

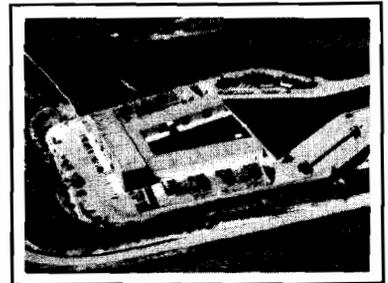


State of California
The Resources Agency

Department of
Water Resources

Management of the California State Water Project

Bulletin 132-84
September 1984



ON THE COVER: The A. D. Edmonston Pumping Plant, located 293 miles south of the Sacramento-San Joaquin Delta, lifts SWP water 1,926 feet over the Tehachapi Mountains. The final three of the plant's fourteen pumping units are currently being installed; their completion will bring the total pumping capacity to 4,410 cfs. The combination of flow rate and height of lift at the A. D. Edmonston Pumping Plant is the world's largest.

**Department of
Water Resources
Bulletin 132-84**

Management of the California State Water Project

September 1984

Gordon K. Van Vleck
Secretary for Resources

George Deukmejian
Governor

David N. Kennedy
Director

**The Resources
Agency**

**State of
California**

**Department of
Water Resources**



Lake Perris, the southern terminous of the California Aqueduct, attracts more recreation use than any other SWP reservoir. The beach and harbor areas shown here were created by selective removal of material for construction of the dam. The extensive recreation facilities, developed by the California Department of Parks and Recreation using recreation bond issue funds, include swimming beaches, boat launch and marina facilities, fishing platforms, 431 campsites, and over 1,000 picnic sites. On busy days, over 24,000 recreationists may be found at the Lake Perris Recreation Area.

FOREWORD

This is the twenty-second report of the Bulletin 132 series, the annual summary of operation and management of the State Water Project. Bulletin 132-84 summarizes project operations during calendar year 1983 and describes other management activities, with primary emphasis on the period between July 1, 1983 and June 30, 1984. It also includes chapters on the present and future outlook for (1) water supplies, (2) power supplies, and (3) costs and financing. As usual, Appendix B presents information supporting the water contractors' Statements of Charges for 1985.



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

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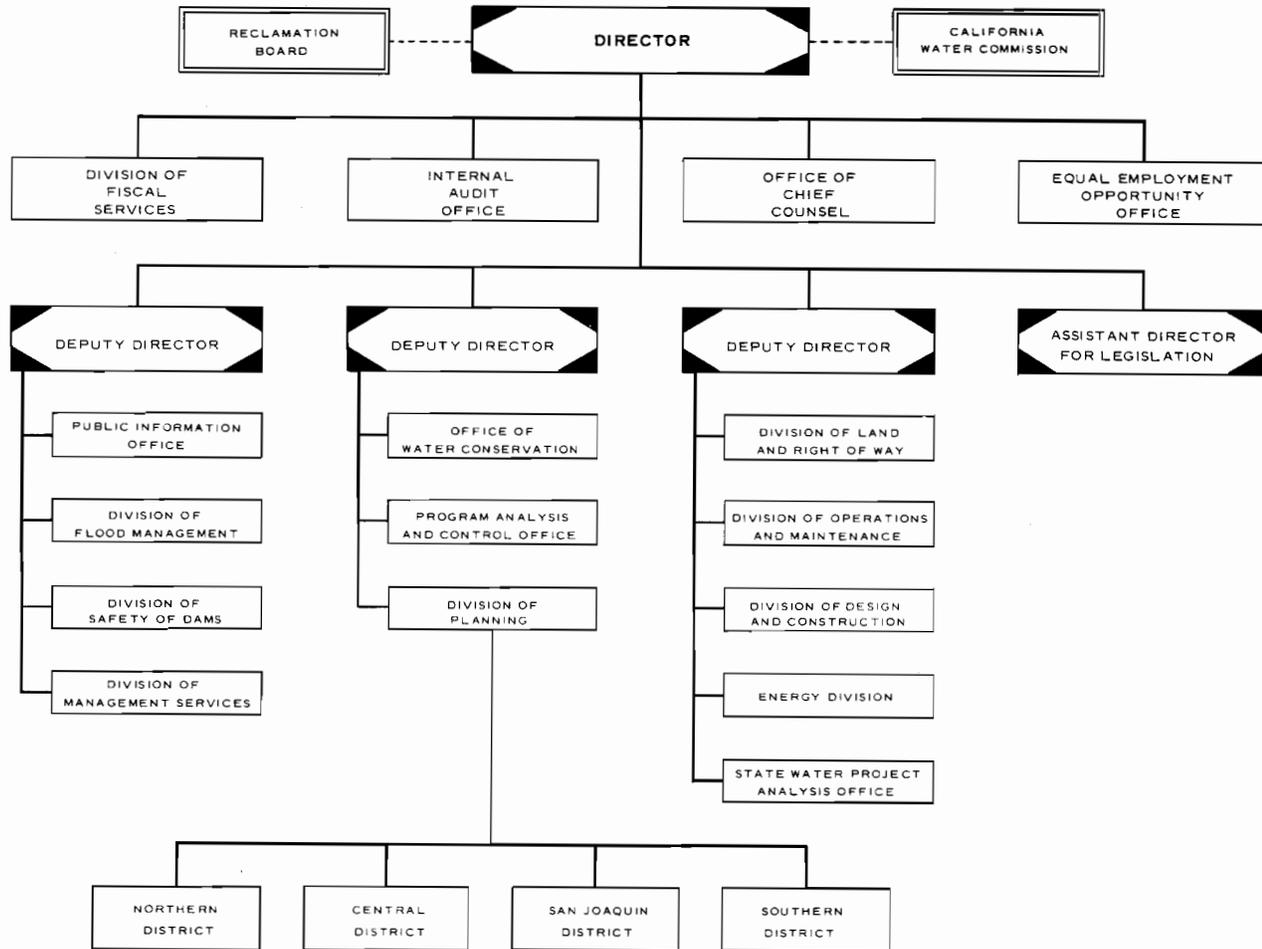
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The California Water Commission serves as a policy advisory body to the Director of Water Resources on all California water resources matters. The nine-member citizen Commission (with two current vacancies) provides a water resources forum for the 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

Bulletin 132 is published annually to document the management of the SWP. The organization of this report, the twenty-second of the series, differs from that of its predecessors. Chapter II summarizes SWP operations during calendar year 1983. Chapters III and IV document project administration and design and construction activities, with primary emphasis on the twelve months ending June 30, 1984. Chapters V and VI analyze present and future water and power supplies. Chapter VII examines future costs and financing. Chapter VIII presents profiles of 6 of the 30 SWP contractors. As usual, Appendix B documents the computation of water charges to be paid by the contractors during the next calendar year (1985).

The State Water Project

The SWP is one of the most ambitious water transfer systems ever constructed. Its facilities extend over 500 miles to deliver water from northern California to areas as far south as San Diego County. The project, conceived by former State Engineer A. D. Edmonston, was authorized by the Legislature in 1951. In 1959, the Legislature passed the Burns-Porter Act, which provided the major financing for the initial SWP facilities. In 1960, California's voters approved a \$1.75 billion bond issue under the Burns-Porter Act, a water contracting program was initiated, and more than a decade of intensive construction activity began.

SWP water deliveries commenced to the South San Francisco Bay area in 1962, to Kern County in 1968 and finally, to southern California in 1972. The period of initial construction of the SWP facilities ended in 1973 with the dedication of Lake Perris, the southern terminus of the California Aqueduct.

The present SWP facilities, shown on Figure 1, include 22 dams and reservoirs, 18 hydropower and pumping plants, and over 530 miles of conveyance facilities. The major facilities for future construction are Phase II of the North Bay Aqueduct and the Coastal Branch of the California Aqueduct. 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; planning studies of most of these are continuing, as described in Chapter V.

SWP Service Areas

After voters approved the bond issue in 1960, the State signed water delivery contracts with the public agencies that wished to be included in the SWP service areas. The guiding principle of these contracts is that the recipients of project services repay all reimbursable project costs. Today, 30 long-term contracts are in effect, calling for the eventual delivery of 4.2 million acre-feet of water annually.

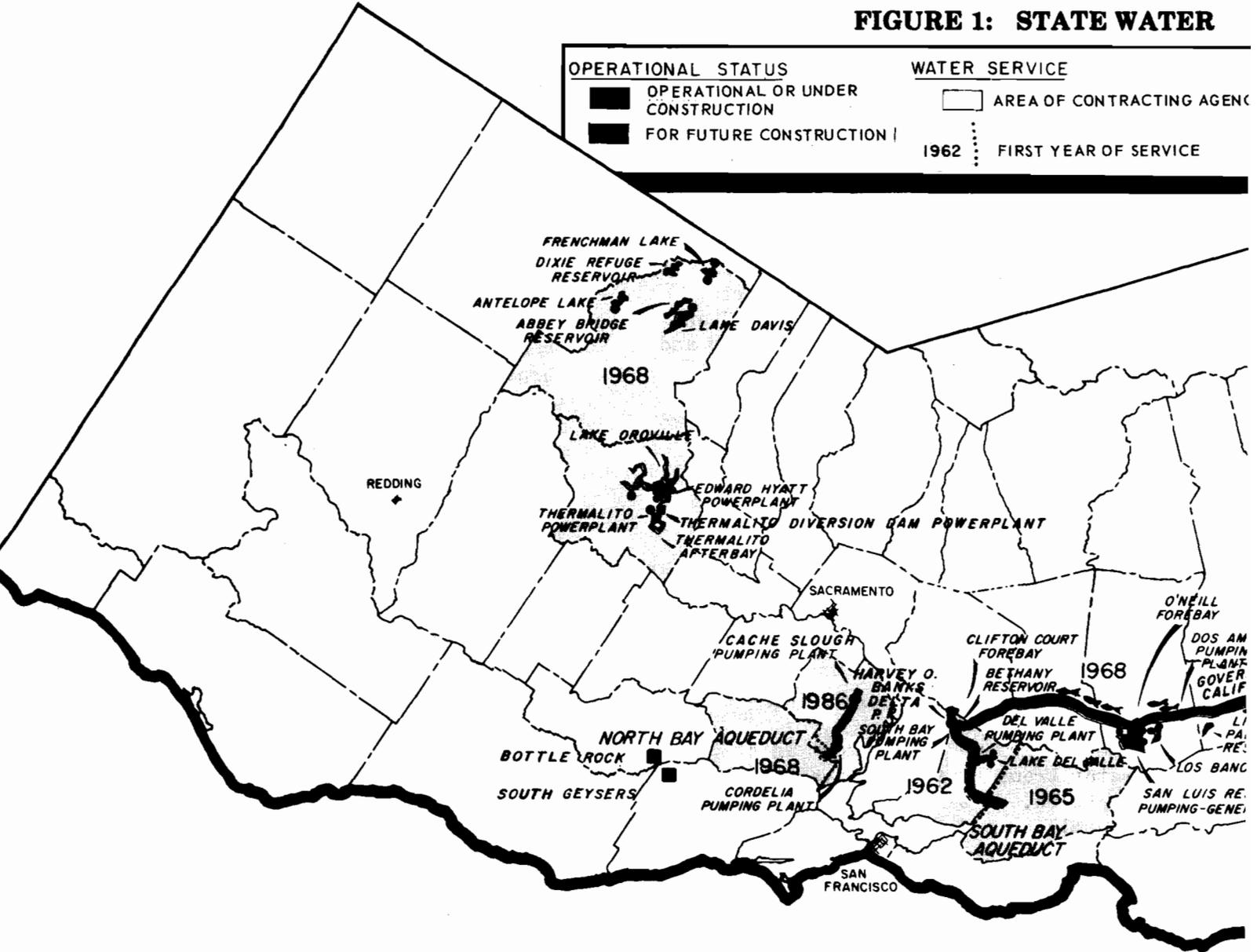
Figure 2 shows the boundaries of the 30 public agencies that have long-term contracts for SWP service. Together, they constitute 24 percent of the State's area and contain 68 percent of the population.

Seven contractors have yet to receive water from SWP facilities. The contracts of six of these contractors specify that initial deliveries will be made in 1980 or thereafter; Palmdale Water District's contract provides for SWP water deliveries to have begun in 1972 but the District has not yet taken any SWP water. An eighth contractor, Napa County Flood Control and Water Conservation District, has received

FIGURE 1: STATE WATER

OPERATIONAL STATUS
 [Solid Black Box] OPERATIONAL OR UNDER CONSTRUCTION
 [Dashed Black Box] FOR FUTURE CONSTRUCTION

WATER SERVICE
 [White Box] AREA OF CONTRACTING AGENCY
 [Dotted Line] 1962 FIRST YEAR OF SERVICE



DAMS AND RESERVOIRS							
Name of Reservoir	Reservoirs ^(a)			Dams			
	Capacity (acre-feet)	Surface Area (acres)	Shore-line (miles)	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	77,845,000
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	6,960,000
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			175,000	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.

Name	Length (miles)				Channel and Tunnel Reservoir
	Total	Canal	Pipeline	Tunnel	
North Bay Aqueduct	29.2	0	29.2	0	0
South Bay Aqueduct	42.9	8.4	32.9	1.6	0
Subtotal	72.1	8.4	62.1	1.6	0
California Aqueduct (main line):					
Delta to O'Neill Forebay	66.4	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	38.3	3.8	2.9
Subtotal, main line	444.0	385.0	40.8	11.7	6.5
California Aqueduct (branches):					
West Branch	31.9	9.1	6.4	7.2	9.2
Coastal Branch (under review)	96.2	14.8 ^(a)	81.4	0	0
Subtotal, branches	128.1	23.9	87.8	7.2	9.2
Totals	644.2	417.3	190.7	20.5	15.7

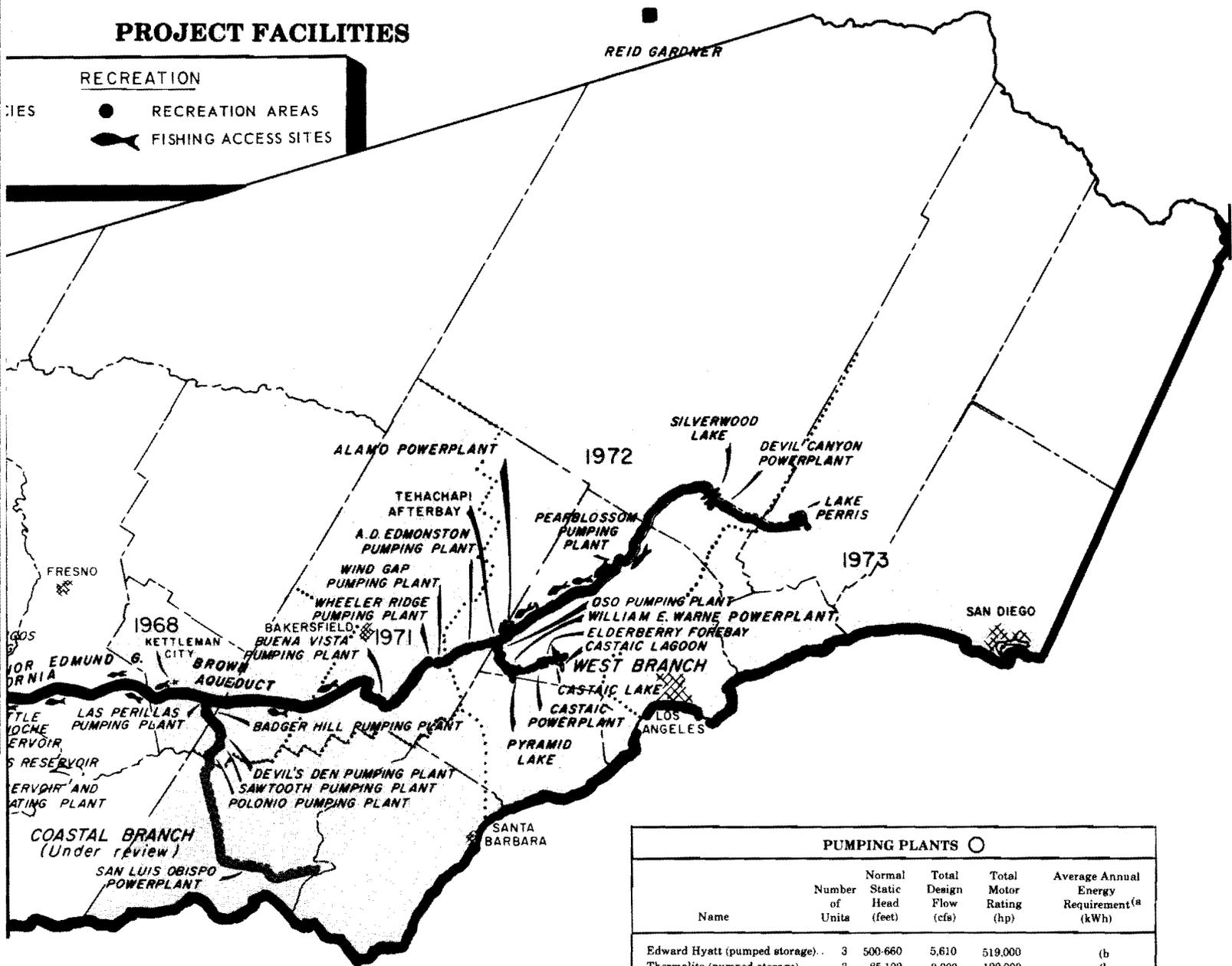
a) Constructed

PROJECT FACILITIES

RECREATION

● RECREATION AREAS

🐟 FISHING ACCESS SITES



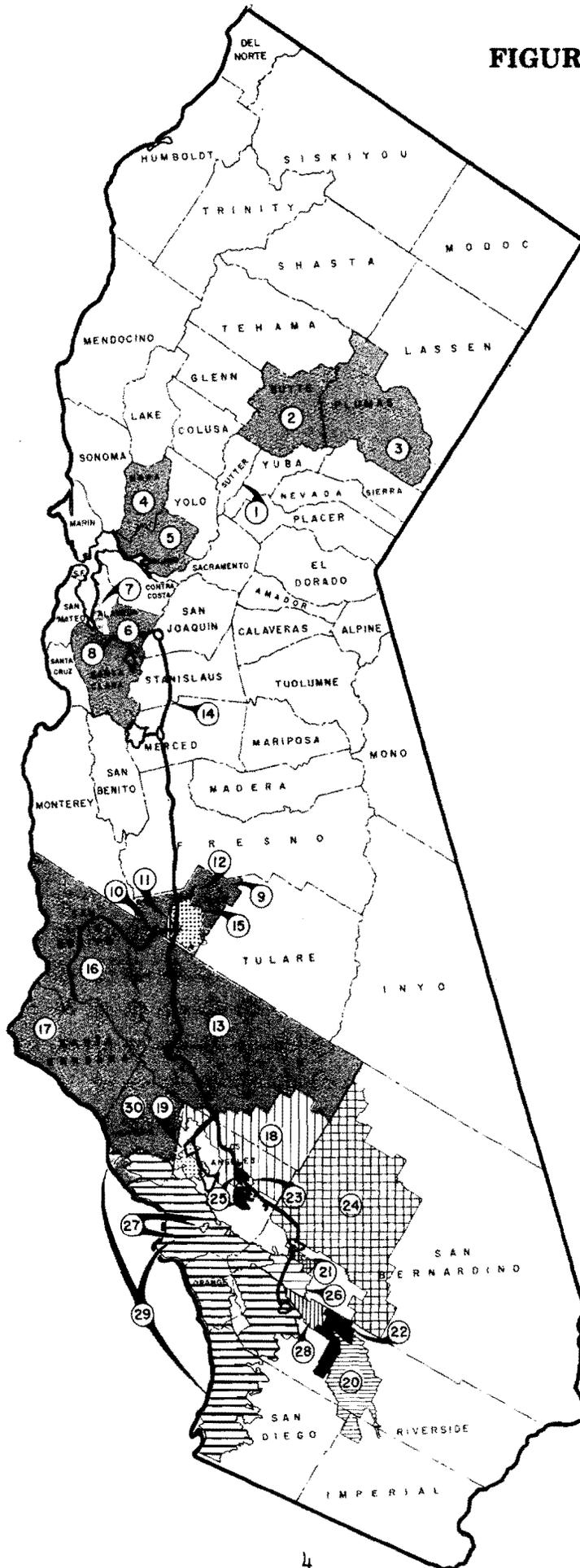
POWERPLANTS					
Name	Number of Units	Normal Static Head (feet)	Total Design Flow (cfs)	Total Generator Rating (kW)	Average Annual Energy Output ^(a) (kWh)
Edward Hyatt	6	410-676	16,950	678,750	2,000,000,000
Thermalito	4	85-102	16,900	119,600	300,000,000
San Luis	8	99-327	13,200	424,000	130,000,000
SWP Share			222,100		
Alamo	1	136-144	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	950,000,000
Castaic	7	830-1,098	18,400	1,250,000	1,800,000,000
SWP Share			214,000		
San Luis Obispo (b)	1	730	94	5,000	47,000,000
Thermalito Diversion Dam (b)	1	70	600	3,000	17,000,000
Reid Gardner Unit No. 4	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					
Cache Slough (c)	6	120	115	2,700	13,000,000
Cordelia (c)	7	280-410	78	4,100	15,000,000
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	205	5,365	144,500	694,000,000
Wheeler Ridge	9	233	4,926	150,000	784,000,000
Wind Gap	9	518	4,725	330,000	1,660,000,000
A.D. Edmonston	14	1,926	4,410	1,120,000	5,660,000,000
Pearlblossom	6	540	1,380	113,200	495,000,000
West Branch					
Oro	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	410	109	7,000	44,000,000
Sawtooth (c)	4	330	109	5,500	36,000,000
Polonio (c)	4	810	109	14,000	93,000,000
Total, SWP Share					12,243,000,000

a) Under full development.
b) Pumped storage capability used only under economically favorable conditions.
c) Tentative data for future facility.

