87	21.08
7	.69	.35	.00	.00	1.04	6.14	4.18	4.93	6.87	22.12
8C	.02	.05	.00	.00	.07	6.16	4.23	4.93	6.87	22.19
8D	.37	.22	.00	.00	.59	6.53	4.45	4.93	6.87	22.78
9	.28	.18	.00	.00	.46	6.81	4.63	4.93	6.87	23.24
10A	.32	.21	.00	.00	.53	7.13	4.84	4.93	6.87	23.77
11B	.48	.14	.00	.00	.62	7.61	4.98	4.93	6.87	24.39
12D	.46	.14	.00	.00	.60	8.07	5.12	4.93	6.87	24.99
12E	.31	.23	.00	.00	.54	8.38	5.35	4.93	6.87	25.53
13B	.70	.30	.00	.00	1.00	9.08	5.65	4.93	6.87	26.53
14A	2.61	2.29	2.84	4.18	11.92	11.69	7.94	7.77	11.05	38.45
14B	.41	.23	.00	.00	.64	12.10	8.17	7.77	11.05	39.09
14C	.36	.19	.00	.00	.55	12.46	8.36	7.77	11.05	39.64
15A	1.91	2.49	3.47	5.14	13.01	14.37	10.85	11.24	16.19	52.65
16A	3.20	4.09	7.52	10.97	25.78	17.57	14.94	18.76	27.16	78.43
17E	11.09	10.21	26.28	37.71	85.29	28.66	25.15	45.04	64.87	163.72
17F	2.94	.05	.00	.00	2.99	31.60	25.20	45.04	64.87	166.71
18A	2.42	.69	.00	-2.40	.71	34.02	25.89	45.04	62.47	167.42
19	1.82	.84	.00	.00	2.66	35.84	26.73	45.04	62.47	170.08
19C	.00	.00	.00	.00	.00	35.84	26.73	45.04	62.47	170.08
20A	1.52	.65	.00	.00	2.17	37.36	27.38	45.04	62.47	172.25
20B	1.70	.69	.00	.00	2.39	39.06	28.07	45.04	62.47	174.64
21	1.02	.46	.00	.00	1.48	40.08	28.53	45.04	62.47	176.12
22A	.56	.34	.00	.00	.90	40.64	28.87	45.04	62.47	177.02
22B	6.82	7.17	8.18	13.01	35.18	47.46	36.04	53.22	75.48	212.20
23	.90	.42	.00	.00	1.32	48.36	36.46	53.22	75.48	213.52
24	4.32	1.25	.00	.00	5.57	52.68	37.71	53.22	75.48	219.09
25	2.28	.07	.00	.00	2.35	54.96	37.78	53.22	75.48	221.44
26A	3.13	3.61	.00	-25.71	-18.97	58.09	41.39	53.22	49.77	202.47
28G	5.48	1.19	.00	.00	6.67	63.57	42.58	53.22	49.77	209.14
28H	5.30	.77	.00	.00	6.07	68.87	43.35	53.22	49.77	215.21
28J	57.38	26.27	.00	.00	83.65	126.25	69.62	53.22	49.77	298.86
West Branch										
29A	4.31	7.12	3.43	4.88	19.74	35.91	32.32	56.65	54.65	179.53
29F	3.15	.74	.00	.00	3.89	39.06	33.06	53.22	75.48	200.82
29G	10.80	2.80	.00	-11.36	2.24	49.86	35.86	53.22	64.12	203.06
29H	6.27	5.65	.00	.00	11.92	56.13	41.51	53.22	64.12	214.98
29J	11.51	.74	.00	-22.29	-10.04	67.64	42.25	53.22	41.83	204.94
30	18.37	1.20	.00	.00	19.57	86.01	43.45	53.22	41.83	224.51
Coastal Branch										
31A	5.96	11.16	2.68	3.70	23.50	12.49	15.61	7.61	10.57	46.28
33A	2.68	4.55	.00	.00	7.23	15.17	20.16	7.61	10.57	53.51
34	.14	.11	.00	.00	.25	15.31	20.27	7.61	10.57	53.76
35	.36	.24	.00	.00	.60	15.67	20.51	7.61	10.57	54.36

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

b) Hypothetical charges which, if assessed on all entitlement water delivered to date, all surplus water delivered prior to May 1, 1973, and all entitlement water now estimated to be delivered during the remainder of the Project repayment period (Table B-5B), would provide a sum at the end of the period financially equivalent to all Transportation Charges required under the water supply contract, considering interest at the Project Interest Rate of 4.727 percent per annum.