FIGURE 2: LONG-TERM



WATER SUPPLY CONTRACTING AGENCIES

Location No.	Contracting Agency	Total Cumulative Deliveries through 12/31/83 (acre-feet) ^(a)	Maximum Annual Entitlement (acre-feet)	Total Payments through 12/31/83 (dollars)	Gross Area as of 7/1/83 (acres)	Assessed Valuation 1983-84 (dollars) ^(b)	Estimated Population (7/1/83)
UPPER FEATHER AREA							
1.	City of Yuba City	0	9,600	0	3,380	455,149,000	20,390
2.	County of Butte	4,072	27,500	315,238	1,069,000	4,014,536,000	154,400
3.	Plumas County Flood Control and Water Conservation District	4,880	2,700	359,286	1,644,000 ^(c)	1,021,362,000 ^(c)	17,000 ^(c)
	Subtotal	8,952	39,800	674,524	2,716,380	5,491,047,000	191,790
NORTH BAY AREA							
4.	Napa County Flood Control and Water Conservation District	76,340	25,000	4,827,434	508,000	3,216,117,000	101,300
5.	Solano County Flood Control and Water Conservation District	0	42,000	765,937	575,000	6,251,000,000	258,000
	Subtotal	76,340	67,000	5,593,371	1,083,000	9,467,117,000	359,300
SOUTH BAY AREA							
6.	Alameda County Flood Control and Water Conservation District, Zone 7	246,894	46,000	14,856,573	272,000	3,232,473,000	110,000
7.	Alameda County Water District	331,069	42,000	16,776,969	63,000	1,601,000,000	217,300
8.	Santa Clara Valley Water District	1,554,826	100,000	64,012,564	849,000	43,240,000,000	1,361,000
	Subtotal	2,132,789	188,000	95,646,106	1,184,000	48,073,473,000	1,688,300
SAN JOAQUIN VALLEY AREA							
9.	County of Kings	27,700	4,000	599,160	893,300 ^(d)	1,919,861,100 ^(d)	80,400 ^(d)
10.	Devil's Den Water District	235,908	12,700	5,662,417	8,700	-	50 ^(e)
11.	Dudley Ridge Water District	856,749	57,700	12,652,311	29,600	-	50 ^(e)
12.	Empire West Side Irrigation District	56,599	3,000	872,097	7,400	-	50 ^(e)
13.	Kern County Water Agency	10,373,850	1,153,400	237,058,377	5,161,000 ^(f)	23,876,244,800 ^(f)	447,800 ^(f)
14.	Oak Flat Water District	89,984	5,700	1,031,347	4,000	-	50 ^(e)
15.	Tulare Lake Basin Water Storage District	1,790,762	118,500	23,459,199	189,200	-	50 ^(e)
	Subtotal	13,431,552	1,355,000	281,334,908	6,293,200	25,796,105,900	528,450
CENTRAL COASTAL AREA							
16.	San Luis Obispo County Flood Control and Water Conservation District	0	25,000	4,175,854	2,131,300	6,964,753,762	172,200
17.	Santa Barbara County Flood Control and Water Conservation District	0	45,486	8,929,866	1,756,900	11,057,694,928	318,200
	Subtotal	0	70,486	13,105,720	3,888,200	18,022,448,690	490,400
SOUTHERN CALIFORNIA AREA							
18.	Antelope Valley-East Kern Water Agency	410,200	138,400	56,149,297	1,524,000	3,759,513,716	109,500
19.	Castaic Lake Water Agency	25,970	41,500	20,491,649	125,000	2,933,550,655	83,300
20.	Cochella Valley Water District	97,809	23,100	14,087,711	637,600	5,528,410,064	101,700
21.	Crestline-Lake Arrowhead Water Agency	11,757	5,800	3,612,335	55,100	820,188,191	12,400
22.	Desert Water Agency	152,300	38,100	22,810,910	208,800	3,174,031,650	60,500
23.	Littlerock Creek Irrigation District	4,838	2,300	932,606	43,300	52,939,753	1,800
24.	Mojave Water Agency	53,589	50,800	24,066,107	3,160,400	4,413,865,943	115,800
25.	Palmdale Water District	0	17,300	6,365,542	73,900	596,631,324	27,400
26.	San Bernardino Valley Municipal Water District	136,489	102,600	71,301,746	210,200	6,553,622,169	372,400
27.	San Gabriel Valley Municipal Water District	47,227	28,800	18,895,787	16,300	3,721,052,756	169,600
28.	San Geronimo Pass Water Agency	0	17,300	10,586,326	140,600	737,639,027	38,100
29.	The Metropolitan Water District of Southern California	5,303,275	2,011,500	1,182,155,190	3,277,000 ^(g)	379,788,761,242 ^(g)	12,623,900 ^(g)
30.	Ventura County Flood Control District	0	20,000	8,228,262	1,179,500 ^(h)	19,337,921,825 ^(h)	571,800 ^(h)
	Subtotal	6,243,454	2,497,500	1,439,683,468	10,651,700	431,418,128,315	14,288,200
	TOTAL STATE WATER PROJECT	21,893,087	4,217,786	1,836,038,097	25,816,480 ⁽ⁱ⁾	538,268,319,905 ⁽ⁱ⁾	17,546,440 ⁽ⁱ⁾
	NET TOTAL, STATE WATER PROJECT SERVICE AREA				24,497,502 ^(j)	524,845,636,082 ^(j)	17,150,141 ^(j)
	TOTAL, STATE OF CALIFORNIA				100,314,000	797,370,000,000	25,174,000
	PERCENT, NET SWP VS. TOTAL CALIFORNIA				24.4	65.8	68.1

- a) All water delivered to long-term SWP Contractors, including entitlement, makeup 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 Plumas County Flood Control and Water Conservation District, including Last Chance Creek Water District.
- d) Total shown is 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 shown is 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) Total for The Metropolitan Water District (MWD) includes Calleguas Municipal Water District which is common to MWD and Ventura County Flood Control District.
- h) Total shown is 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 The Metropolitan Water District of Southern California.
- i) Includes duplicate values. Some areas that are within two or more agencies are included in each agency's total.
- j) Excludes duplicate values where agencies have overlapping boundaries.

only non-SWP water, which has been pumped and delivered through SWP facilities.

As Figure 2 indicates, the 30 contracting agencies represent a wide spectrum of size, location, climate, and perspective. To aid in understanding the diverse nature of the SWP service areas, Bulletin 132-83 included profile descriptions of six long-term contracting agencies. This edition of Bulletin 132 continues the series of contractor profiles (Chapter VIII).

SWP Accomplishments

The principal purpose of the SWP is to conserve water originating in areas of surplus and transport it to areas of need for use by agricultural and municipal and industrial users. Other project purposes include flood control,

hydroelectric power generation, salinity control, recreation, and enhancement of fish and wildlife.

Table 1 summarizes SWP water supply, recreation, and energy generation accomplishments through 1983. (The water delivery totals in Table 1 include service to all customers and, therefore, exceed those shown in Figure 2, which include only deliveries to long-term contractors.) Table 1 does not show figures for flood control accomplishments, but Oroville Dam alone prevented many millions of dollars of property damage from floods in 1964, 1967, 1968, 1970, 1974, 1980, 1982, and 1983. Also, the SWP helped reduce flooding in the Tulare Lake Basin in 1978, 1980, 1982, and 1983 by taking excess flood water into the California Aqueduct through an intertie built by the Corps of Engineers.

TABLE 1: SWP ACCOMPLISHMENTS THROUGH 1983

Year	Water Delivered (Acre-Feet)							Recreation Supported (Recreation Days) ^(b)	Hydro Electric Energy Generated (kilowatt hours) ^(c)
	Entitlement Water			Other Deliveries			Total Delivery		
	Municipal and Industrial Use	Agricultural Use	Total	Surplus		Other Water ^(a)			
				Municipal and Industrial	Agricultural				
1962						18,289	18,289	30,000	
1963						22,456	22,456	105,000	
1964						32,507	32,507	331,600	
1965						44,105	44,105	499,800	
1966						67,928	67,928	482,700	
1967	5,747	5,791	11,538	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	248,142	3,066,132	6,017,800	3,358,000,000
1982	928,613	820,297	1,748,910	1,303	214,570	125,484	2,090,267	6,187,700	5,097,000,000
1983	503,112	681,757	1,184,869	0	13,019	110,535	1,308,423	5,838,200	5,419,000,000
Total ^(d)	7,507,061	8,296,637	15,805,698	198,722	4,972,500	1,939,209	22,915,129	64,026,700	47,592,000,000

a) Includes Preconsolidation Repayment Water, Emergency Relief Water, Exchange Water, Kern River Intertie Water (portion not delivered as Entitlement), Regulated Delivery of Local Supply, Non-SWP water delivered to Napa County FC&WCD through SWP facilities, Wheeling of CVP Water, and Recreation Water.

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

c) Includes SWP share of generation from Hyatt-Thermalito, San Luis, Devil Canyon, Warner, and Castaic Powerplants.

d) In addition, SWP dams have prevented millions of dollars worth of flood damage.

Highlights

The following six chapters summarize SWP operations in 1983, administration and design and construction activities, and future water supply, power, and financing projections. The most significant events of the report period include:

- o 1983 was a very wet year - the combined unimpaired runoff of the four principal Sacramento Valley rivers was the largest of the 78 years for which data are available.
- o The wet weather reduced demands for SWP water substantially. Deliveries of entitlement water to long-term contractors totaled 1,184,869 acre-feet, only 44 percent of 1983 entitlements and approximately half of the 1983 deliveries requested in the fall of 1982.
- o Surplus water deliveries in 1983 totaled only 13,019 acre-feet, far less than the contractors' September 1982 requests for almost 660,000 acre-feet.
- o The Kern River Intertie was in operation for all but 24 days of 1983, bringing over 750,000 acre-feet of excess flood water from the Kern, Kaweah, and Tule Rivers into the California Aqueduct.
- o The heavy runoff allowed San Luis Reservoir to be refilled early in 1983, after it was drawn down for dam repair work in 1982; about 1,500,000 acre-feet were added to storage in the first five months of 1983.
- o Due to reduced water demands, fall drawdown of Castaic Lake (to facilitate repair work at Elderberry Forebay, Castaic Outlet Tower, and Angeles Tunnel) was postponed from 1983 to 1984.
- o Following termination of the 1967 Oroville-Thermalito Power Sale Contract and the 1966 power supply contract, DWR began operation as a bulk power agency on April 1, 1983.
- o SWP hydroelectric facilities generated 5.42 billion kWh of electrical energy in 1983, the largest annual production since operation began in 1968. Total SWP energy use in 1983 was 2.73 billion kWh, only half of 1982 use and the lowest since the drought year of 1977.
- o Total power purchases (including payments for transmission service) were \$92,436,000 in 1983. Sales of 5.08 billion kWh of excess energy, along with payments received for power-associated services, totaled \$88,716,000.
- o The second of two 37.5-MW units at the Warne Powerplant become operational in February 1983. Reid Gardner Unit No. 4 (250 MW, of which DWR has a 169.5-MW ownership share and receives up to 226 MW under the participation agreement with Nevada Power Company) went into commercial operation on July 26, 1983. The last unit of the 165-MW Pine Flat Powerplant (under contract to DWR) began commercial operation on April 1, 1984.
- o Construction of Bottle Rock and South Geysers Powerplants (geothermal, 55 MW each) and Alamo Powerplant (hydro, 17 MW) continued, with operation scheduled for January 1985, June 1986, and September 1985, respectively.
- o DWR decided not to proceed with small hydropower developments at Sutter-Butte, Thermalito Afterbay, Castaic Outlet, Pyramid Outlet, and Lake Isabella. Mojave Siphon Powerplant was deferred, pending further study. Construction of the 3-MW Thermalito Diversion Dam Powerplant will begin in mid-1984.

- o Use at SWP recreation facilities in 1983 totaled 5,838,200 recreation days, a 6 percent decline from 1982. An additional 512,500 visitor-days of use was recorded at SWP visitor facilities.
- o Following public meetings in August 1983, DWR and the USBR decided to proceed with a full EIS-EIR on the proposed CVP-SWP Coordinated Operation Agreement. Final filing of the EIS-EIR has been postponed, pending further negotiations.
- o Construction of the remaining facilities required in the Suisun Marsh will begin with construction of a portion of an access road to the Montezuma Slough Control Structure in the summer of 1984.
- o Final design of Phase II of the North Bay Aqueduct began. Construction is scheduled to begin in the summer of 1984 and the last contract is expected to be completed by January 1987.
- o A final EIR on installation of the last four pumping units at Banks Delta Pumping Plant is being prepared. DWR currently plans that the last of the new units will go into operation in 1990.
- o Installation of the final three pumping units at Edmonston Pumping Plant continued, with operation expected by early 1985.
- o On January 16, 1984, a portion of the embankment and concrete lining of the Lower Quail Canal failed. The West Branch of the California Aqueduct will be in limited service until repairs are completed in December 1984. Water deliveries are being maintained with the aid of releases from Castaic Lake.
- o A report on alternatives for water transfer in the Delta was released in November 1983. It identified four basic alternatives considered most practical. A series of public meetings and legislative hearings was held. Legislation is being sought to obtain legislative concurrence with construction of a through-Delta facility.
- o DWR is pursuing further studies of the need for additional storage south of the Delta. After appraising 29 alternatives, DWR prepared a May 1984 progress report, "Alternative Plans for Offstream Storage South of the Delta." The report identified Los Banos Grandes Reservoir site as the most promising and DWR began additional studies of it. Smaller reservoirs at the Kellogg and Los Vaqueros sites may also be considered.
- o After 7 years of post-authorization studies, the Corps of Engineers released its report and final EIS on the Cottonwood Creek Project. After thorough analysis, DWR concluded that the costs raised serious doubt about the SWP contractors' ability to pay for the Cottonwood Creek Project, and launched an appraisal of smaller projects that might provide some portion of the flood control and water supply benefits at lower cost.
- o As a result of a shift in planning emphasis and growing recognition of cost and financing limitations, both the USBR and DWR elected to defer further planning of the enlargement of Shasta Lake. Planning work in progress will be concluded during the 1983-84 fiscal year and a joint interim status report will be completed by June 1985.

- o Principal construction of the Los Banos Desalting Facility was completed in June 1983. After delivery of the last equipment for the solar pond component, the facility should be in full operation by late 1984.
- o Discussions are continuing with the USBR on the possibility of purchasing surplus CVP water for SWP use. An effort is underway to both determine the supply potentially available and identify and resolve the related issues.
- o The final EIR on enlargement of the East Branch of the California Aqueduct was completed in April 1984. The initial capacity increase would be 600 cfs, with provision for further expansion to 1,200 cfs if needed. The enlargement is currently scheduled for 1991 completion, but the decision to proceed will be affected by MWDSC's forthcoming decision on how best to convey and distribute SWP water within its service area.
- o Phase II of the Coastal Branch Aqueduct has been delayed several times at the coastal contractors' request. Final design was scheduled to begin July 1, 1984, but requests for a further two-year delay are under consideration.
- o Projections continue to show that SWP power requirements and resources will be in reasonable balance in the coming years (assuming that contracts for up to 300 MW of power from the Pacific Northwest can be negotiated).
- o The current SWP financial analysis demonstrates that SWP revenues will be adequate to meet all operating costs and debt service.
- o A power revenue bond issue will be needed in 1985 and a water revenue bond issue in 1986, to assist in financing planned construction.
- o Additional financing would be required for construction of a Delta facility, storage facilities south of the Delta, or enlargement of the East Branch of the California Aqueduct.

CHAPTER II

SWP OPERATIONS IN 1983

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

Water Operations

Water conditions, SWP reservoir and aqueduct operations, and the quality of SWP water in 1983 are covered in this section.

Water Conditions

By any system of classification, the 1982-83 water year (October 1, 1982 through September 30, 1983) was a wet year. Precipitation (Figure 3) averaged well above normal throughout the State. Runoff was also high, exceeding 200 percent of average in almost all major basins.

SWRCB's Water Rights Decision 1485 uses an index based on the sum of the computed unimpaired runoff of the four major Sacramento Valley river basins (the Sacramento, Feather, Yuba, and American Rivers). The combined runoff of these rivers in the 1982-83 water year was 37,700,000 acre-feet, about 210 percent of the 78-year average and far above the previous documented high of 33,700,000 acre-feet in 1906-07.

Figure 4 shows cumulative natural runoff to Lake Oroville and Shasta Lake during the 1982-83 water year. Computed natural runoff to Shasta Lake nearly equaled that of the maximum year of record (1973-74). Natural runoff to Lake Oroville in 1982-83 was the greatest of the past 71 years of record, exceeding that of 1981-82, the next highest, by over 400,000 acre-feet.

Further details of water conditions during the 1982-83 water year are available in Bulletin 120-83, "Water

Conditions in California, Fall Report, October 1983."

Reservoir Operations

Lake Oroville and San Luis Reservoir are the major storage sites for development of SWP water supplies. Figure 5 compares the 1983 operation of these reservoirs with the previous year's operation. Lake Oroville operation closely paralleled that of 1982, except that cool spring weather delayed filling in April and May. San Luis Reservoir was low at the beginning of the year because of the 1982 storage restrictions for repair of slide damage (Bulletin 132-83, pages 41-42). Abundant winter and spring runoff, reduced SWP delivery demands, and the availability of low-cost energy for pumping allowed San Luis Reservoir to be refilled by early May. Over 1,500,000 acre-feet of water were added to storage in San Luis Reservoir during the first five months of 1983.

Figure 6 includes summaries of the 1983 operations of the principal SWP reservoirs (as well as summaries of aqueduct operations and water deliveries described later in this chapter). Except for Silverwood Lake, reservoir storage was near or above average at the end of the year. Silverwood Lake was drawn down in the fall to allow construction of the outlet tunnel for the Mojave Siphon Powerplant. Pyramid Lake was lowered in the fall to permit expansion of recreation facilities, but was nearly refilled by year-end. A fall drawdown of Castaic Lake was planned to facilitate repair and maintenance work on Elderberry Forebay, Castaic Outlet Tower, and Angeles Tunnel; due to reduced demand by MWDSC, this drawdown was rescheduled for 1984. The SWP share of San Luis Reservoir storage was essentially full throughout the last nine months of 1983. The following

FIGURE 3: STATEWIDE PRECIPITATION, 1982-83 WATER YEAR

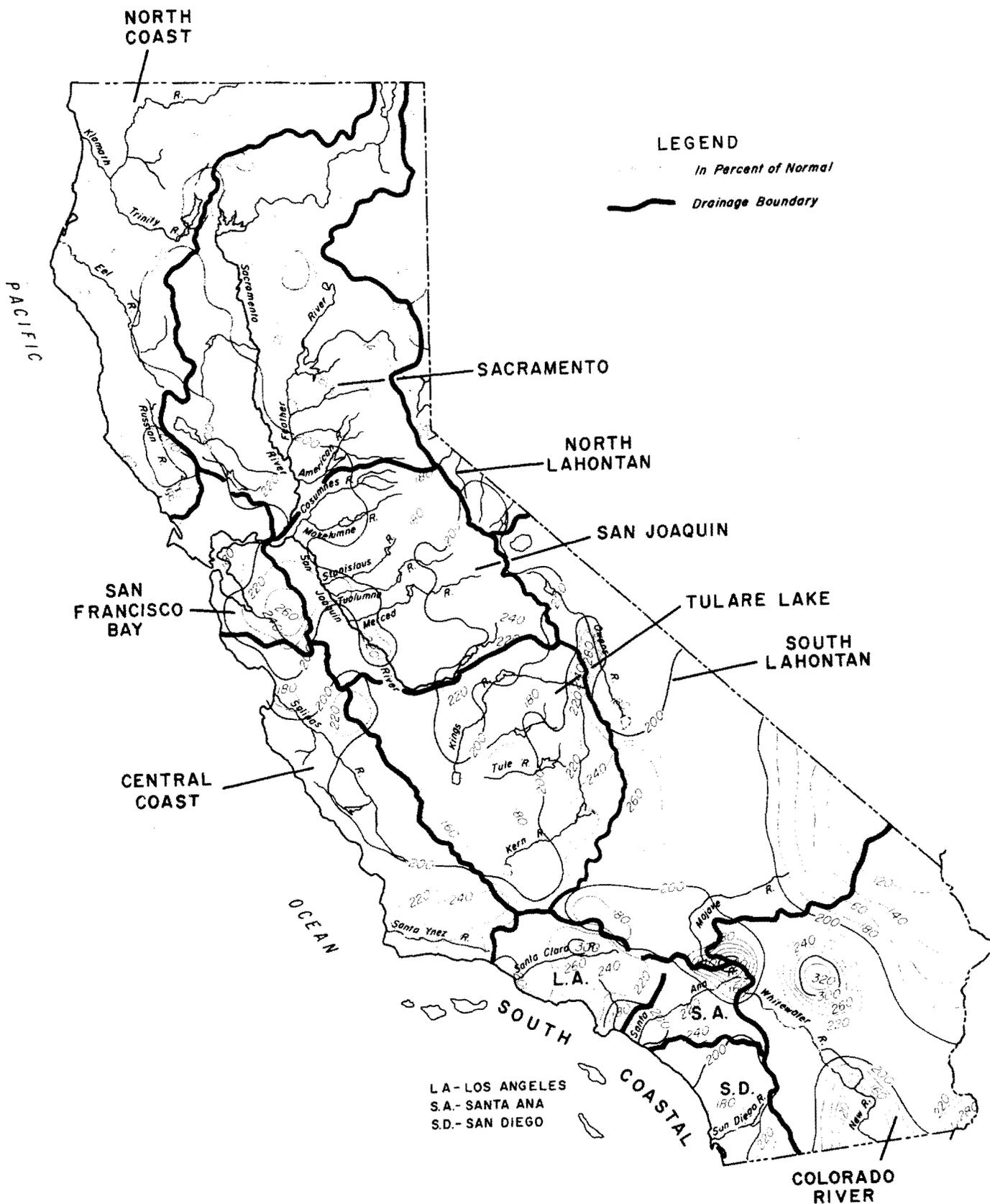


FIGURE 4: CUMULATIVE NATURAL RUNOFF TO LAKE OROVILLE AND SHASTA LAKE

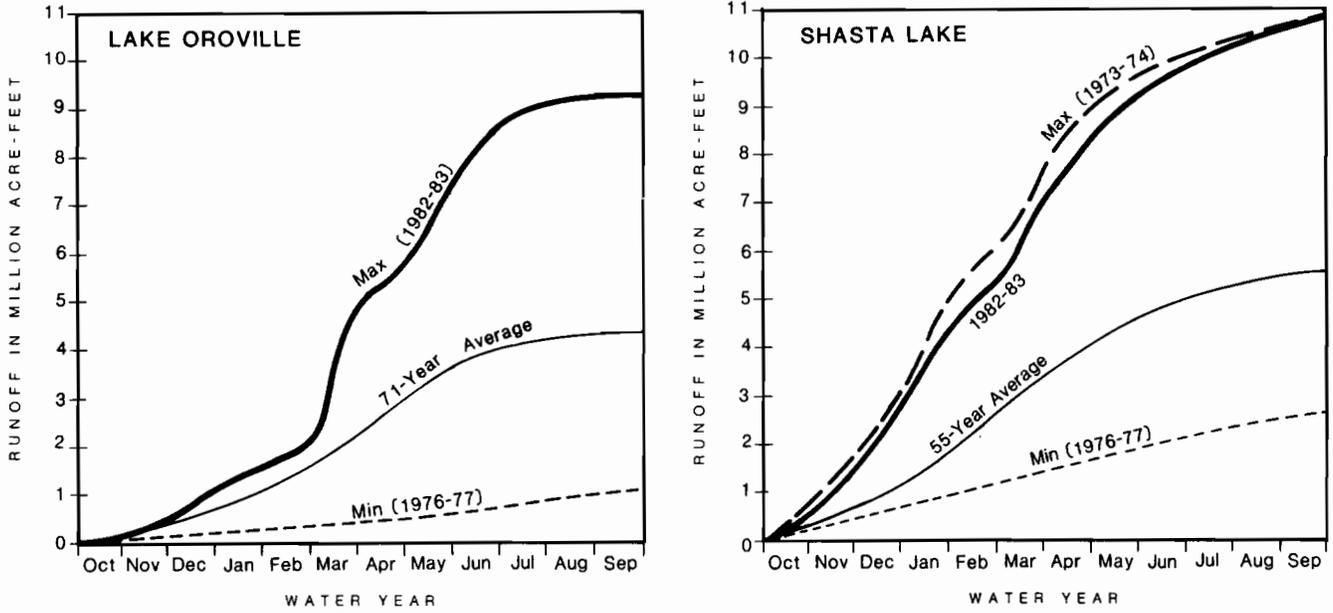


FIGURE 5: LAKE OROVILLE AND SAN LUIS RESERVOIR STORAGE

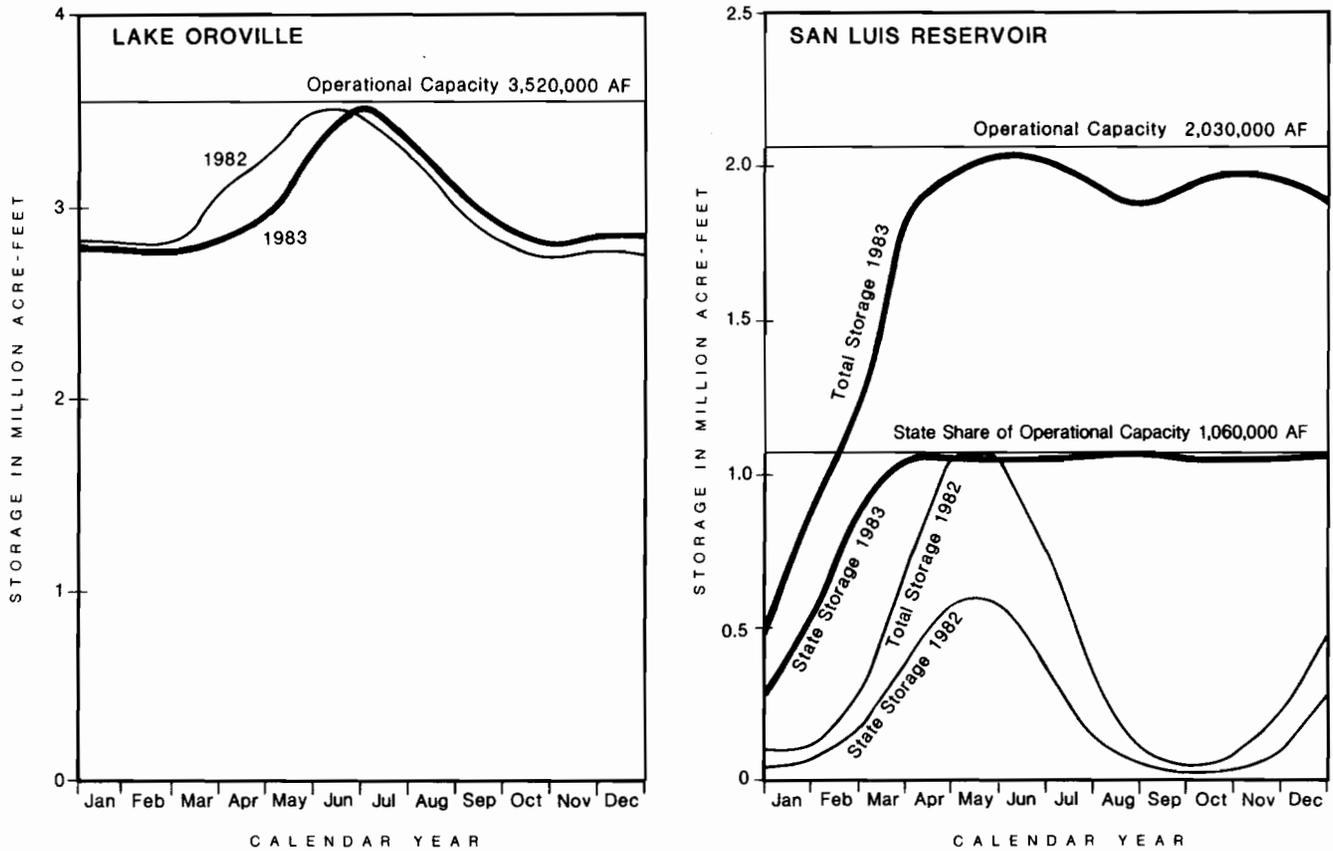
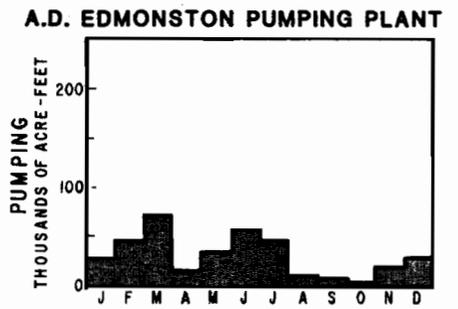
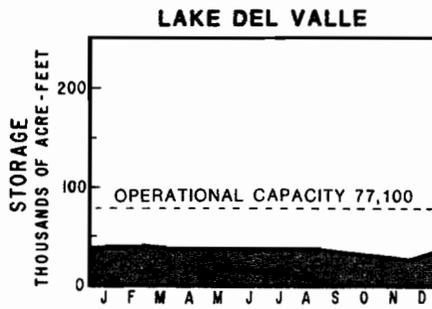
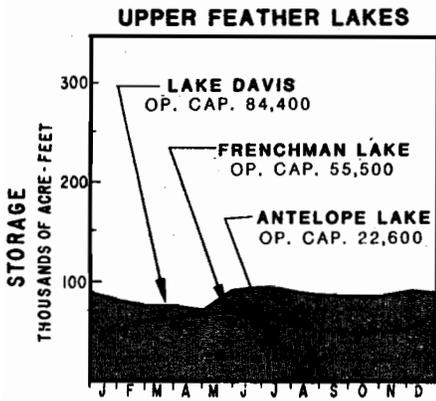
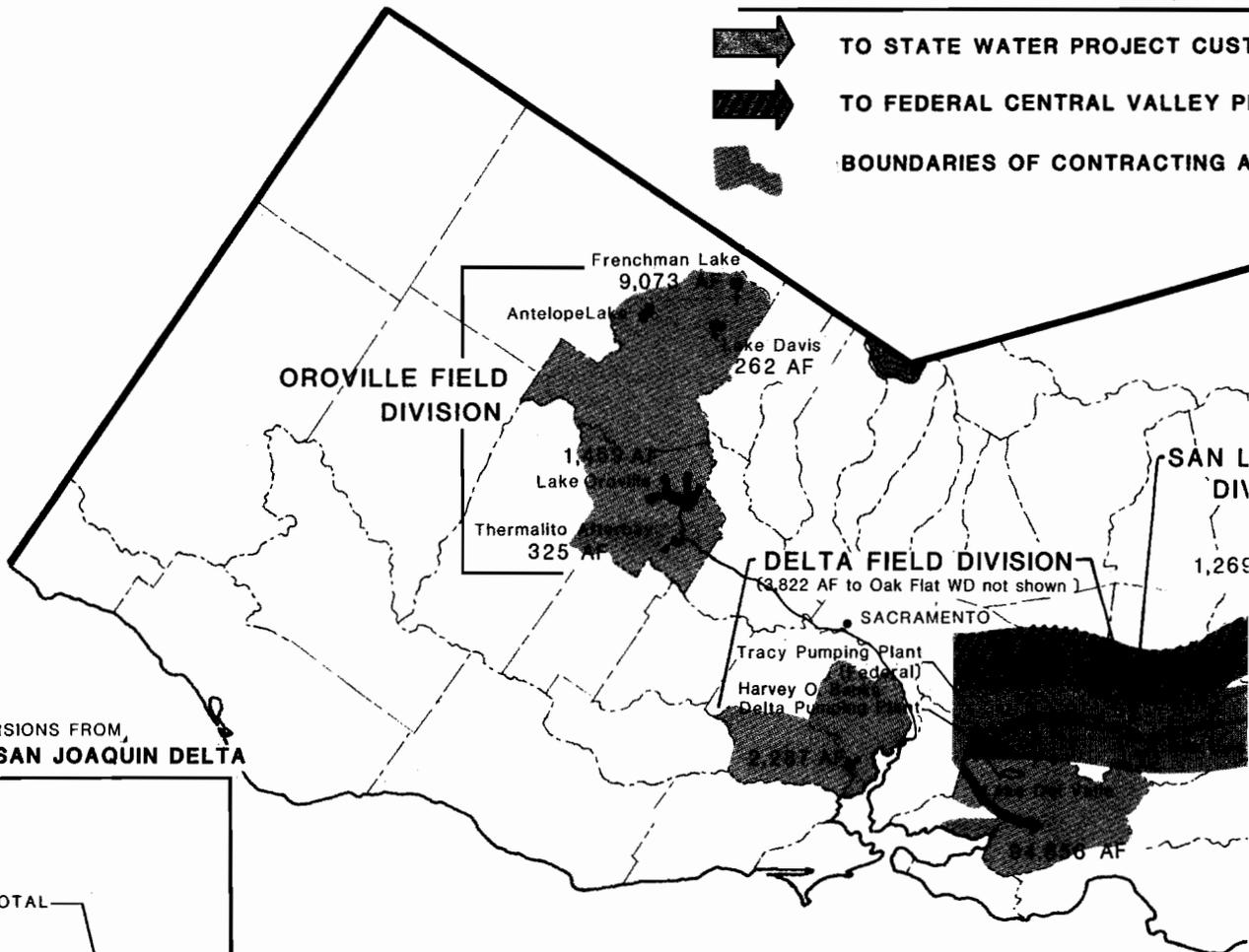


FIGURE 6: SUMMARY OF

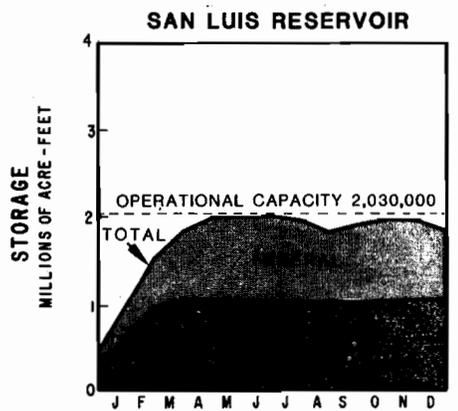
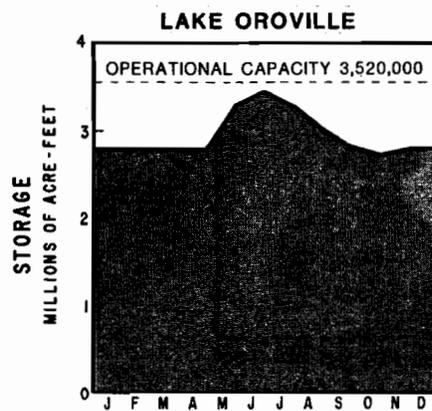
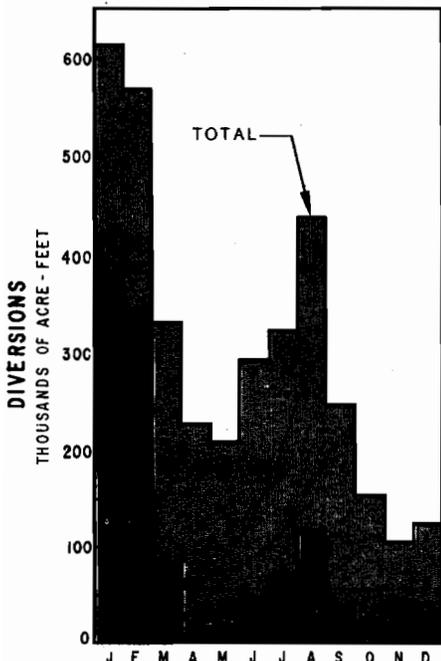


1983 DELIVERIES (in acre feet) FROM

- TO STATE WATER PROJECT CUSTOMERS
- TO FEDERAL CENTRAL VALLEY PROJECTS
- BOUNDARIES OF CONTRACTING AGENCIES



DIVERSIONS FROM, SACRAMENTO-SAN JOAQUIN DELTA



* Includes Diversions for Delta Mendota Canal and Contra Costa Canal

tabulation compares 1982 and 1983 year-end storage in the principal SWP reservoirs:

Reservoir and Operational Capacity (acre-feet)	Storage (acre-feet)	
	12/31/82	12/31/83
Lake Oroville 3,520,000	2,809,000	2,831,000
San Luis Res. (a) 1,060,000	260,000	1,064,000
Silverwood Lake 73,000	69,000	37,000
Lake Perris 127,000	121,000	125,000
Pyramid Lake 170,000	154,000	153,000
Castaic Lake 319,000	313,000	271,000
Total	3,726,000	4,481,000
Total Change	+755,000	

a) SWP Share

The operational capacities in the preceding tabulation represent the reservoir levels that are not exceeded in normal operation; in most cases these levels are 1 to 2 feet below the spillway crest.

Aqueduct Operations

Figure 6 summarizes overall SWP operations in 1983, as well as showing the 1,269,901 acre-feet of CVP water that were conveyed through the 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.)

North Bay Aqueduct and South Bay Aqueduct operations in 1983 were routine, but operation of the California Aqueduct was not. As illustrated in Figure 6, diversions at the Banks Delta Pumping Plant were

relatively heavy in January through early March, as San Luis Reservoir was being refilled. Reduced demands and diversions via the Kern River Intertie resulted in much lower than normal Delta diversions during the remainder of the year.