TABLE B-25: ANNUAL SURPLUS WATER DELIVERIES

Calendar Year	Calendar Year Deliveries (in acre-feet)													
	SOUTH BAY AREA				SAN JOAQUIN VALLEY AREA								SO.CAL. AREA	
	ACFC & WCD Zone 7	ACWD	SCVWD	Area Total	DDWD	DRWD	EWSID	HWD[a]	KCWA	OFWD	TLBWSD	Area Total	LCID	Total All Areas
1973[b]	0	0	2,499	2,499	4,104	13,192	2,814	5,600	163,744	1,013	63,988	254,455	80	257,034
1974	0	0	2,934	2,934	4,128	33,391	1,539	1,972	299,433	3,471	68,989	412,923	67	415,924
1975	0	0	18,470	18,470	7,495	40,555	3,448	3,759	410,820	3,576	132,206	601,859	356	620,685
1976	3,636	4,147	24,705	32,488	5,727	30,922	3,457	3,720	442,150	3,840	57,806	547,622	0	580,110
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	7,586	0	0	8,623	6	0	16,215	0	16,215
1979	0	0	15,998	15,998	0	38,545	0	1,000	524,247	698	66,342	630,832	0	646,830
1980[c]	0	0	14,278	14,278	6,092	39,079	0	0	327,233	718	14,817	387,939	0	402,217
1981[c]	0	0	18,920	18,920	10,647	32,327	2,992	0	624,581	2,788	215,926	889,261	247	908,428
1982[c]	0	0	1,303	1,303	6,359	14,463	926	0	124,736	721	67,365	214,570	0	215,873
1983	0	0	0	0	0	13,019	0	0	0	0	0	13,019	0	13,019
1984	0	0	3,663	3,663	7,419	19,500	0	0	230,691	1,644	0	259,254	0	262,917
1985	0	0	9,638	9,638	6,095	7,636	0	0	180,824	764	96,887	292,206	0	301,844
Total	3,636	4,147	112,408	120,191	58,066	290,215	15,176	16,051	3,337,082	19,239	784,326	4,520,155	750	4,641,096

a) District merged with Tulare Lake Basin Water Storage District effective January 1, 1981.
b) May through December only.
c) Includes unscheduled water (called extra surplus water in 1980).

TABLE B-26: POWER COSTS FOR PUMPING SURPLUS WATER

(in dollars)

Calendar Year	South Bay Aqueduct	CALIFORNIA AQUEDUCT							Combined Total
	Reach 1	Reach 1	Reach 4	Reach 14A	Reach 15A	Reach 16A	Reach 17E	Reach 31A	
	South Bay and Del Valle Pumping Plant	Banks Delta Pumping Plant	Dos Amigos Pumping Plant	Buena Vista Pumping Plant	Wheeler Ridge Pumping Plant	Chrisman Wind Gap Pumping Plant	A.D. Edmonston Pumping Plant	Las Perillas & Badger Hill Pumping Plants	
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[b]									
Grand Total	554,840	9,503,401	4,141,287	1,171,210	270,090	92,493	6,050	417,613	16,157,059

a) May through December only.
b) Amounts not available at time of publication.

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

(in dollars)