The Kern River Intertie near Tupman (see photo) was constructed in 1976 to allow diversion of flood water from the Kern, Kaweah, and Tule Rivers into the California Aqueduct. The Intertie was first used in 1978, when 178,000 acre-feet were taken into the aqueduct. In the spring and early summer of 1980, the gates were opened for a total of 111 days and 139,000 acre-feet were diverted. About 22,000 acre-feet were diverted into the Aqueduct during two periods of operation in 1982. Use of the Kern River Intertie in 1983 far exceeded that of the previous operations. Except for the first 24 days of August, the Intertie was in operation the entire year. More than 750,000 acre-feet of flood water were carried into the Aqueduct in 1983, including excess Kaweah and Tule River water diverted via the Friant-Kern Canal.

To help relieve flooding in the Tulare Lake Basin, MWDC decreased its diversion of Colorado River water in February, March, May, and June, increasing its use of SWP water in these months by about 87,000 acre-feet; this allowed additional flood water to be diverted into the California Aqueduct. Approximately 34,000 acre-feet of the potential flood water were also pumped south to Silverwood Lake for release to the Mojave River for ground water recharge by the Mojave Water Agency.

A pumpback operation, under which water from the Intertie was pumped north through the Aqueduct, began at the end of March. Installation of temporary pumps at Checks 25, 23, 22, and 20 allowed approximately 250,000 acre-feet of Intertie water to be delivered as far as 80 miles northward.



Flood water entering the California Aqueduct through the Kern River Intertie

Operation of the Kern River Intertie in 1983 not only helped alleviate flood problems in the San Joaquin Valley, but saved over 300 million kWh of pumping energy for the SWP.

Water Quality

SWRCB Decision 1485 sets water quality standards, export limitations, and outflow requirements to protect beneficial uses in the Delta. This information and a record of water quality monitoring in the Delta appear annually in Appendix E to Bulletin 132. It

is published separately under the title "Water Operations in the Sacramento-San Joaquin Delta."

Because of the abundance of water, the Delta outflow index during 1983 was well above normal, averaging above 40,000 cfs every month except August, September, and October, which all averaged above 20,000 cfs.

The year was classified as "wet", which brought the most restrictive Delta water quality standards into effect under Decision 1485. Yet, these were

met by a wide margin. The extraordinarily high outflows created a natural hydraulic barrier against salinity intrusion, and the Delta remained essentially a fresh water environment throughout the year. The mean daily electrical conductivity of water at Chipps Island exceeded 0.20 millimhos per centimeter on only one occasion of extremely high tide, when it reached 0.66 millimhos per centimeter.

The large Delta outflows during 1983 also had a dampening effect on algae growth. Levels of less than 10 micrograms per liter of chlorophyll were observed at most sites in the Delta throughout the year. This was despite the fact that nutrients, water transparency, and water temperature were all observed to be within a suitable range for stimulating algae production.

Table 2 summarizes 1983 water quality conditions at key locations throughout the SWP system. The table also lists the objectives set forth in the long-term water contracts for the maximum monthly average concentrations of constituents.

Trihalomethanes. Raw water supplies contain naturally occurring organic compounds that are converted to trihalomethanes (THMs) when chlorine is added during the process of water treatment. The most common THM is chloroform. Because THMs are potential carcinogens, their concentrations in drinking water have been limited by the State and by the U. S. Environmental Protection Agency (EPA). Where THM levels exceed health limits, special treatment may be required for their prevention or removal.

Under the interagency Delta Health Aspects Monitoring Program, monthly water samples from the Delta and its various tributaries are analyzed for THM formation potential. This test indicates the maximum amount of THMs that a raw water supply could produce

when treated with chlorine. The data are being used to identify major sources of THM precursors and to enable SWP contractors and other water agencies to formulate means of controlling these agents. Thus far, the monitoring program corroborates earlier DWR data indicating THM formation potential generally increases as water moves through the Delta.

Suppliers of drinking water are required to test for THMs periodically. In general, drinking water produced from SWP supplies meets EPA standards, but modifications are being made in water treatment processes at some plants to insure compliance.

Synthetic Organic Pollutants. Man-made organic compounds in waters of the Delta and its tributaries are also being monitored under the Delta Health Aspects Monitoring Program. Samples are taken periodically and analyzed for a wide spectrum of organic chemical agents. This monitoring is intended to assure that exotic organic chemical pollutants are not present in SWP water in hazardous concentrations. The limited data collected thus far in the monitoring program indicate possible presence of relatively low levels of some agents, but the data are as yet inconclusive.

Asbestos. DWR continued routine monthly testing of asbestos levels in California Aqueduct water in 1983. Much of the sampling was centered in Arroyo Pasajero in southern Fresno County, where floodflows entering the Aqueduct are a source of sediment and asbestos pollution. Cantua and Salt Creeks also contribute to sediment and asbestos problems. Heavy runoff during early 1983 caused significant inflow of water and sediment to the Aqueduct; approximately 10,000 acre-feet of water flowed into the Aqueduct from Arroyo Pasajero in 1983 and Cantua and Salt Creeks contributed about 5,000 acre-feet.

TABLE 2: WATER QUALITY AT SELECTED STATIONS IN 1983

Station	Monthly Average	Concentration (in parts per million unless otherwise noted)					
		Total Dissolved Solids	Total Hardness	Chlorides	Sulfates	Sodium ^(a) (Percent)	Boron
Thermalito Afterbay, Outlet to Feather River	Minimum	43	30	1	1	17	0.0
	Average	52	30	1	1	17	0.0
	Maximum	63	32	1	2	18	0.0
Sacramento-San Joaquin Delta Banks Delta Pumping Plant	Minimum	90	41	12	15	39	0.0
	Average	162	67	31	26	45	0.2
	Maximum	281	105	70	44	52	0.7
South Bay Aqueduct, Santa Clara Terminal Facility	Minimum	98	49	1	16	25	0.0
	Average	163	77	24	26	38	0.2
	Maximum	214	96	43	34	43	0.4
California Aqueduct: Entrance to O'Neill Forebay	Minimum	92	44	12	15	38	0.1
	Average	155	65	28	25	44	0.2
	Maximum	213	84	45	34	48	0.2
Outlet from O'Neill Forebay	Minimum	123	54	20	23	43	0.1
	Average	156	66	29	28	46	0.2
	Maximum	208	84	45	36	49	0.2
Near Kettleman City	Minimum	112	48	23	17	44	0.1
	Average	210	83	43	38	47	0.3
	Maximum	478	174	101	98	53	0.9
Coastal Branch near Devil's Den	Minimum	77	30	7	14	37	0.0
	Average	177	68	36	30	46	0.2
	Maximum	430	151	135	64	56	0.4
Near Buena Vista Pumping Plant	Minimum	63	27	4	8	37	0.0
	Average	111	46	14	16	42	0.1
	Maximum	206	84	45	32	47	0.2
At Tehachapi Afterbay	Minimum	59	30	3	11	34	0.0
	Average	93	43	8	17	39	0.1
	Maximum	132	58	15	24	43	0.2
At Pearblossom Pumping Plant	Minimum	45	25	1	6	34	0.0
	Average	75	38	4	11	38	0.1
	Maximum	137	61	24	23	45	0.2
Silverwood Lake, Outlet to San Bernardino Tunnel	Minimum	64	33	3	4	30	0.0
	Average	102	46	10	11	35	0.1
	Maximum	129	62	28	24	46	0.2
Lake Perris, Outlet from Santa Ana Pipeline	Minimum	175	76	35	27	45	0.1
	Average	197	81	42	35	47	0.2
	Maximum	224	86	46	39	48	0.2
Pyramid Lake, Entrance to Angeles Tunnel	Minimum	182	96	13	48	26	0.2
	Average	252	131	20	80	30	0.3
	Maximum	312	152	36	94	41	0.4
Castaic Lake, Outlet Tower	Minimum	253	132	37	73	33	0.2
	Average	300	150	45	84	37	0.3
	Maximum	336	166	53	93	42	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.

Dredging of sediment from the Aqueduct continued in 1983, with the effort being focused on removal of clay material clinging to canal sideslopes. DWR designed and built a new piece of equipment to dredge this portion of the Aqueduct cross-section completely to the bare concrete lining, because very thorough cleaning is necessary to reduce asbestos concentrations appreciably. The pneumatic dredge used for removing material from the Aqueduct invert was also modified to improve its cleaning ability.

The effort to provide a long-term solution to the Arroyo Pasajero cross-drainage problem continues. A USBR draft report outlined alternatives for providing Aqueduct flood protection. A DWR report to supplement the USBR study is scheduled for completion in mid-1984. The EPA completed the first phase of its study of clean-up measures for the asbestos mines in the watershed; these mines have been placed on the list of hazardous waste sites eligible for federal "Superfund" money.

In addition to asbestos sampling within the California Aqueduct, DWR collects monthly asbestos samples from waters tributary to and within the Delta under the Delta Health Aspects Monitoring Program. This monitoring will aid in determining sources and concentrations of asbestos in Delta water supplies. The small amounts of data collected since the program began in July 1983 do not provide a sufficient base for any strong conclusions. Specific sources of asbestos have not yet been identified, but streams tributary to the Delta appear to have generally lower asbestos concentrations than waters of the central and southern Delta channels.

Water Service

The following sections summarize 1983 water conveyance and deliveries via SWP facilities.

Total Water Conveyed

In 1983, a total of 1,218,103 acre-feet of water was conveyed through SWP facilities. Table 3 summarizes total water conveyance for the 22 years of SWP operation and shows the disposition of that water, under the following headings:

Entitlement Water. The SWP contracts establish specific annual entitlement water amounts that each long-term water contractor may request. These schedules reflect each contractor's estimate of future water needs at the time the contracts were signed (with some subsequent revisions). Columns (1) through (7) of Table 3 summarize annual entitlements for the various SWP service areas for the 1962-83 period. Table B-4 in Appendix B presents complete information on annual entitlements for each contractor.

In September of every year, each contractor furnishes an updated estimate of future requirements for SWP water. Estimates for 1983 deliveries of entitlement water (including entitlement deferred from prior years) received in the fall of 1982 from the 22 contractors requesting service totaled 2,365,818 acre-feet. On December 15, 1982, the initial schedule for 1983 water deliveries was approved. Based on the 1983 rule curve criteria and the December 1, 1982 water supply forecast, the initial approval was for delivery of all 1983 entitlement requests (plus 700 acre-feet of entitlement water deferred from prior years and 63,321 acre-feet of preconsolidation repayment water).

Actual entitlement water delivered in 1983 totaled 1,184,869 acre-feet to the 21 contractors accepting deliveries. Over 90 percent of the difference between the amounts of entitlement water initially requested and those delivered resulted from decreased deliveries to Kern County Water Agency, MWDSC, and Tulare Lake Basin Water Storage District. The decrease was due to the wet water year, increased supplies from other sources, and reduced plantings.

Surplus Water. In September 1982, nine contractors submitted estimates that they could use a total of 659,803 acre-feet of surplus water during 1983. In January, DWR announced that all surplus water requests could be satisfied. However, the wet spring weather and reduced plantings due to the federal "Payment-in-Kind" program caused substantial reductions in the need for surplus water. The total surplus water delivered during 1983 was only 13,019 acre-feet (to one contractor).

Unscheduled Water. Unscheduled water is water in excess of that required to meet Delta water quality requirements and all SWP needs, and that can be delivered to contractors when delivery capability is available. The water must be used primarily for ground water replenishment, for agricultural use in lieu of ground water pumping, or for pre-irrigation to increase soil moisture prior to planting. Delivery of unscheduled water is administered separately, in accordance with unscheduled water contracts, and cannot be substituted for scheduled entitlement or surplus water deliveries.

Prior to 1980, "extra surplus" water was delivered on an as-available basis, before it was known whether surplus

water requests could be met. The unscheduled water program was then developed as a result of contractor requests. By 1980, nine qualified contractors, who had expressed an interest in unscheduled water, received and signed an amendment to Article 21 of the basic water supply contract.

For 1983, no unscheduled water deliveries were declared because enough surplus water was available as of January 1983 to satisfy all requests.

Other Water. Column (10) of Table 3 summarizes deliveries of a number of other types of water, as defined in the accompanying footnote. These are shown in more detail (for 1983) in Table 5, and described in the accompanying text later in this chapter under the heading "Total 1983 Water Deliveries" (except for exchange water, which was not delivered in 1983, but is discussed in Chapter III).

Initial Fill Water. The quantities shown in Column (12) of Table 3 are the amounts used for initially filling SWP 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 to 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. Years with negative values are those in which storage withdrawals, evaporation, and seepage losses exceeded storage additions plus storable local inflow.

TABLE 3: HISTORICAL SUMMARY OF ENTITLEMENTS,

Calendar Year	Annual Entitlements Under Long-Term Water Supply Contracts (Acre-Feet)							Entitlement Water
	Feather River Area	North Bay Area	South Bay Area	San Joaquin Valley Area	Central Coastal Area	Southern California Area	Total	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(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	1,540,875	2,577,671	1,748,910
1983	2,000	950	141,400	880,648	8,439	1,668,557	2,701,994	1,184,869
Totals 1962-1983	23,780	2,900	2,007,038	8,438,514	18,824	11,883,380	22,374,436	15,804,698

a) Values include deliveries of SWP water to short-term contractors (Mustang Water District, 1970-71; Tracy Golf and Country Club, 1974, 1979, and 1980; Green Valley Water District, 1974, 1975, 1978, 1979, and 1980; and Granite Construction Company, 1980). Does not include CVP water wheeled to Tracy Golf and Country Club, Green Valley Water District, and others during a number of years (see Column 10).

DELIVERIES, AND WATER CONVEYED

Water Conveyed (Acre-Feet)							Calendar Year
Deliveries			Initial Fill Water	Operational Losses and Storage Changes	Recreation Water	Total	
Surplus and Unscheduled Water ^(a)	Other Water ^(b)	Subtotal					
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
0	18,289	18,289	9	272	0	18,570	1962
0	22,456	22,456	71	185	0	22,712	1963
0	32,507	32,507	171	152	0	32,830	1964
0	44,105	44,105	93	729	0	44,927	1965
0	67,928	67,928	0	1,746	0	69,674	1966
0	53,605	65,143	8,328	4,212	0	77,683	1967
121,534	14,777	308,020	498,926	117,906	0	924,852	1968
72,397	18,829	284,246	510,614	72,196	0	867,056	1969
133,024	38,080	405,097	23,947	2,435	0	431,479	1970
296,019	44,119	697,478	7,853	5,812	8	711,151	1971
423,964	66,638	1,102,403	100,274	53,062	6,489	1,262,228	1972
296,416	42,511	1,033,315	204,638	53,798	1,155	1,292,906	1973
417,676	46,224	1,337,977	237,554	10,657	2,118	1,588,306	1974
622,902	63,793	1,910,685	103,352	- 94,606	3,377	1,922,808	1975
580,110	115,217	2,068,329	61,122	-681,025	1,745	1,450,171	1976
0	389,065	963,220	0	-131,151	1,111	833,180	1977
16,914	121,225	1,590,838	64,443	717,370	1,691	2,374,342	1978
648,389	187,630	2,495,915	12,302	- 83,401	1,766	2,426,582	1979
404,557	46,459	1,980,765	0	-30,453	2,131	1,952,443	1980
908,428	243,454	3,061,444	0	126,180	4,688	3,192,312	1981
215,873	120,838	2,085,621	0	136,555	4,646	2,226,822	1982
13,019	102,686	1,300,574	0	-90,320	7,849	1,218,103	1983
5,171,222	1,900,435	22,876,355	1,833,697	192,311	38,774	24,941,137	Totals 1962-1983

b) Includes Preconsolidation Repayment Water, 1977 Emergency Relief Water, Exchange Water, Kern River Intertie Water (portion not delivered as Entitlement), Regulated Delivery of Local Supply, Non-SWP water delivered to Napa County FC&WCD through SWP Facilities, and Wheeling of CVP water.

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 1983, a total of 7,849 acre-feet was conveyed under this category, as follows:

- o 3,275 acre-feet for use at public recreation facilities at Lake Del Valle, San Luis Reservoir, O'Neill Forebay, Silverwood, Pyramid, and Castaic Lakes, and Lake Perris;
- o 3,487 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;
- o 706 acre-feet to replace water losses at Castaic Lagoon, an impoundment devoted entirely to recreation;
- o 381 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 1983 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.

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 "make-up" water over the years so that now only 10 contractors have remaining rights. No makeup water was delivered in 1982 or 1983 as both years were very wet. As shown in Column (8) of Table 4, there remained 128,116 acre-feet of credits for future deliveries as of January 1, 1984 -- 123,329 acre-feet under Article 12(d) and 4,787 acre-feet under Article 14(b).

Deliveries Under Wet-Weather Provisions. Under water supply contract Article 7 (South Bay contractors) or Article 45 (San Joaquin contractors), SWP contractors can acquire credits for future deliveries if above-normal supplies of local water reduce their needs 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.

As of January 1, 1983, six contractors had acquired credits totaling 216,050 acre-feet for future delivery of entitlement water under the wet-weather provisions of their contracts. During 1983, the County of Kings took delivery of the 750 acre-feet of Article 45 water for which it had acquired a credit in 1982. Because of above-normal local water supplies in 1983, Empire West Side Irrigation District (Empire) and Oak Flat Water District (Oak Flat) could not use all of their entitlement water. Under Article 45 of their contracts, additional future delivery credits of 3,000 acre-feet (Empire), and 778 acre-feet (Oak Flat) were acquired, which brought their total year-end credits to the values shown in Column (7) of Table 4. As outlined in the following discussion of future entitlement reduction credits,

TABLE 4: SUMMARY OF 1983 DELIVERIES AND CREDITS TO LONG-TERM CONTRACTORS

Long-Term Water Supply Contractor	Water Deliveries in 1983 (Acre-Feet)						Future Entitlement Credits (Acre-Feet)			
	Entitlement Water Deliveries			Surplus Water Deliveries	Other Water Deliveries	Total Deliveries (3+4+5=6)	Future Entitlement Delivery Credit as of 1/1/84			Future Entitlement Reduction Credit Article 7 or 45
	1983 Entitlement	Entitlement Deferred from Prior Year	Total Entitlement (1+2=3)				Article 7 or 45	Articles 12(d) and 14(b)	Total (7+8=9)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
UPPER FEATHER RIVER AREA										
County of Butte	325	-	325	-	-	325	-	-	-	-
Plumas County FC&WCD	262	-	262	-	-	262	-	-	-	-
SOUTH BAY AREA										
Alameda County FC&WCD, Zone 7	4,766	-	4,766	-	-	4,766	53,741	2,438	56,179	-
Alameda County WD	3,157	-	3,157	-	-	3,157	96,609	2,220	98,829	-
Santa Clara Valley WD	86,733	-	86,733	-	-	86,733	-	-	-	-
SAN JOAQUIN VALLEY AREA										
County of Kings	2,800	750 ^a	3,550	-	-	3,550	0	-	0	-
Devil's Den WD	12,659	-	12,659	-	-	12,659	41 ^b	-	41	-
Dudley Ridge WD	42,900	-	42,900	13,019	-	55,919	-	-	-	-
Empire West Side ID	0	-	0	-	-	0	3,000 ^b	-	3,000	-
Kern County WA	594,507	-	594,507	-	605 ^c	595,112	-	-	-	-
Oak Flat WD	3,822	-	3,822	-	-	3,822	1,440 ^d	-	1,440	2,466
Tulare Lake Basin WSD	1,006	-	1,006	-	-	1,006 ^e	70,191 ^e	-	70,191	0 ^e
SOUTHERN CALIFORNIA AREA										
Antelope Valley-East Kern WA	32,961	-	32,961	-	-	32,961	-	14,841 ^f	14,841	-
Castaic Lake WA	9,476	-	9,476	-	-	9,476	-	500	500	-
Coachella Valley WD	14,547	-	14,547	-	-	14,547	-	-	-	-
Crestline-Lake Arrowhead WA	911	-	911	-	-	911	-	151	151	-
Desert WA	23,000	-	23,000	-	-	23,000	-	-	-	-
Littlerock Creek ID	38	-	38	-	-	38	-	438	438	-
Mojave WA	-	-	-	-	34,356 ^g	34,356	-	20	20	-
San Bernardino Valley MWD	5,994	-	5,994	-	-	5,994	-	4,269	4,269	-
San Gabriel Valley WD	734	-	734	-	-	734	-	1,000	1,000	-
The Metropolitan Water District of Southern California	343,521	-	343,521	-	28,464 ^g	371,985	-	102,239	102,239	-
SUBTOTAL	1,184,119	750	1,184,869	13,019	63,425	1,261,313	225,022	128,116	353,138	2,466
NORTH BAY AREA										
Napa County FC&WCD ^h	2,287	-	2,287	-	-	2,287	-	-	-	-
TOTAL ALL AREAS	1,186,406	750	1,187,156ⁱ	13,019	63,425	1,263,600	225,002	128,116	353,138	2,466

- a) Article 45 Wet Weather Deliveries.
- b) Carry-over storage of Entitlement Water under separate letter agreements dated October 1, 1979.
- c) 1977 Emergency Relief Water.
- d) Oak Flat WD received 778 acre-feet Wet Weather credit during 1983, increasing its total available Future Entitlement Delivery Credit to 1,440 acre-feet.
- e) Tulare Lake Basin WSD used its entire 74,852-acre-foot Future Entitlement Reduction Credit to reduce its 1983 entitlement from 84,400 to 9,548 acre-feet (Amendment No. 19, dated March 23, 1983). The District took only 1,006 acre-feet during 1983 however, and accrued an additional 8,542 acre-foot Future Entitlement Delivery Credit; this increased its total Future Entitlement Delivery Credit to 70,191 acre-feet.
- f) Antelope Valley-East Kern WA 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.
- g) This water entered the Aqueduct through the Kern River Intertie, and was delivered under the terms of letter agreements executed in February 1983.
- h) Non-SWP water delivered to Napa County FC&WCD through SWP facilities; included here to match treatment in Appendix B.
- i) Equals 1983 total as shown in Table B-5B.

Tulare Lake Basin Water Storage District accrued an additional future delivery credit of 8,542 acre-feet in 1983, increasing its total wet weather credit to 70,191 acre-feet.

Both Empire and Devil's Den Water District (Devil's Den) have reached their maximum annual entitlement. Therefore, Empire is no longer able to exercise the delivery provisions of Article 45. Devil's Den had not amended the wet-weather provisions into its contract prior to reaching maximum annual entitlement. Empire and Devil's Den do, however, have temporary "carry-

over" storage rights in either Lake Oroville or San Luis Reservoir under letter agreements executed on October 1, 1979. Both Empire and Devil's Den requested that their undelivered 1983 entitlement water be stored in Lake Oroville. A total of 3,041 acre-feet of undelivered 1983 entitlement water was stored, contingent on availability of reservoir space. On January 1, 1984, Lake Oroville exceeded its flood control reservation and Empire's carry-over water was released from storage. Accordingly, Empire received a monetary credit for 3,000 acre-feet as provided in the October 1, 1979 storage agree-

ment. No operational losses were deducted for only one day of storage. The Devil's Den 1983 carryover water (41 acre-feet) was being transported in the California Aqueduct for delivery when Lake Oroville spilled; thus, the Devil's Den water was not spilled, but was delivered on January 1, 1984. Therefore, the future delivery credits shown in Table 4 for Empire and Devil's Den were eliminated by January 2, 1984.

Future Entitlement Reduction

Credits. 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. Two contractors, Oak Flat Water District and Tulare Lake Basin Water Storage District (Tulare), made such increases in 1972 and 1973 and acquired rights to reduce future entitlement deliveries by 2,466 and 74,852 acre-feet, respectively. These rights were unused until 1983, when Tulare exercised its entire 74,852-acre-foot reduction credit to lower its 84,400-acre-foot annual entitlement to 9,548 acre-feet. Even with this reduced entitlement, Tulare needed only 1,006 acre-feet of SWP water in 1983. Therefore, Tulare accrued a future delivery credit of 8,542 acre-feet for 1983. This increased its total wet-weather credit to 70,191 acre-feet, as shown in Column (7) of Table 4.

Total 1983 Water Deliveries

During 1983, the SWP provided water service to 25 agencies. These included 21 long-term water contractors and 4 noncontractors. Monthly deliveries to each of the 25 agencies, shown in Table 5, are summarized as follows:

- o 1,184,119 acre-feet of 1983 entitlement water to 20 long-term contractors (only four of which took their full contract entitlements);

- o 750 acre-feet of entitlement water to one long-term contractor, deferred from 1982 under the wet-weather provisions (Article 45 of its contract);
- o 13,019 acre-feet of surplus water to one long-term contractor;
- o 6,071 acre-feet of preconsolidation repayment water delivered to one of the two companies holding a preconsolidation repayment water contract;
- o 605 acre-feet of 1977 emergency relief water to a long-term contractor;
- o 62,820 acre-feet of Kern River Intertie water to two long-term contractors, under special letter agreements;
- o 30,539 acre-feet of regulated local supply to two long-term contractors and two noncontractors;
- o 2,287 acre-feet of federal water transported to a long-term contractor;
- o 364 acre-feet of CVP water wheeled to a San Joaquin Valley agency.

Table 5 shows monthly deliveries of each type of water served in 1983, along with summaries of entitlements and entitlements not delivered. The types of water service not described in the preceding sections are covered in the following paragraphs.

Preconsolidation Repayment Water.

In 1964, DWR entered into two contracts to obtain water to preconsolidate land within the right of way of the California Aqueduct. This water was to be paid back on request after the Aqueduct began service. The contracts, which have changed hands over the years, are currently held by Shell California Production, Inc. (formerly Belridge Oil Company) and the J. G. Boswell Company. In 1983, 6,071 acre-feet were

delivered to Shell California Production, Inc., leaving a balance of 31,613 acre-feet yet to be delivered. In 1983 no water was delivered to the J. G. Boswell Company, leaving a balance of 44,895 acre-feet to be delivered. These contracts will terminate December 31, 1984. Both companies have requested extensions on their contracts. DWR is currently considering these requests.

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 (see Bulletin 132-79, pages 88-89). Two non-SWP contractors (Green Valley Water District and Tracy Golf and Country Club) purchased a total of 650 acre-feet and took delivery 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. Through 1983, KCWA had taken only 73,005 acre-feet, leaving 21,521 acre-feet remaining to be delivered. At KCWA's request, the agreement has been amended to extend the delivery deadline to December 31, 1986.

Kern River Intertie Water. As described previously in this chapter under "Aqueduct Operations," more than 750,000 acre-feet of flood water were diverted into the California Aqueduct via the Kern River Intertie in 1983. Most of this water was stored or delivered under normal SWP operating procedures, just as though it had been pumped from the Delta. However, to provide additional relief of flooding in the Tulare Lake Basin, DWR, MWDC, and Delta Lands Reclamation District No. 770 (Delta Lands) signed letter agreements on February 15, 1983. Under these agreements, MWDC reduced its deliveries of Colorado River water in

February and March, instead taking delivery of 28,464 acre-feet of Intertie water; Delta Lands paid actual costs of delivering the water, plus administrative and variable replacement costs, less MWDC's avoided Colorado River pumping costs.

Under similar agreements signed February 28, 1983 between DWR, Delta Lands, and Mojave Water Agency (Mojave), a total of 34,356 acre-feet of Intertie water was released to the Mojave River in February and March. Mojave used 24,489 acre-feet of this water for ground water recharge and 9,867 acre-feet flowed past the recharge area during a period of high local runoff. Delta Lands paid the variable replacement costs for the recharge water and Mojave paid the remaining cost. Delta Lands paid the full costs associated with the other 9,867 acre-feet.

Under other agreements (described in Bulletin 132-83, page 106), MWDC increased its deliveries of entitlement water by 58,505 acre-feet in May and June 1983 so that additional Intertie water could be accepted into the Aqueduct. Under these arrangements, Delta Lands paid MWDC's additional costs. Because the increased MWDC deliveries in May and June were treated as entitlement water, they are not included with the Kern River Intertie water in Tables 3, 4, or 5.

Regulated Delivery of Local Supply. SWP facilities are also used to transport nonproject water for both long-term SWP contractors and for other agencies under various agreements in order to honor local water rights. Some of this water just passes through SWP 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 1983, a total of 30,539 acre-feet was delivered in this manner to two long-term contractors and two other agencies.

TABLE 5: MONTHLY WATER

(in acre-feet)

Line No.	Contracting Agency and Type of Service	Month						
		JAN	FEB	MAR	APR	MAY	JUN	JUL
FEATHER RIVER SERVICE AREA								
County of Butte:								
1.	Entitlement Water	54	67	46	57	16	0	0
Last Chance Creek Water District:								
2.	Regulated Delivery of Local Supply	0	0	0	0	0	302	2,583
Plumas County Flood Control and Water Conservation District:								
3.	Entitlement Water	0	0	0	0	20	58	68
Thermalito Irrigation District:								
4.	Regulated Delivery of Local Supply	0	0	0	0	20	179	334
5.	AREA TOTAL	54	67	46	57	56	539	2,985
NORTH BAY SERVICE AREA								
Napa County Flood Control and Water Conservation District:								
6.	Non-SWP Water via SWP Facilities	94	68	51	55	87	251	284
Solano County Flood Control and Water Conservation District:								
7.	Entitlement Water	0	0	0	0	0	0	0
8.	AREA TOTAL	94	68	51	55	87	251	284
SOUTH BAY SERVICE AREA								
Alameda County Flood Control and Water Conservation District, Zone 7:								
9.	Entitlement Water	0	16	6	85	140	998	1,059
10.	Regulated Delivery of Local Supply	717	606	698	812	1,121	907	1,091
11.	Agency Total	717	622	704	897	1,261	1,905	2,150
Alameda County Water District:								
12.	Entitlement Water	0	0	0	0	0	761	834
13.	Regulated Delivery of Local Supply	969	668	727	723	797	288	521
14.	Agency Total	969	668	727	723	797	1,049	1,355
Santa Clara Valley Water District:								
15.	Entitlement Water	4,754	3,785	4,636	6,223	8,243	8,115	9,757
16.	AREA TOTAL	6,440	5,075	6,067	7,843	10,301	11,069	13,262
SAN JOAQUIN VALLEY SERVICE AREA								
Shell California Production, Inc. (formerly Belridge Oil Company):								
17.	Preconsolidation Repayment Water	562	439	465	470	439	536	550
County of Kings:								
18.	Entitlement Water	0	0	0	0	586	308	1,089
19.	Article 45(f) Wet Weather Water	0	0	0	0	0	466	284
20.	Agency Total	0	0	0	0	586	774	1,373
Devil's Den Water District:								
21.	Entitlement Water	0	0	0	1,158	1,969	1,883	1,431
Dudley Ridge Water District:								
22.	Entitlement Water	550	0	373	2,985	4,290	6,864	7,722
23.	Surplus Water	138	0	0	0	3,281	2,563	4,515
24.	Agency Total	686	0	373	2,985	7,571	9,427	12,237
Empire West Side Irrigation District:								
25.	Entitlement Water	0	0	0	0	0	0	0
Kern County Water Agency:								
26.	Entitlement Water	13,821	12,318	13,571	39,469	63,494	107,506	135,510
27.	1977 Emergency Relief Water	55	55	55	55	55	55	55
28.	Agency Total	13,876	12,373	13,626	39,524	63,549	107,561	135,565
Oak Flat Water District:								
29.	Entitlement Water	0	0	0	278	700	853	1,136
Tracy Golf and Country Club:								
30.	Wheeling of Federal CVP Water	0	0	0	0	61	59	76
Tulare Lake Basin Water Storage District:								
31.	Entitlement Water	282	0	0	0	0	0	0
32.	AREA TOTAL	15,408	12,812	14,464	44,415	74,875	121,093	152,368

DELIVERIES IN 1983

(in acre-feet)

Month							1983 Contract Entitlement	1983 Entitlement Not Delivered	Net Cumulative Entitlement Not Delivered Through		Line No.
AUG	SEP	OCT	NOV	DEC	TOTAL	1982			1983		
0	2	0	32	51	325	1,200	875	9,953	10,828	1.	
3,792	2,053	236	107	0	9,073	-	-	-	-	2.	
64	42	5	3	2	262	800	538	3,462	4,000	3.	
343	275	155	100	53	1,459	-	-	-	-	4.	
4,199	2,372	396	242	106	11,119	2,000	1,413	13,415	14,828	5.	
293	240	548	226	90	2,287	-	-	-	-	6.	
0	0	0	0	0	0	950	950	1,950	2,900	7.	
293	240	548	226	90	2,287	950	950	1,950	2,900	8.	
1,062	733	647	20	0	4,766	25,000	20,234	82,083	102,317	9.	
1,105	1,072	829	958	778	10,694	-	-	-	-	10.	
2,167	1,805	1,476	978	778	15,460	-	-	-	-	11.	
799	763	0	0	0	3,157	28,400	25,243	169,854	195,097	12.	
495	981	1,186	960	998	9,313	-	-	-	-	13.	
1,294	1,744	1,186	960	998	12,470	-	-	-	-	14.	
9,686	9,382	8,620	7,514	6,018	86,733	88,000	1,267	39,515	40,782	15.	
13,147	12,931	11,282	9,452	7,794	114,663	141,400	46,744	291,452	338,196	16.	
512	405	483	596	614	6,071	-	-	-	-	17.	
817	0	0	0	0	2,800	2,800	0	750	0	18.	
0	0	0	0	0	750	-	-	-	-	19.	
817	0	0	0	0	3,550	-	-	-	-	20.	
1,468	729	5	1,036	2,980	12,659	12,700	41	5	46	21.	
10,691	3,546	3,305	1,287	1,287	42,900	42,900	0	0	0	22.	
0	0	78	2,189	255	13,019	-	-	-	-	23.	
10,691	3,546	3,383	3,476	1,542	55,919	-	-	-	-	24.	
0	0	0	0	0	0	3,000	3,000	4,955	7,955	25.	
119,779	39,581	15,688	13,448	20,322	594,507	805,100	210,593	0	210,593	26.	
55	55	55	55	0	605	-	-	-	-	27.	
119,834	39,636	15,743	13,503	20,322	595,112	-	-	-	-	28.	
705	150	0	0	0	3,822	4,600	778	662	1,440	29.	
69	56	35	5	3	364	-	-	-	-	30.	
560	0	0	0	164	1,006	9,548	8,542	61,649	70,191	31.	
134,656	44,522	19,649	18,616	25,625	678,503	880,648	222,954	68,021	290,225	32.	

TABLE 5: MONTHLY WATER
(in acre-feet)

Line No.	Contracting Agency and Type of Service	Month							
		JAN	FEB	MAR	APR	MAY	JUN	JUL	
33.	CENTRAL COASTAL SERVICE AREA San Luis Obispo County Flood Control and Water Conservation District: Entitlement Water	0	0	0	0	0	0	0	0
34.	Santa Barbara County Flood Control and Water Conservation District Entitlement Water	0	0	0	0	0	0	0	0
35.	AREA TOTAL	0	0	0	0	0	0	0	0
36.	SOUTHERN CALIFORNIA SERVICE AREA Antelope Valley-East Kern Water Agency: Entitlement Water	484	356	495	2,558	4,551	5,822	6,954	
37.	Castaic Lake Water Agency: Entitlement Water	630	481	480	685	1,101	1,114	1,326	
38.	Coachella Valley Water District: Entitlement Water	1,212	1,212	1,212	1,212	1,212	1,212	1,212	
39.	Crestline-Lake Arrowhead Water Agency: Entitlement Water	97	65	57	54	49	95	200	
40.	Desert Water Agency: Entitlement Water	1,916	1,916	1,916	1,916	1,916	1,916	1,916	
41.	Littlerock Creek Irrigation District: Entitlement Water	0	0	0	0	0	0	0	
42.	Mojave Water Agency: Entitlement Water	0	0	0	0	0	0	0	
43.	Kern River Intertie Water	0	16,401	17,955	0	0	0	0	
44.	Agency Total	0	16,401	17,955	0	0	0	0	
45.	Palmdale Water District: Entitlement Water	0	0	0	0	0	0	0	
46.	San Bernardino Valley Municipal Water District: Entitlement Water	0	558	671	863	523	213	636	
47.	San Gabriel Valley Municipal Water District: Entitlement Water	726	0	0	0	8	0	0	
48.	San Geronio Pass Water Agency: Entitlement Water	0	0	0	0	0	0	0	
49.	The Metropolitan Water District of Southern California: Entitlement Water	26,893	26,469	26,669	18,290	49,766	72,040	42,638	
50.	Kern River Intertie Water	0	11,657	16,807	0	0	0	0	
51.	Agency Total	26,893	38,126	43,476	18,290	49,766	72,040	42,638	
52.	Ventura County Flood Control District: Entitlement Water	0	0	0	0	0	0	0	
53.	AREA TOTAL	31,958	59,115	66,262	25,578	59,126	82,412	54,882	
54.	ALL AGENCIES Entitlement Water (1983)	51,419	47,243	50,132	75,833	138,584	209,758	213,488	
55.	Deliveries Under Wet Weather Provisions	0	0	0	0	0	466	284	
56.	Subtotal (Entitlement Water Delivered)	51,419	47,243	50,132	75,833	138,584	210,224	213,772	
57.	Surplus Water	138	0	0	0	3,281	2,563	4,515	
58.	Preconsolidation Repayment Water	562	439	465	470	439	536	550	
59.	1977 Emergency Relief Water	55	55	55	55	55	55	55	
60.	Kern River Intertie Water	0	28,058	34,762	0	0	0	0	
61.	SUBTOTAL (SWP WATER)	52,174	75,795	85,414	76,358	142,359	213,378	218,892	
62.	Regulated Delivery of Local Supply	1,686	1,274	1,425	1,535	1,938	1,676	4,529	
63.	Non-SWP Water to Napa County FC&WCD	94	68	51	55	87	251	284	
64.	Wheeling of CVP Water	0	0	0	0	61	59	76	
65.	TOTAL WATER	53,954	77,137	86,890	77,948	144,445	215,364	223,781	

DELIVERIES IN 1983

(in acre-feet)

Month							1983 Contract Entitlement	1983 Entitlement Not Delivered	Net Cumulative Entitlement Not Delivered Through		Line No.
AUG	SEP	OCT	NOV	DEC	TOTAL	1982			1983		
0	0	0	0	0	0	3,000	3,000	4,000	7,000	33.	
0	0	0	0	0	0	5,439	5,439	7,126	12,565	34.	
0	0	0	0	0	0	8,439	8,439	11,126	19,565	35.	
4,729	5,098	874	590	450	32,961	87,700	54,739	194,413	249,152	36.	
1,171	1,029	615	484	360	9,476	24,600	15,124	111,142	126,266	37.	
1,212	1,212	1,212	1,212	1,215	14,547	14,547	0	12,779	12,779	38.	
18	96	65	45	70	911	3,770	2,859	11,429	14,288	39.	
1,916	1,916	1,916	1,916	1,924	23,000	23,000	0	19,700	19,700	40.	
0	38	0	0	0	38	1,500	1,462	4,628	6,090	41.	
0	0	0	0	0	0	34,300	34,300	193,120	227,420	42.	
0	0	0	0	0	34,356	-	-	-	-	43.	
0	0	0	0	0	34,356	-	-	-	-	44.	
0	0	0	0	0	0	12,940	12,940	84,320	97,260	45.	
691	582	277	461	519	5,994	74,500	68,506	446,897	515,403	46.	
0	0	0	0	0	734	19,900	19,166	106,429	125,595	47.	
0	0	0	0	0	0	9,800	9,800	23,400	33,200	48.	
35,682	16,206	10,437	9,294	9,137	343,521	1,358,000	1,014,479	2,957,635	3,972,114	49.	
0	0	0	0	0	28,464	-	-	-	-	50.	
35,682	16,206	10,437	9,294	9,137	371,985	-	-	-	-	51.	
0	0	0	0	0	0	4,000	4,000	6,000	10,000	52.	
45,419	26,177	15,396	14,002	13,675	494,002	1,668,557	1,237,375	4,171,892	5,409,267	53.	
191,050	81,105	43,666	37,342	44,499	1,184,119	2,701,994	1,517,875	4,557,856	6,074,981	54.	
0	0	0	0	0	750	-	-	-	-	55.	
191,050	81,105	43,666	37,342	44,499	1,184,869	-	-	-	-	56.	
0	0	78	2,189	255	13,019	-	-	-	-	57.	
512	405	483	596	614	6,071	-	-	-	-	58.	
55	55	55	55	0	605	-	-	-	-	59.	
0	0	0	0	0	62,820	-	-	-	-	60.	
191,617	81,565	44,282	40,182	45,368	1,267,384	-	-	-	-	61.	
5,735	4,381	2,406	2,125	1,829	30,539	-	-	-	-	62.	
293	240	548	226	90	2,287	-	-	-	-	63.	
69	56	35	5	3	364	-	-	-	-	64.	
197,714	86,242	47,271	42,358	47,290	1,300,574	2,701,994	1,517,875	4,557,856	6,074,963	65.	