CALENDAR YEAR	South Bay Area		San Joaquin Valley Area						So. Calif. Area		Total
	ACWD	SCVWD	DDWD	DRWD	EWSID	KCWA	OFWD	TLBWSD	AVEK	LCID	
1978											
Capacity	0	3,275	0	14,642	0	154,051	4	23,619	0	0	195,591
Energy	0	0	0	10,119	0	11,505	6	0	0	0	21,630
Replacement	0	0	0	248	0	281	0	0	0	0	529
Administrative	0	0	0	3,793	0	4,312	3	0	0	0	8,108
Total	0	3,275	0	28,802	0	170,149	13	23,619	0	0	225,858
1979											
Capacity	0	37,413	0	37,615	0	547,875	417	72,315	0	0	695,635
Energy	0	54,354	0	51,418	0	774,587	651	89,833	0	0	970,843
Replacement	0	413	0	886	0	7,633	5	2,042	0	0	10,979
Administrative	0	4,005	0	20,051	0	116,977	176	46,075	0	0	187,284
Total	0	96,185	0	109,970	0	1,447,072	1,249	210,265	0	0	1,864,741
1980											
Capacity	0	41,641	8,485	40,160	0	636,135	432	102,900	0	0	829,753
Energy	0	48,510	13,101	52,131	0	553,902	666	19,766	0	0	688,076
Replacement	0	533	3,332	1,255	0	149,588	134	5,705	0	0	160,547
Administrative	0	5,638	3,815	21,859	0	281,776	666	22,258	0	0	336,012
Total	0	96,322	28,733	115,405	0	1,621,401	1,898	150,629	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	1,086,041
Energy	0	61,028	22,575	42,078	3,897	980,142	2,475	281,071	0	2,808	1,396,074
Replacement	0	3,538	4,099	12,446	1,152	275,232	521	83,132	0	431	380,551
Administrative	725	11,192	6,160	19,221	1,869	348,397	1,950	146,357	0	123	535,994
Total	725	126,464	47,442	114,419	9,438	2,388,646	6,547	699,798	0	5,181	3,398,660
1982											
Capacity	0	55,431	20,739	74,514	6,103	1,658,571	434	339,639	370,522	0	2,525,953
Energy	0	4,386	13,578	18,876	1,208	184,594	643	87,922	0	0	311,207
Replacement	0	105	2,462	5,596	361	54,018	135	26,070	0	0	88,747
Administrative	0	7,328	3,710	5,487	698	185,494	676	50,524	0	0	253,917
Total	0	67,250	40,489	104,473	8,370	2,082,677(a	1,888	504,155	370,522	0	3,179,824
1983											
Capacity	0	1,698	187	3,850	60	48,348	0	3,101	0	0	57,244
Energy	0	0	0	62,996	0	0	75	0	0	0	63,071
Replacement	0	0	0	5,851	0	0	6	0	0	0	5,857
Administrative	0	0	0	6,510	0	0	14	0	0	0	6,524
Total	0	1,698	187	79,207	60	48,348	95	3,101	0	0	132,696
1984											
Capacity	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	2,724,362
Replacement	0	782	3,334	8,763	0	103,670	351	0	0	0	116,900
Administrative	2,450	7,160	6,800	9,380	0	36,460	6,340	0	0	0	68,590
Total	2,450	78,827	108,303	240,599	0	2,462,844	16,829	0	0	0	2,909,852
1985(b	-	-	-	-	-	-	-	-	-	-	-
Grand Total	3,175	470,021	225,154	792,875	17,868	10,221,137	28,519	1,591,567	370,522	5,181	13,726,019

a) 1982 costs are preliminary and may change when 1982 exchange is taken into consideration.
b) 1985 costs not available at time of publication.