Non-SWP Water to Napa County Flood Control and Water Conservation District. Pending completion of Phase II of the North Bay Aqueduct, Napa County Flood Control and Water Conservation District receives interim water from the USBR, wheeled by Solano County Flood Control and Water Conservation District to Reach 3 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 1983, Napa received 2,287 acre-feet of federal water.

Wheeling of CVP Water. During 1983 there were essentially three arrangements for wheeling CVP water through SWP facilities. In each arrangement, the USBR provides the electrical energy required for moving the water through SWP facilities.

o Cross Valley Canal. USBR/DWR contracts with nine local agencies provide for wheeling CVP water through SWP facilities to Kern County Water Agency's Cross Valley Canal. Another contract between DWR and the USBR provides the water and the electrical energy needed and establishes that up to 128,300 acre-feet per year may be wheeled. The State's charges for the wheeling service under the nine contracts are for use of SWP facilities to transport water from the Delta to the Cross Valley Canal. During 1983, no CVP water was wheeled for the Cross Valley Canal. Water wheeled for the Cross Valley Canal in prior years (1976 through 1982) is included in the "Other Water" column of Table 3 and in prior versions of Table 5 in Bulletins 132-77 through 132-83.

o SWRCB Decision 1485 Water. In April 1981, DWR executed an interim agreement with the USBR to wheel CVP water through SWP facilities to water users who would enter into temporary contracts with

the USBR. As part of this interim 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, provided 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 78,767 acre-feet of CVP water was wheeled in 1983 to replace capacity foregone in May and June 1982 due to CVP export reduction. For water accounting purposes this is not considered a delivery from SWP facilities and it is not included in Tables 3 or 5.

o Annual Wheeling Contracts. Under an extension of the April 1981 agreement mentioned above, DWR conveyed 364 acre-feet of CVP water to Tracy Golf and Country Club. This delivery is shown in Table 5 and similar deliveries under annual wheeling contracts are included in the history portion of Table 3 and in prior years' versions of Table 5.

Power Operations

In 1966, DWR signed the "Suppliers" Contract with Pacific Gas and Electric Co. (PGandE), Southern California Edison Co. (SCE), Los Angeles Department of Water and Power (LADWP), and San Diego Gas and Electric Co. (SDG&E). The Suppliers Contract, which provided for purchase of all SWP power not available from other sources and for transmission of all power used by SWP plants, was terminated effective March 31, 1983. On the same date, the Oroville-Thermalito Power Sale Contract was also terminated; that 1967 contract provided for the sale of all output of Hyatt and Thermalito Powerplants to PGandE, SCE, and SDG&E.

March 31, 1983 was also the expiration date of 1967 contracts with the City of Seattle, City of Tacoma, and Puget Sound Power and Light Co. for purchase of Canadian Entitlement Power. Purchases under these contracts had furnished 11 percent of the total SWP pumping energy consumed from 1968 through 1982.

On April 1, 1983, DWR began operation as a bulk power agency, operating a mix of owned, contracted, and purchased power resources to meet SWP needs via contracted transmission capacity. SWP power operations in 1983 reflected this change to utility status after the first three months of the year.

Energy Use

Table 6 summarizes monthly energy use at SWP plants in 1983. For January, February, and March, the tabulated figures represent the energy used at each plant including allowances for transmission losses as provided in the Suppliers Contract. For the remainder of the year, system losses are tabulated separately, reflecting the new contracts and agreements under which SWP power is transmitted.

Total energy use for 1983, approximately 2.7 billion kWh, was the lowest for any year since the 1977 drought and was only 50 percent of that used in 1982. The principal reason for the reduced energy use in 1983 was that MWDSC had available substantial amounts of water and power from the Colorado River and elected to reduce its deliveries from the SWP. The wet weather in 1983 and the "Payment-in-Kind" program also reduced demands for SWP water in the San Joaquin Valley by about 40 percent from 1982 levels. In addition, over 750,000 acre-feet of flood water were diverted into the California Aqueduct via the Kern River Intertie, saving over 300 million kWh that would have been required to pump this quantity of water from the Delta.

Energy Sources

Table 6 also shows the sources of SWP energy during 1983. Hyatt and Thermalito Powerplants constituted the largest single source, with 4.9 billion kWh generated; this is over twice the estimated average production at these plants and the largest annual output since operation began in 1968.

In contrast, combined energy generation at the SWP power recovery plants (San Luis, Devil Canyon, Warne, and Castaic) was the lowest since the wet year of 1974, even though Warne Powerplant began operation only in November 1982. Generation at these recovery plants varies with the amount of water conveyed through the SWP system and 1983 energy output mirrored the reduced pumping energy consumption.

Unit 1 of the Pine Flat Powerplant began furnishing energy to the SWP in November 1983 during initial testing and operation. DWR receives all of the output of this plant under a 50-year contract with the Kings River Conservation District. The last of the plant's three units was declared commercially operable on April 1, 1984.

In April 1983, the SWP began receiving energy under contract from five small hydroelectric facilities owned and operated by MWDSC. As explained in Chapter VI, DWR has exchange arrangements with SCE and LADWP to facilitate transmission of this energy.

The 1979 DWR-SCE Power Contract also went into effect in April 1983. Under this contract, part of the Hyatt-Thermalito generation and all of the output of the 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

TABLE 6: MONTHLY POWER

(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	1.15	0.03	0	0	0.01	0.12	0.18
Cordelia Pumping Plant	0.05	0.04	0.03	0.03	0.05	0.12	0.15
South Bay Pumping Plant	1.71	1.41	0.86	1.62	5.03	8.64	10.39
Del Valle Pumping Plant	0.01	0.01	0.01	0.01	0.02	0	0.01
Harvey O. Banks Delta Pumping Plant	113.21	104.30	25.10	2.52	2.86	12.84	20.93
San Luis Pumping-Generating Plant (SWP Share)	94.61	109.96	28.76	0.30	2.92	23.06	20.65
Dos Amigos Pumping Plant (SWP Share)	1.33	0.12	0.17	1.05	0.39	2.21	7.92
Buena Vista Pumping Plant	9.66	13.35	19.35	6.62	13.08	21.75	20.36
Wheeler Ridge Pumping Plant	9.61	13.91	21.39	6.29	12.78	20.27	17.29
Wind Gap Pumping Plant	21.00	30.99	48.14	11.94	25.62	40.81	34.33
A. D. Edmonston Pumping Plant	72.21	107.51	169.22	38.85	82.82	135.44	110.48
Pearblossom Pumping Plant	15.30	23.71	43.59	9.65	18.13	24.95	14.63
Devil Canyon Powerplant (Station Service)	0.02	0.01	0.04	0	0	0	0
Oso Pumping Plant	2.74	3.39	3.05	0.40	1.34	4.51	5.61
William E. Warne Powerplant (Station Service)	0.08	0.07	0.08	0.11	0.09	0.06	0.07
Las Perillas Pumping Plant (SWP Share)	0.17	0.09	0.15	0.64	1.05	1.44	1.49
Badger Hill Pumping Plant	0.42	0.18	0.36	1.79	2.85	3.95	4.11
Subtotal	343.28	409.08	360.30	81.82	169.04	300.17	268.60
System Losses and Unaccounted-for Energy	0	0	0	19.11	22.96	31.84	37.45
Total	343.28	409.08	360.30	100.93	192.00	332.01	306.05
SWP ENERGY SOURCES							
Hyatt-Thermalito Powerplants	344.02	465.55	567.57	569.24	545.25	465.22	367.90
San Luis Pumping-Generating Plant (SWP Share)	0	0	0.04	0.34	0.68	10.94	10.32
Devil Canyon Powerplant	26.56	31.31	36.12	25.42	40.50	35.88	29.46
William E. Warne Powerplant	5.15	7.49	5.88	0	9.18	9.86	12.83
Castaic Powerplant (SWP Share)	5.28	12.50	20.16	1.21	3.94	14.93	21.21
Pine Flat Powerplant	0	0	0	0	0	0	0
MWDSC Hydroelectric Plants	0	0	0	12.85	14.92	16.34	16.20
Power Exchange - Delivered to SCE	0	0	0	<205.11>	<230.83>	<171.00>	<164.96>
Power Exchange - Received from SCE	0	0	0	227.98	242.84	179.16	245.10
Reid Gardner Unit No. 4	0	0	0	0	0	0	57.49
TERA Corporation	0	0.01	0.02	0.02	0.17	0.17	0.67
Purchases							
Canadian Entitlement Power	51.02	40.55	44.08	0	0	0	0
Bonneville Power Authority	0	7.84	0.34	1.80	3.29	0	1.46
Bonneville Power Authority (Banking Return)	7.66	0	0.23	0	0	0	0
California Suppliers	246.46	309.35	253.43	0	0	0	0
Portland General Electric Co.	0	0	0	71.90	73.50	72.90	74.40
Pacific Power and Light Co.	0	0	0	34.75	30.41	74.28	108.29
USBR Schedule Excess	0	0	0	0.34	0.37	0.25	0.25
Emergency Service - Energy Delivered	0	0	0	0	0	<11.34>	<9.51>
Emergency Service - Energy Returned	0	0	0	0	0	20.50	17.05
Subtotal	686.15	874.60	927.87	740.74	734.22	718.09	788.16
Less Delivery to California Power Pool Companies	342.87	465.52	567.57	0	0	0	0
Less Sales	0	0	0	639.81	542.22	386.08	482.11
Total	343.28	409.08	360.30	100.93	192.00	332.01	306.05

OPERATIONS IN 1983

(millions of kilowatthours)

MONTH						ITEM
AUG	SEP	OCT	NOV	DEC	TOTAL	
						ENERGY USED BY SWP PUMPING AND POWER PLANTS
0	0.33	0.36	12.72	0	14.90	Hyatt-Thermalito Pumpback and Station Service
0.14	0.12	0.29	0.42	0.04	1.18	Cordelia Pumping Plant
10.63	7.26	4.10	2.76	1.78	56.19	South Bay Pumping Plant
0	0	0	0.01	0.01	0.09	Del Valle Pumping Plant
33.97	12.28	6.56	13.68	8.29	356.54	Harvey O. Banks Delta Pumping Plant
23.83	9.25	0.97	11.71	0.35	326.37	San Luis Pumping-Generating Plant (SWP Share)
12.46	5.70	2.45	3.50	3.66	40.96	Dos Amigos Pumping Plant (SWP Share)
10.44	5.43	3.48	6.47	9.76	139.75	Buena Vista Pumping Plant
6.27	4.75	3.35	7.05	10.17	133.13	Wheeler Ridge Pumping Plant
11.32	9.02	6.05	14.04	20.95	274.21	Wind Gap Pumping Plant
32.07	27.48	18.25	48.41	71.98	914.72	A. D. Edmonston Pumping Plant
3.90	2.71	4.48	5.49	12.26	178.80	Pearblossom Pumping Plant
0	0	0	0	0.03	0.10	Devil Canyon Powerplant (Station Service)
1.05	0.85	0.19	3.51	3.87	30.51	Oso Pumping Plant
0.14	0.13	0.14	0.10	0.13	1.20	William E. Warne Powerplant (Station Service)
1.03	0.45	0.31	0.30	0.56	7.68	Las Perillas Pumping Plant (SWP Share)
2.76	1.22	0.81	0.79	1.54	20.78	Badger Hill Pumping Plant
150.01	86.98	51.79	130.66	145.38	2,497.11	Subtotal
28.72	25.86	22.67	26.62	20.49	235.72	System Losses and Unaccounted-for Energy
178.73	112.84	74.46	157.28	165.87	2,732.83	Total
						SWP ENERGY SOURCES
310.93	263.43	149.21	296.98	557.69	4,902.99	Hyatt-Thermalito Powerplants
11.71	8.02	0	1.07	0.37	43.49	San Luis Pumping-Generating Plant (SWP Share)
28.82	26.20	6.73	8.36	9.39	304.75	Devil Canyon Powerplant
0.72	1.69	0.05	8.09	6.27	67.21	William E. Warne Powerplant
0	17.97	3.53	5.21	0	105.94	Castaic Powerplant (SWP Share)
0	0	0	13.22	15.89	29.11	Pine Flat Powerplant
13.57	8.50	6.71	6.63	7.76	103.48	MWDC Hydroelectric Plants
<145.66>	<122.12>	<60.21>	<122.36>	<237.36>	<1,459.61>	Power Exchange - Delivered to SCE
211.16	177.37	284.19	292.32	413.00	2,273.12	Power Exchange - Received from SCE
96.66	52.40	27.91	98.89	85.38	418.73	Reid Gardner Unit No. 4
0.83	0.44	0.31	0.16	0.11	2.91	TERA Corporation
0	0	0	0	0	135.65	Purchases
1.32	0	0	0	0	16.05	Canadian Entitlement Power
0	0	0	0	0	7.89	Bonneville Power Authority
0	0	0	0	0	809.24	Bonneville Power Authority (Banking Return)
74.40	72.00	74.50	72.00	74.40	660.00	California Suppliers
99.09	110.06	106.85	91.10	89.50	744.33	Portland General Electric Co.
0.11	0.19	0	<0.06>	<0.12>	1.33	Pacific Power and Light Co.
<4.99>	0	0	0	0	<25.84>	USBR Schedule Excess
8.09	0	0	0	0	45.64	Emergency Service - Energy Delivered
						Emergency Service - Energy Returned
706.76	616.15	599.78	771.61	1,022.28	9,186.41	Subtotal
0	0	0	0	0	1,375.96	Less Delivery to California Power Pool Companies
528.03	503.31	525.32	614.33	856.41	5,077.62	Less Sales
178.73	112.84	74.46	157.28	165.87	2,732.83	Total

the SWP during the nine months this exchange was in effect in 1983 was over 800 million kWh.

Operation of Reid Gardner Unit No. 4 began in June 1983, with commercial operation being declared on July 26, 1983. Since DWR did not need its share of the energy generated during start-up of the unit, Nevada Power Company agreed to bank the energy until July 15, 1983 for delivery at a later date. The SWP received over 400 million kWh from Reid Gardner Unit No. 4 during 1983. Deliveries to the coal stockpile for Reid Gardner Unit No. 4 began in late 1982. When the unit began commercial operation in July 1983, the stockpile had reached 142,000 tons. Despite disruptions from an earth slide on the railroad line serving the plant, coal deliveries were sufficient to provide a stockpile of 255,000 tons by December 31, 1983. DWR plans on maintaining a normal operating stockpile of 200,000 tons (approximately a 90-day supply).

DWR has a contract with the TERA Corporation for purchase of the energy from two hundred 50-kW wind turbines to be constructed at the Bethany Wind Park near the South Bay Pumping Plant. Sixty wind turbines were operational at the end of 1983, and they delivered nearly 3 million kWh directly to the pumping plant in 1983.

For the first three months of 1983, most of the energy needed for SWP operation was purchased under the Suppliers Contract and the contracts for supply of Canadian Entitlement Power. Starting April 1, 1983, contracts with Pacific Power and Light Co. and Portland General Electric Co. supplied 300 MW of firm power to the SWP. The energy supplied, totaling about 1.4 billion kWh, was delivered via DWR's contracted 300 MW of transmission capacity in the extra high voltage (EHV) Pacific Northwest Inter-tie (see Chapter VI). In addition, minor amounts of surplus energy were

purchased from the Bonneville Power Authority at times during 1983 when it was economically advantageous. Table 7 summarizes expenditures for SWP power and transmission services purchased in 1983.

Table 6 also summarizes energy transactions under emergency service agreements with PGandE and SCE. Under these agreements, SWP power resources are made available to the utilities in emergencies. Additional energy is included when the emergency service energy is returned to the SWP.

Energy Sales

During the first three months of 1983, the energy produced by Hyatt and Thermalito Powerplants was delivered to PGandE, SCE, and SDG&E under the 1967 Oroville-Thermalito Power Sale Contract. During the remainder of the year, SWP energy supplies (including substantial purchases under contractual obligations) exceeded SWP needs and DWR sold the excess under power sale contracts to eight utilities. The amounts of energy sold and the total amount of sales to each purchaser are summarized in Table 8.

The total revenue from power sales during the last nine months of 1983 slightly exceeded expenditures for bulk power purchases and transmission services during the same period. This reflects only the cash transactions during 1983 and is not directly indicative of the true net cost of SWP energy, which includes such other costs as:

- o debt service and OM&R costs associated with SWP-owned hydroelectric facilities;
- o payments to MWDSC and Kings River Conservation District for the output of specific hydroelectric facilities;
- o debt service, OM&R, and fuel costs associated with Reid Gardner Unit No. 4.

**TABLE 7: SWP POWER AND TRANSMISSION
SERVICE PURCHASES IN 1983**

Supplier	Services Provided	Invoice Amount
<u>January 1 through March 31, 1983</u>		
Bonneville Power Authority	Energy and transmission	\$ 151,299
City of Seattle, City of Tacoma, Puget Sound Power and Light Co.	Canadian Entitlement Power	464,210
Pacific Gas and Electric Co., Southern California Edison Co., and San Diego Gas and Electric Co.	EHV transmission	375,000
Pacific Gas and Electric Co., Southern California Edison Co., Los Angeles Department of Water and Power, and San Diego Gas and Electric Co.	Capacity, energy, and transmission	3,948,729
Los Angeles Department of Water and Power	Transmission	45,071
Subtotal, January through March		\$ 4,984,309
<u>April 1 through December 31, 1983</u>		
Western Area Power Administration	Interconnection transmission	703,548
Bonneville Power Authority	Nonfirm energy	71,001
Portland General Electric Co.	Firm energy	17,456,400
Pacific Power and Light Co.	Firm capacity and energy, wheeling, and losses on third party systems	28,422,094
Pacific Gas and Electric Co.	Transmission	8,706,713
	Table Mountain-Tesla Reinforcements	16,365,870
TERA Corporation	Wind energy	248,628
Pacific Gas and Electric Co., Southern California Edison Co., and San Diego Gas and Electric Co.	EHV transmission	1,125,000
Southern California Edison Co.	Transmission and dispatching	8,494,302
The Metropolitan Water District of Southern California	Hydroelectric energy	5,124,473
Los Angeles Department of Water and Power	Transmission	132,432
Nevada Power Company	Transmission	601,643
Subtotal, April through December		\$87,452,104
1983 Total		\$92,436,413

TABLE 8: SWP POWER SALES IN 1983

Purchaser	Kilowatthours	Amount of Sale
Portland General Electric Co.	23,940,000	\$ 578,700
Pacific Gas and Electric Co.	912,890,000	18,500,311 ^(a)
Southern California Edison Co.	3,491,473,000	50,928,131 ^(b)
City of Pasadena	94,730,000	2,704,201
City of Riverside	23,511,000	752,352
City of Anaheim	39,337,000	1,258,784
Los Angeles Department of Water and Power	367,966,000	10,143,226 ^(c)
Nevada Power Company	123,780,000	3,849,930 ^(d)
Total	5,077,627,000	\$88,715,635

- a) Includes \$470,432 for emergency service
b) Includes \$28,065 for emergency service
c) Includes \$1,438,100 for peaking capacity foregone
d) Includes \$345,561 for peaking capacity

Transmission Service Agreements

Prior to termination of the Suppliers Contract on March 31, 1983, transmission of power to SWP loads was provided by the 1967 EHV Intertie Contract for purchases of Pacific Northwest power and by the Suppliers Contract for purchases of power from the suppliers. These contracts provided for delivery to certain bulk-power delivery points. Other provisions of the Suppliers Contract allowed use of transmission facilities owned by the Suppliers to deliver SWP power from the bulk-power delivery points to the SWP pumping plants.

Since termination of the Oroville-Thermalito Power Sale Contract on March 31, 1983, transmission of Hyatt-Thermalito power and power from other SWP resources is provided through PGandE's system under the 1982 Comprehensive Agreement and through SCE's system under the 1979 DWR-SCE Power Contract. The existing EHV Intertie Contract provides firm transmission service for 300 MW of Pacific Northwest power from the California-Oregon border (Malin) to delivery points on the 500-kV transmission line at Table Mountain, Tesla, Los Banos, Midway, and Vincent Substations. DWR's participation agreement with Nevada Power Company for construction and operation of Reid Gardner Unit No. 4 also provides for transmission of the SWP power from the plant to the SCE transmission line in Nevada south of Las Vegas. The principal bulk-power delivery points in the transmission system are shown on figure 14 in Chapter VI.

The Comprehensive Agreement with PGandE provided a basis for solution of a "bottleneck" problem resulting when large amounts of power are flowing through PGandE's system from Table Mountain to Tesla and Vaca-Dixon. To eliminate the problem, series capac-

itors (reinforcements) will be constructed at Table Mountain, Vaca-Dixon, and Tesla substations. DWR will pay the total construction cost of about \$35 million. PGandE will credit DWR for its cost through credits on DWR's monthly firm transmission service bills. The reinforcements will be operational in January 1985. In the interim, DWR will curtail Hyatt-Thermalito power generation before PGandE must reduce its deliveries. To prevent spilling water from Lake Oroville, DWR may sell PGandE an amount of energy from Hyatt-Thermalito equal to the amount of deliveries reduced by PGandE. The price for this energy would be the price of economy energy then being purchased by PGandE or, if PGandE were not purchasing economy energy at the time, a price mutually agreed between both parties.

Hyatt-Thermalito generation was substantially curtailed in 1983 because of high water conditions in California and the Pacific Northwest. As a partial solution to the curtailment problem until the reinforcements are in operation, DWR contracted with Western Area Power Administration (WAPA) in May 1983 to transmit 270 MW of Hyatt-Thermalito power over WAPA's transmission facilities to the Tracy substation. Hyatt-Thermalito power then enters PGandE's backbone at Tesla. The monthly transmission charge by WAPA is \$94,500.

On September 21, 1983, thirty 500-kV and five 230-kV transmission towers collapsed due to strong winds, interrupting the EHV and backbone transmission paths between Los Banos and Midway. PGandE scheduled power for Buena Vista, Wheeler Ridge, and Wind Gap Pumping Plants through the Gates-Diablo Canyon-Midway 500-kV line until the backbone transmission service was restored on October 5, 1983. Payment for this service is being negotiated.

Recreation and Visitor Activities

As summarized in Table 9, approximately 5.8 million recreation days of use took place at SWP facilities in 1983. This use includes camping, boating, fishing, swimming, bicycling, and other recreation activities and represents a decrease of about 6 percent from 1982

use. The decrease in recreation use was not consistent throughout all SWP facilities, as use was higher at some sites. The generally wet winter of 1982-83 delayed the 1983 recreation season significantly -- particularly as spring rains kept recreationists at home. Depressed economic conditions may have also contributed to reduced recreation activity.

TABLE 9: RECREATION USE AT SWP FACILITIES IN 1983

Facility	1983 Use in Recreation Days	Facility	1983 Use in Recreation Days
<u>Oroville Field Division</u>		<u>San Luis Division</u>	
Frenchman Lake	309,644	San Luis Reservoir	269,826
Antelope Lake	127,254	O'Neill Forebay	360,240
Lake Davis	304,207	Los Banos Reservoir	48,780
Lake Oroville and Thermalito Forebay	569,767	Fishing Access Sites	
Thermalito Afterbay	40,000	Canyon Road	2,593
Oroville Wildlife Area	114,728	Mervel Avenue	3,008
Total	1,465,600	Fairfax	1,862
		Three Rocks	268
		Huron	2,298
		Avenal Cutoff	1,630
<u>Delta Field Division</u>		California Aqueduct	
Lake Del Valle	259,537	Walk-In Fishing	28,912
Clifton Court Forebay	No data	Wildlife Areas	10,550
Bethany Reservoir	50,106	Total	729,967
Fishing Access Sites			
Niels Hansen	535	<u>Southern Field Division</u>	
Orestimba	1,109	Silverwood Lake	440,173
Cottonwood Road	548	Lake Perris	1,622,830
California Aqueduct		Pyramid Lake ^(a)	346,000
Walk-In Fishing	18,916	Castaic Lake	874,843
Bikeway	264	Fishing Access Sites	
White Slough Wildlife Area	6,500	77th Street East	637
Total	337,515	Longview Road	128
		California Aqueduct	
<u>San Joaquin Field Division</u>		Walk-In Fishing ^(b)	5,798
Fishing Access Sites		Bikeway	1,628
Kettleman City	2,208	Total	3,292,037
Lost Hills	2,644		
Buttonwillow	2,385	GRAND TOTAL, SWP	5,838,200
California Aqueduct			
Walk-In Fishing	5,844		
Total	13,081		

a) Pyramid Lake recreation facilities closed September 6, 1983 and reopened May 21, 1984.

b) Includes use at Munz Ranch Road, 70th Street West, and Avenue S Fishing Access Sites.

In addition to the regular recreation use, over one-half million visitor-days of use occurred at SWP visitor centers during 1983, as follows:

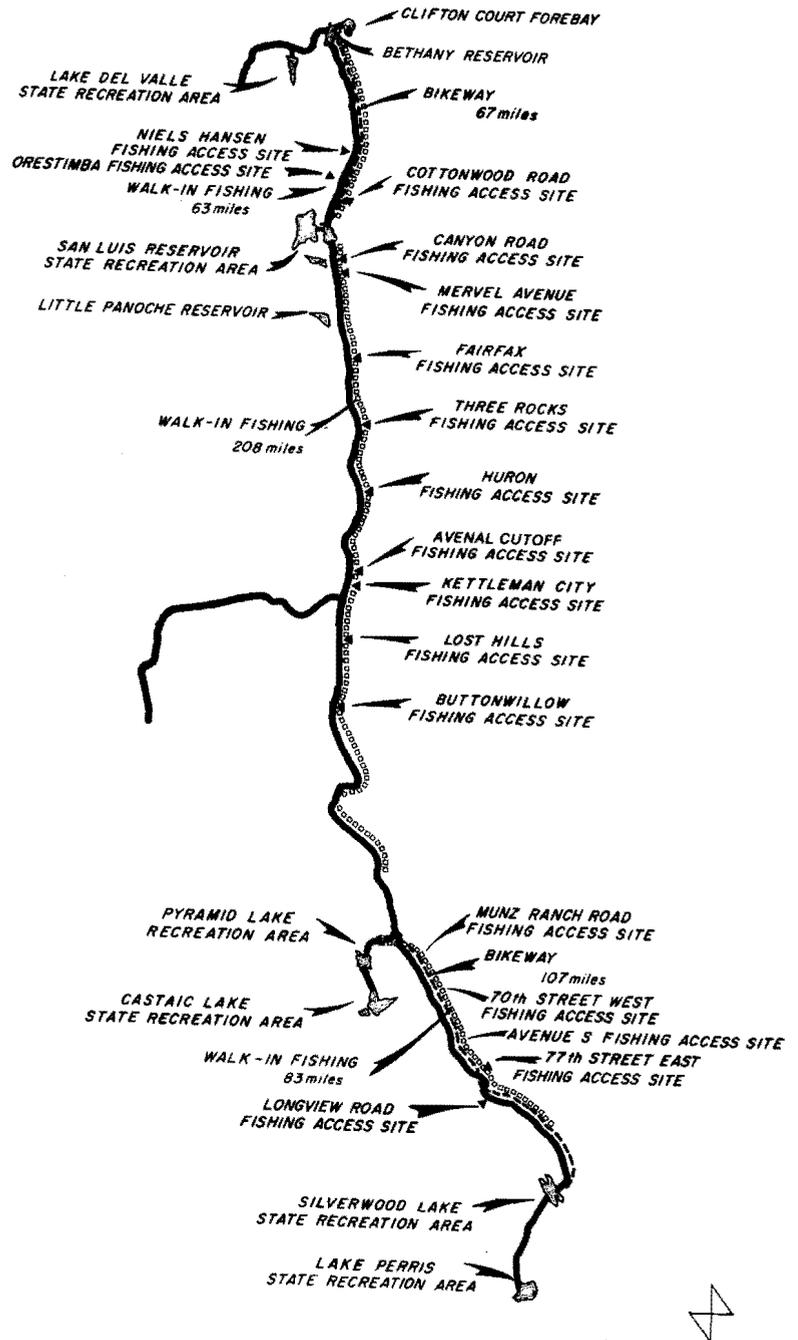
<u>Location</u>	<u>Visitor-Days</u>
Project Operations Control Center--Sacramento	495
Oroville Field Division	164,401
Delta Field Division	1,075
San Luis Field Division	207,997
San Joaquin Field Division	2,837
Southern Field Division	135,736
SWP Total	512,541

These figures include people entering visitor centers, stopping at overlooks, and participating in guided tours of SWP facilities.

Most SWP recreation and visitor use continued to be concentrated at the major reservoirs, where well-developed facilities exist to accommodate public use. In fact, over half of the total SWP recreation use in 1983 occurred at the four major reservoirs in Southern California. Expansion of recreation facilities was underway at all four of these reservoirs in 1983:

- o At Silverwood Lake, a parking area and a one-lane unpaved launching ramp for car-top boats and sailboats were constructed near the north end of the Cleghorn Arm.
- o Additions at Lake Perris included two 110-foot-long fishing floats off the dam, a 58-car parking area, a fish-cleaning facility, and additional restrooms. A one-lane concrete ramp for launching car-top boats and sailboats was completed near the beach area. The entrance to the camping area was redesigned to provide three entry lanes, and a 50-car parking area was added in the camping area.

FIGURE 7: AQUEDUCT RECREATION DEVELOPMENTS



- o At Castaic Lake, development of the Marine Patrol Headquarters and day-use picnic and parking facilities at Baal Point were completed. Construction of facilities at Skier's Landing and Fisherman's Rest was suspended due to conflicts with the contractor, but will resume in late 1984. A new Master Plan for the Castaic Lake Recreation Area is expected to be completed in 1984.
- o At Pyramid Lake, shoreline stabilization work was completed for several recreation sites. On September 6, 1983, the recreation facilities were closed for improvements, including: construction of an administration building, comfort stations, and additional picnic facilities; enlargement of the existing boat launching ramp; redesign of the traffic pattern at Emigrant Landing; and improvements to the water system at the lake. In addition, the U.S. Forest Service will be improving several boat-in recreation sites. Most of the improvements are scheduled for completion in 1984.

Also in 1983, new boat launch and dock facilities and landscaping were added at Dinosaur Point at San Luis Reservoir.

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, and 354 miles of the Aqueduct are open for walk-in fishing (271 miles in the San Joaquin Valley and 83 miles in Southern California). Also, approximately 174 miles of bikeway are now in operation (67 miles between Bethany Reservoir and O'Neill Forebay and 107 miles in the Antelope Valley area). Total use of the bikeway decreased by over 50 percent from 1982 to 1983.

Fish and Wildlife Activities

The Department of Fish and Game continued its fish planting activities at SWP facilities in 1983. Table 10 summarizes fish plantings at each location. The numbers of fish planted are generally similar to those of 1982

TABLE 10: FISH PLANTED AT SWP FACILITIES IN 1983

Location	Trout		Channel	Chinook	Total
	Catchable	Fingerling	Catfish	Salmon	
Frenchman Lake	25,000	357,000			382,000
Antelope Lake	40,000	50,000			90,000
Lake Davis	74,000	1,207,000			1,281,000
Lake Oroville	25,000			166,000	191,000
Thermalito Forebay	35,000	23,000			58,000
Lake Del Valle	61,000				61,000
Lake Banos Reservoir	11,000				11,000
Silverwood Lake	214,000				214,000
Lake Perris	164,000		15,000		179,000
Pyramid Lake	118,000				118,000
Castaic Lake	233,000		21,000		254,000
Castaic Lagoon	56,000				56,000
TOTAL	1,056,000	1,637,000	36,000	166,000	2,895,000

except at Lake Davis, where the Department of Fish and Game placed a large number of fish that were excess to other planting programs.

The Feather River Hatchery trapped 1,235 steelhead in 1983 and took 1,550,000 eggs to produce the 1984 crop of yearlings. A total of 1,700 spring-run and 7,700 fall-run salmon were trapped and 16,500,000 eggs were taken in 1983. The fish produced at Feather River Hatchery and planted during the year comprised 264,000 steelhead and 9,340,000 chinook salmon (total weight of all fish was 264,000 pounds).

With funding from both the Department of Fish and Game and DWR, new fish rearing facilities were constructed near Thermalito Afterbay Dam. These facilities will be used to rear salmon produced at the Feather River Hatchery in warmer water to suppress disease.

Operation of Little Panoche Reservoir was revised to improve fishing. Overgrowth of tules had made fishing access almost impossible. Stoplogs were added to increase the minimum pool level by 12 feet, thus inundating the existing tules.

CHAPTER III

SWP ADMINISTRATION ACTIVITIES

Along with construction and operation activities, a substantial amount of administrative and related effort is 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. Some of the contracts have been amended 20 times. A list of the amendments for each contractor, and the general subject of each, are shown in Table 11. Not included are some revisions to annual Table A entitlements for several contractors by unnumbered amendments or notices of Table A revisions. Contract amendments forwarded for signature that have yet to be signed by the contractors include:

- o An amendment to the contract with Solano County Flood Control and Water Conservation District concerning calculation of the Delta Water Charge.
- o An amendment to contracts with the City of Yuba City and Solano County Flood Control and Water Conservation District, which deletes the surcharge, surcharge credit, and power credit provisions. All other contracts reflect this amendment.
- o An amendment to realign and clarify the surplus water provisions. The amendment has been signed by 23 contractors. Those that have not signed it are City of Yuba City, County of Butte, Mojave Water Agency, Napa County Flood Control and Water Conservation District, San Bernardino Valley Municipal Water District, San Gabriel Valley Municipal Water District, and San Geronio Pass Water Agency.

- o An amendment to revise the contract with regard to Contract Issues 1, 6, and 8 has not been signed by Coachella Valley Water District. All other contracts reflect this amendment. See Bulletin 132-83, page 92, for a description of these issues.

As of June 30, 1984, amendments signed since the Bulletin 132-83 report are as follows:

- o Kern County Water Agency amended its Table A-1. The Agency requested that 15,000 acre-feet of its annual entitlement for 1984 and each succeeding year for the term of the contract be reclassified from Agricultural use to Municipal and Industrial use.
- o Tulare Lake Basin Water Storage District amended its Table A for 1984. In 1974 the District increased its annual entitlement by 25,989 acre-feet and, in 1984, decreased its 1984 annual entitlement by a like amount. The new 1984 annual entitlement is 62,611 acre-feet.
- o Antelope Valley-East Kern Water Agency amended its Table A for a five-year period. The Agency requested a reduction during the years 1984 through 1988. The request was made based on the provisions of Article 7(a) of the Agency's contract. DWR determined that the Agency's request would not impair SWP financing.
- o Napa County Flood Control and Water Conservation District amended its Table A to show entitlements beginning at 5,045 acre-feet in 1986 and increasing to a maximum of 25,000 acre-feet per year by 2021. The original Table A entitlements began at 17,500 acre-feet in 1984 and reached 25,000 acre-feet by 1990.

TABLE 11: WATER SUPPLY CONTRACT AMENDMENTS AS OF JUNE 30, 1984

Contracting Agency	Minimum Project Yield Increased	Supplemental Conservation Facilities Costs Delayed			Project Interest Rate Modified	Surcharge and Surcharge Credit Provisions					"Wet Weather" Provisions Added	"A" and "R" Surplus Water Provisions		Turnout Construction by Agency	Peaking Service		Annual Entitlements Revised	Excess Capacity Purchased	Article 28 Revised	Repayment Period and Contract Term Revised	Special Conditions	Contract Issues Resolved (a)	
		1970	1971	1972 until Construction		Added	Revised	Moratorium Declared				Added	Revised		Increased	Decreased							
		Through 1969	1970	1971				Deleted															
FEATHER RIVER AREA																							
City of Yuba City	1	2	2	2	2	1							1				1,4	NA	3	5			
County of Butte	1	3	3	3	3	1	2		4	5			1				6,8	NA	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							1				8,9 10		7	1,2	11		
Solano County Flood Control and Water Conservation District	1	2	3P	3P	2	1							1,5	1			6		6	6	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	13	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		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
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		
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
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
Palmdale Water District	2	3	4	5	3	1	2						6	1	2,8			2		7	9		10
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 Geronimo 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
Ventura County Flood Control District	1	2	3	4	2	1							5		1,7					6	8		9

NA = Not Applicable 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) MWD special conditions are covered by Amendment Nos. 2, 3, 4, 5, 7, 8V, and 12.

Also in the amendment, the District agreed to implement (not later than the date of initial SWP deliveries) a plan designed to meet certain water conservation goals. The State will provide financial assistance to cover the costs of the plan and the District will repay the State over a 20-year period.

- o Mojave Water Agency amended its Table A to reduce its 1982 entitlement from 25,969 to 22,843 acre-feet. This reduction was necessary to complete a ground water demonstration program initiated in 1978 (see "Ground Water Demonstration Programs," later in this chapter).

Contract Issues

In 1982, DWR began negotiations to sell to Kern County Water Agency (KCWA) the 17 cfs of aqueduct capacity relinquished by Santa Barbara County Flood Control and Water Conservation District (SBCFC&WCD). KCWA rejected DWR's initial proposal in March 1983. By means of Water Service Contractors Council Memo No. 1614, DWR asked if any contractor(s) would be willing to repay all prior and future costs allocated to that capacity in all affected aqueduct reaches if the water entitlement associated with the capacity (12,214 acre-feet) were included in the sale. Seven contractors affirmed their interest in the purchase (Coachella Valley Water District, Desert Water Agency, Dudley Ridge Water District, Empire West Side Irrigation District, Kern County Water Agency, Oak Flat Water District, and Tulare Lake Basin Water Storage District). DWR is considering options for allocating the relinquished capacity and water. Under the proposed terms of sale, the buyers would reimburse SBCFC&WCD for prior costs and assume all future costs associated with the increment being purchased.

In addition, the following contract issues were discussed with contractor representatives at several meetings

during the report period and are yet to be resolved:

- o Off-Aqueduct Power Facilities Costs. Under the recently signed amendment to the water supply contract (Bulletin 132-83, page 92), all costs of Off-Aqueduct power facilities are included in the minimum component of the Transportation Charge and allocated among contractors in proportion to the energy used to pump each contractor's entitlement water. Reductions in entitlement deliveries by one or more contractors can result in substantial shifts of cost to other contractors. The State Water Contractors' Contract Issue Committee has formed a subcommittee to investigate alternative methods of allocating the costs of Off-Aqueduct power facilities.
- o Energy Rates for Surplus Water. Since termination of the long-term power supply contracts on March 31, 1983, the variable energy charge for surplus water is either (1) the value of revenue foregone when excess SWP energy is used for pumping surplus water, or (2) the price of energy purchased for pumping surplus water. Contractors have been discussing among themselves several alternative methods of pricing energy for delivery of surplus water. DWR will consider any alternative method that is acceptable to all contractors.
- o Hoover Dam Energy for Pumping MWDSC Entitlement Water. This issue involves the proposed use of a portion of MWDSC's entitlement to energy from Hoover Dam to pump a portion of its SWP entitlement water (after June 1, 1987).
- o Kern River Intertie Benefits. This contract issue concerns the procedure for allocating the power savings resulting from operation of the Kern River Intertie.