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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	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975
OPERATIONS FOR PRIOR YEAR	1	SWP Accomplishments through 1985	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 1985	2	2	16	19	5	5	5	5	5	5	5
	3	Historical Summary of Entitlements, Deliveries, and Water Conveyed	3	3	11	14	2	1	1	1	1	1	1
	4	Summary of 1985 Deliveries and Credits to Long-Term Contractors	4	4	12	15	3	2	2	2	2	2	2
	5	Monthly Water Deliveries in 1985	5	5	13	16	4	3	3	3	3	3	3
	6	Monthly Power Operations in 1985	6	6	18	21	6	6	6	6	6	5	6
	6A	Reconciliation of 1985 SWP and CVP Energy Use at SWP Plants and Joint-Use Facilities	6A	none	none	none	none	none	none	none	none	none	none
	7	SWP Power and Transmission Service Purchases in 1985	7	7	none	none	none	none	none	none	none	none	none
	8	SWP Power Sales in 1985	8	8	none	none	none	none	none	none	none	none	none
	9	Recreation Use at SWP Facilities in 1985	9	9	19	22	Ex.26	p.138	p.133	p.95	p.81	p.66	none
	10	Fish Planted at SWP Facilities in 1985	10	10	20	23	Ex.27	none	none	none	none	none	none
CONTRACT AMENDMENTS	11	Water Supply Contract Amendments as of June 30, 1986	11	11	Fig.16	Fig.19	Fig.6	Fig.6	Fig.6	Fig.6	Fig.6	Fig.7	Fig.7
DESIGN AND CONSTRUCTION ACTIVITIES	12	SWP Design Activities in Progress, July 1985-June 1986	12	12	8	10	Ex.10	none	none	none	none	none	none
	13	SWP Construction Activities in Progress, July 1985-June 1986	13	13	10	12	Ex.14	none	none	none	none	none	none
FUTURE OPERATIONS	14	Water Contractors' Requests for Entitlement Water, 1985 through 1990	14	14	14	17	Ex.17	p.89	p.94	p.66	p.57	p.28	p.26
	15	Projected Water Deliveries and Energy Requirements	15	15	none	none	none	none	none	none	none	none	none
	16	Projected Electrical Capacity Requirements	16	16	none	none	none	none	none	none	none	none	none
	17	Summary of Major SWP Power Contracts	17	17	Fig.17	Fig.20	Fig.19	p.102	none	none	none	none	none
	18	Projected Energy Resources and Costs	18	18	7	9	Ex.29	p.104	none	none	none	none	none
FUTURE COSTS AND FINANCING	19	SWP Financial Analysis, June 30, 1986	19	19	21	24	7	7	7	7	none	7	7
	20	SWP Capital Expenditures	20	20	22	25	8	8	8	8	7	8	8
	21	Application of Revenue Bond Proceeds	21	21	23	26	none	none	none	none	none	none	none
	22	Projected Bond Sales	22	22	26	29	9A	9A	9A	none	none	none	none
	23	Revenue Bond Proceeds Affecting the Project Interest Rate	23	23	24	27	none	none	none	none	none	none	none
	24	Actual Bond Sales and Project Interest Rates	24	24	25	28	9	9	9	9	none	9	9
	25	SWP Operation, Maintenance, Power, and Replacement Costs	25	25	27	30	10	10	10	10	8	10	10
	26	Annual Service on Bonds Sold through June 30, 1986	26	26	28	31	11	11	11	11	none	11	11
	27	Estimated Future Unit Water Charges	27	27	6	7	Ex.2	p.19	Fig.1	none	none	none	none

MATERIAL IN BULLETIN

SUBJECT		APPENDIX B (No Allowance for Future Price Escalation, for Billing Purposes)		CORRESPONDING TABLE OR EXHIBIT NUMBER IN PREVIOUS BULLETIN 132									
		TABLE NO.	TITLE	1983 THRU 1985	1982*	1981	1980	1979	1978	1977	1976	1975	1974
AQUEDUCT REACHES		B-1	Factors for Distributing Reach Capital Costs Among Contractors	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	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	none	B-3	B-3	B-3	B-3	B-3	B-3	B-3	B-3
ANNUAL WATER DELIVERY QUANTITIES		B-4	Annual Entitlements to Project Water	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	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	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	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	none	B-7	B-7	B-7	B-7	B-7	B-7	B-7	B-7
		B-8	Capital Costs of Requested Delivery Structures	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	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	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	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	none	B-12	B-12	B-12	B-12	B-12	B-12	B-12	B-12
	DELTA WATER CHARGE	B-13	Capital and Operating Costs of Project Conservation Facilities to be Reimbursed through Delta Water Charge	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	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	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	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	none	none	none	none	none	none	none	none	none
		B-17	Unit Variable OMP&R Component of Transportation Charge	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	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	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	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	none	B-20B	none	none	none	none	none	none	none
TOTAL CHARGES		B-21	Total Delta Water Charge for Each Contractor	B-21	none	B-21	B-21	B-21	B-21	B-21	B-21	none	none
		B-22	Total Transportation and Delta Water Charge for Each Contractor	B-22	none	B-22	B-22	B-22	B-22	B-22	B-22	none	none
EQUIVALENT COSTS OF WATER		B-23	Equivalent Unit Charge for Water Supply for Each Contractor	B-23	none	B-23	B-23	B-23	B-23	B-23	B-23	B-21	B-21
		B-24	Equivalent Unit Transportation Costs of Water Delivered from or through Each Aqueduct Reach	B-24	34	B-24	B-24	B-24	B-24	B-24	B-24	B-22	B-22
SURPLUS WATER SERVICE AND CHARGES		B-25	Annual Surplus Water Deliveries	B-25	none	B-25	B-25	B-25	B-25	B-25	B-25	none	none
		B-26	Power Costs for Pumping Surplus Water	B-26	none	B-26	B-26	B-26	B-26	B-26	B-26	none	none
		B-27	Power, Replacement and Administrative Charge for Surplus Water Deliveries	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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