- o Proposed Water Revenue Bond Contract Amendment. DWR has developed a proposed contract amendment that would revise the way in which contractors would repay the construction costs of future facilities. The draft amendment sets forth provisions for a separate "Conservation Facility Charge" and a separate "Transportation Revenue Bond Charge", in lieu of integrating future facilities financing into the Project Interest Rate and corresponding facilities charges.

1978 Exchange Agreement

During 1978, DWR acquired 30,000 acre-feet of SWP water from MWDSC through an exchange agreement. Under the agreement, MWDSC pumped additional Colorado River water in January 1978 in lieu of taking delivery of SWP water. The exchange water was intended for use in meeting 1978 emergency needs in case the 1976-77 drought continued. DWR had arranged to obtain up to 200,000 acre-feet for such purposes.

However, the substantial change in weather conditions in California beginning in early 1978 ended the need to acquire further exchange water when it became apparent that the drought was over. Under an agreement with DWR and MWDSC, Kern County Water Agency purchased 25,000 acre-feet. Under a similar agreement, Dudley Ridge Water District purchased the remaining 5,000 acre-feet. As of December 31, 1983, only 557 acre-feet of the 1978 exchange water had been delivered -- all to Kern County Water Agency during 1982.

The original agreements required use of the 1978 exchange water prior to March 31, 1983. These agreements were amended in 1982 to extend the delivery deadline to December 31, 1984 or another mutually agreeable date. At the purchasers' request, DWR has reached agreement with MWDSC to extend the delivery deadline to December 31, 1985 and has transmitted an amendment to the affected contractors for signature.

1982 Exchange Agreement

In 1982, San Luis Reservoir was only partially in service because of repairs to San Luis Dam. To help mitigate anticipated impacts on CVP and SWP water deliveries, the USBR and DWR entered into an exchange agreement with MWDSC. This agreement, described in Bulletin 132-82 (pages 59-60), provided that MWDSC would increase its deliveries from the Colorado River by as much as 250,000 acre-feet during the 1982 irrigation season. This would make additional water available for sale to CVP and SWP contractors. Subsequent to the exchange agreement, it became apparent that the year was going to be very wet, and the exchange was limited to 120,000 acre-feet; half of the exchange water went to the CVP and half to participating SWP contractors. (See Bulletin 132-83, pages 86-87.)

SWP Portion of 1982 Exchange

Of the 60,000 acre-feet of 1982 exchange water designated for SWP use, 306 acre-feet were delivered in 1982 to Oak Flat Water District, and the remaining 59,694 acre-feet are being stored for the three participating San Joaquin Valley contractors, either by MWDSC in its ground water basins or by DWR at Lake Oroville under agreements executed in November 1982. The amounts stored, by contractor and storage location, are as follows (note corrections from Bulletin 132-83 data):

	(acre-feet)		
	<u>MWDSC</u> <u>Basins</u>	<u>Lake</u> <u>Oroville</u>	<u>Total</u>
Devil's Den W.D.	126	559	685
Dudley Ridge W.D.	1,301	1,821	3,122
KCWA	<u>9,494</u>	<u>46,393</u>	<u>55,887</u>
Totals	10,921	48,773	59,694

Upon request, DWR will deliver 1982 exchange water stored by MWDC to the participating contractors while reducing MWDC's entitlement deliveries from the Delta by a like amount (MWDC will draw this portion of its entitlement from ground water). Water stored at Lake Oroville will also be available on request, provided Lake Oroville has not filled to the extent that releases have been made beyond those required for fish mitigation and power generation. If storage limitations require release of 1982 exchange water prior to delivery, such water will be returned to storage at the first opportunity. Return of this water to storage will have a priority second only to storage for SWP operation to meet future entitlements.

The storage agreements further specify that the 1982 exchange water stored by MWDC shall be delivered prior to December 31, 1984 or another mutually agreeable date, and that the 1982 exchange water stored in Lake Oroville shall be delivered by December 31, 1985. At the request of Kern County Water Agency and Dudley Ridge Water District, DWR is working with MWDC to extend the delivery deadline of water stored by MWDC to December 31, 1985.

CVP Portion of 1982 Exchange

Under the 1982 exchange agreement, part of the cost of the exchange water furnished to the CVP was to be paid in energy, delivered to the SWP on or after April 1, 1983. This energy was to be used to pump 200,000 acre-feet of water that the USBR owed the SWP under other agreements.

On August 1, 1983, the USBR began to return water and energy to the SWP pursuant to the terms of the agreement. 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 did not continue the return after August 20, 1983.

DWR and the USBR have agreed on a procedure for extending the time for USBR repayment of the approximate \$2.4 million balance owed. DWR has transmitted a letter agreement to the USBR for execution. Generally, repayment of the 200,000 acre-feet of water and associated energy will be scheduled at times when the energy is worth at least 28 mills per kWh to DWR. Both DWR and the USBR recognize this agreed-upon procedure may result in the repayment schedule extending beyond 1984.

Ground Water Demonstration Programs

As described in Bulletin 132-83 (page 87), a ground water demonstration program for Mojave Water Agency was completed in 1982. Amendment No. 12 was prepared in March 1984 to reduce the Agency's 1982 Table A entitlement by 3,126 acre-feet to eliminate underpayments of the transportation variable OMP&R component charges (as shown in its 1984 Statement of Charges), which resulted from adjustments during the period the ground water demonstration program was in effect.

A second ground water demonstration program was established in 1978 under agreements between DWR and the San Bernardino Valley Municipal Water District (see Bulletin 132-79, page 90). Total water stored as of January 1, 1984 under the program was 18,749 acre-feet, including 681 acre-feet added to the basin in January 1983. There are no plans at the present time to withdraw this water; it will remain available as supplemental SWP yield in the event of a future water shortage. All DWR costs and District incremental costs incurred in connection with the storage of this water, including the SWP power costs incurred in transporting the water from the Delta to Reach 26A and the Delta Water Charge on each acre-foot stored, have been assigned as SWP conservation costs.

Davis-Grunsky Act Program

The Davis-Grunsky Act was authorized in 1960 as part of the Burns-Porter Act. Under this legislation the State provides loans and grants to assist local agencies in overcoming and avoiding public health problems in their water supplies, to develop agricultural water conservation projects, and to encourage development of public recreation and fish and wildlife enhancement. Financial assistance covers construction costs, feasibility reports, and rehabilitation of dams and reservoirs. The State may also participate with an applicant as a partner under certain circumstances.

An eligible local agency is defined as any city, county, district, or other political subdivision of the State. Mutual water companies or other private organizations and individuals are not eligible. Eligibility is also based on conformance with the California Water Plan, statewide interest, and inability to finance from other sources.

Of the original \$1.75 billion funded for construction of the State Water Resources Development System, \$130 million was reserved specifically for State assistance under the Davis-Grunsky Act. Funding is drawn from the California Water Resources Development Fund and the California Water Fund. Repayment of loans is made to the California Water Resources Development Fund.

Administration of the Act is handled 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:

- o grants for part of the construction cost of any dam and reservoir properly allocated to recreation;
- o grants for part of the construction cost of a project properly allocated to the enhancement of fish and wildlife;
- o grants for the construction of initial water supply and sanitary facilities that are needed for public recreational use of each dam and reservoir;
- o loans for local water projects;
- o loans for reservoir sites for proposed water projects;
- o loans for feasibility reports on proposed projects for which construction loans are requested;
- o State participation as a partner in a project larger than the one the local agency proposes to construct on its own.

DWR, with prior approval from the California Water Commission, (1) may make grants of up to, but not to exceed, 50 percent of the construction costs for recreation grants, (2) may lend up to \$4,000,000 for construction for domestic water supply, and (3) may lend up to \$50,000 for the preparation of feasibility reports. Larger loans must be specifically authorized by the Legislature.

At the onset of the program, 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 remaining 40-year period.

As of December 31, 1983, DWR and the California Water Commission had

approved loans and grants for 109 local agencies for a total of \$113.8 million dollars. Of the total approved applications, \$48 million (42 percent) has been allocated for loans and \$65 million (58 percent) for grants. At the present time DWR is not accepting applications, pending action on applications yet to be approved.

Project Purpose Cost Allocations

Appendix D to Bulletin 132-83, submitted to the Legislature early in 1984, 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 1982. Copies of Appendix D to Bulletin 132-83 are available from DWR on request.

In 1979, the Department of Finance issued a staff report on 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 the magnitude of SWP costs allocated to recreation and fish and wildlife enhancement.

DWR reviewed the Department of Finance report and, on March 20, 1981, responded by memorandum that the recommendations are not in conformance with SWP water supply contracts and the intent of the Davis-Dolwig Act. Discussions with the Department of Finance are continuing, and DWR hopes to resolve this issue by the end of 1984.

Two-Agency Fish Agreement

In 1983, DWR and the Department of Fish and Game concentrated their efforts toward developing an agreement to provide for fisheries mitigation for the addition of four pumping units at the Banks Delta Pumping Plant. The mitigation actions being developed are intended to minimize the impact of future operation of the expanded plant. Nego-

tiations are continuing toward finalizing this agreement and having it signed by both Departments in 1984.

CVP-SWP Coordinated Operation Agreement

On December 22, 1982, the negotiating team leaders for DWR and the USBR signed a memorandum forwarding the December 20, 1982 agreement to the Directors of each agency, recommending that the agreement be executed and implemented (Bulletin 132-83, pages 47-48). It was originally intended that Congressional authorization of the agreement be obtained during the 1984 session, but the USBR has requested a reopening of negotiations to consider certain changes in the agreement; these changes would not affect the sharing formulas. The reopened negotiations will be open to the public, as were earlier negotiations.

Meanwhile, work continues on a technical report documenting the process used in developing the sharing formulas, the operation studies, and the assumptions made during negotiations. A draft of the technical report is being reviewed within each agency.

During August 1983, meetings were held in Stockton, Bakersfield, Redding, and Concord to solicit public input and to assist the agencies in deciding whether an EIS-EIR or an Environmental Assessment would be more appropriate. The decision was made to proceed with the full EIS-EIR and an internal review draft has been completed. A public draft will be released as soon as possible following completion of negotiations and environmental evaluation of any changes in the agreement.

Governor's Executive Order B-68-80

In July 1980, Governor Brown issued Executive Order B-68-80 directing DWR to prepare a plan of water conservation, reclamation, and management for

the SWP. DWR complied with the Executive Order by preparing individual draft plans for each SWP contractor, recommending specific measures that can be undertaken by both the contractor and DWR. The final drafts were submitted to the contractors for their use in developing or modifying their own management plans. Copies of these draft plans were also submitted to SWRCB. All plans were completed by January 1984. The plans are being used by various contractors and subcontractors to help develop water conservation plans required by Clean Water Grants, water rights permits, and the Urban Water Management Act.

Executive Order B-68-80 also directed DWR to implement a program to desalt agricultural drainage and other brackish water, with a year 2000 goal of 400,000 acre-feet of additional supplies for the SWP. The first step in this program is the demonstration desalting project described in Chapter V.

Water Rights Management

The SWP currently operates in the Delta under conditions set forth in Decision 1485, issued by SWRCB in August 1978, and intended to remain in effect until SWRCB issues new standards in 1988. This decision resulted in coordination of terms for SWP and CVP water rights permits and establishment of water quality standards for the Delta. These standards have been set to insure protection of vested water rights. 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 Delta's ecology. The program has also provided information that will help determine future operating criteria to protect the Bay-Delta waters when SWRCB reopens hearings in 1986.

Delta Water Quality Monitoring and Reporting

In 1983, DWR sampled an average of 32 water quality parameters at each of 28 sites throughout the Delta estuary on a monthly basis. This reduced sampling frequency was in compliance with Decision 1485, which allows for less frequent sampling during periods of high outflow. Continuous water quality profiles of the main channels were also recorded monthly with automated instrumentation aboard DWR's laboratory workboat, the San Carlos. Special studies conducted by DWR during 1983 included a continuing series of sampling runs to measure food web relationships in the shoal areas of San Pablo Bay.

Efforts continue to determine the causes for erratic algal production in the central Delta. Additional information collected during supplemental 1983 monitoring runs is being integrated with the routine monitoring data for further evaluation.

Decision 1485 also requires supplemental studies of the freshwater outflow needs of the San Francisco Bay ecosystem. 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 program is a cooperative effort with the Department of Fish and Game, the lead agency for these studies.

The network of six continuous, multi-parameter recorders, located on-shore at strategic locations throughout the Delta, is complete. This network is another requirement in Decision 1485. Final software changes for on-site computerized equipment are being made, and a storage and retrieval program for the processed water quality information is being developed. Three sites (Antioch, Mallard Slough, and Rio Vista) will have telemetry capabilities.

Water quality information is stored in DWR's Water Data Information System. Data for 1983 were retrieved and transmitted to SWRCB with DWR's analysis. Copies of 1975 through 1982 data tabulations are still available. DWR is cooperating with SWRCB in evaluating existing State and Federal data systems to adopt 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

To help mitigate the impacts of the SWP, the Suisun Marsh Initial Facilities (consisting of dredging and making improvements on Roaring River Slough, Morrow Island Ditch, and Goodyear Slough Outfall Structure) were completed by DWR in October 1981. The first phase of a fish screen at Roaring River Slough was completed in January 1981. The second phase of the fish screen was completed in November 1983.

A monitoring program that is a component of the Suisun Marsh Plan of Protection is being implemented. The monitoring equipment is now in place. The first report on water quality was prepared in March 1983.

Contract negotiations have continued between the Suisun Resource Conservation District, the Department of Fish and Game, and DWR. It is expected that a contract will be signed in 1984. The USBR has participated in recent contract negotiations.

DWR has continued to work with the Suisun Marsh Technical Committee of the Interagency Ecological Study Program for the Sacramento-San Joaquin Estuary in developing a coordinated plan to protect and restore wildlife habitat in the Suisun Marsh.

A computer model of the Suisun Marsh has been used to analyze alternative plans and test the effectiveness of

proposed facilities. Information from the model on channel sizes and the volumes of water to be moved will be used in designing the facilities. The model has also been used to determine the effects on the Marsh of reduced flows and increased salinities in dry and critical years.

The concept of staged construction has been incorporated into the Plan of Protection to help ensure that the Plan, as implemented, will be effective and appropriate. The EIR was rewritten as a program EIR to incorporate this. The Plan of Protection and Program EIR were completed in February 1984 and the Notice of Determination was signed in April 1984.

In July 1982, DWR advised SWRCB that it would not be able to complete the Overall Facilities by the October 1984 deadline in Decision 1485, but would move as rapidly as possible to meet its obligations. Initiation of construction is scheduled for the summer of 1984, with construction of a portion of an access road to the Montezuma Slough Control Structure.

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 above-average water supplies during the 1983 water

year as defined in the contract. During the 1983 water year, 215 days of credits were accumulated for CCWD and 157 days for the City of Antioch. These additions brought the total June 30, 1983 credits for the CCWD and the City of Antioch to 319 and 322 days, respectively.

Western Delta Industrial Water Users

Near Antioch and Pittsburg, several industries 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 a contract 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 expected to resume shortly.

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 obligations.

Beginning in 1974, six agencies representing agricultural water interests in the Delta succeeded to the overall

interest of 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 Central Delta Water Agency (CDWA), Contra Costa County Water Agency, and Byron-Bethany Irrigation District have been inactive for several years. In January 1984, CDWA indicated an interest in reopening negotiations.

The sixth Delta agency is the South Delta Water Agency (SDWA). 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 underway. If negotiations were not successful by January 1, 1980, 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 SWRCB for failing to include southern Delta standards in Decision 1485.

Following a March 1982 workshop, SWRCB informed SDWA that it must petition SWRCB if it wishes any action on the adoption of standards. SDWA responded by criticizing this position, restating its position that 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. (See discussion of Litigation later in this chapter.)

San Joaquin Valley Drainage Program

DWR is continuing monitoring of San Joaquin Valley agricultural waste waters, with emphasis on areas with the highest potential drainage problems. These are the areas to be studied for

siting of desalting plants or for marsh development. Several concepts for reuse of agricultural waste water are being pursued, including desalting, developing marshes, and irrigating of salt-tolerant crops. Several local agencies or individual ranches have constructed evaporation ponds to solve drainage problems, in addition to reusing agricultural waste water. DWR is not actively pursuing construction of drainage disposal facilities in the San Joaquin Valley, since local agencies have not expressed a desire to participate in repayment of costs for facilities.

The CVP's San Luis Unit will have to be reauthorized to permit completion of the San Luis Drain. The USBR is conducting a study to supplement the EIS for the completion project. The USBR has asked SWRCB to establish discharge requirements for the San Luis Drain, discharging at Chipps Island. Additional studies are being conducted by the USBR to meet the needs of SWRCB. The information from these studies will be essential in establishing appropriate waste discharge requirements.

Administration Water Legislation Package

On April 5, 1984, Governor Deukmejian introduced specific legislation proposals related to water resources. The principal elements of the proposed legislation package are:

- o A water facility bill that (1) requires construction of specified water transfer facilities in the Delta, including fish and wildlife mitigation measures, (2) authorizes construction of off-stream storage facilities south of the Delta, ground water storage facilities, south Delta protection facilities, and interconnections to other water supply systems such as the Contra Costa Canal, (3) permits use of SWP facilities to deliver CVP water for the Mid-Valley Canal service area, (4) provides protections for the

Suisun Marsh and San Francisco Bay, and (5) requires that the SWP and CVP be operated in coordination (SB 1369 - Ayala).

- o A bill to authorize an expanded subventions program for Delta levee construction and maintenance (SB 2196 - Boatwright).
- o A bill to authorize DWR to establish and administer a loan program for local water agencies to construct ground water recharge facilities (AB 3626 - Areias).
- o A bill to allocate a portion of SWP costs to mitigation of the effects of upstream diversions by other than State and Federal projects on the Delta, Suisun Marsh, and San Francisco Bay (AB 3542 - Katz).
- o A bill to require DWR to conduct investigations in the Sacramento Valley related to inventory of local water supplies and needs, flood control, water quality, seepage, and erosion control (AB 3758 - Herger).
- o A bill to appropriate Tideland Oil revenues from the California Water Fund for the preceding four items and other purposes as follows (AB 3907 - Costa):

<u>Millions</u>	<u>Purpose</u>
\$10.0	Delta levees
7.0	Ground water recharge program
3.0	Mitigation for historic upstream diversions
1.3	Sacramento Valley planning
2.6	Los Banos Desalter operations and drainage studies
0.5	Aquisition of riparian vegetation sites
0.6	Miscellaneous investigations
<u>\$25.0</u>	

- o A bill to authorize general obligation bonds, primarily to fund existing subventions programs under which the State pays a portion of the costs of Corps of Engineers flood control projects (SB 1648 - Nielson).
- o A bill to clarify DWR's flood fighting authority (SB 2145 - Doolittle).

A related bill would reallocate \$5 million per year of Tideland Oil revenues to restore fishery resources reduced by water projects (SB 1500 - Keene). A related constitutional amendment would require a two-thirds vote of the Legislature to amend the area of origin statutes or the Delta Protection Act (SCA 16 - Johnson). SCA 16, SB 1500, and six of the eight Administration bills (all except SB 1648 and SB 2145) are joined so that none has any force or effect unless all are enacted and SCA 16 is approved by the voters. As this report went to printing, action on this program was pending in the Legislature.

State Water Contractors Corporation

The State Water Contractors Corporation (SWC), formed in November 1982, is made up of 25 of the 30 agencies that have long-term contracts for purchase of SWP water. The 25 agencies represent approximately 98 percent of the ultimate 4.2 million-acre-foot contractual obligation of the SWP. The SWC maintains offices in the Senator Hotel Office Building in Sacramento.

In 1983, the SWC continued to expand its working relationship with DWR and the other public and private agencies that affect or are associated with the SWP. The principal items the SWC concentrated on during the year are:

- o selection of a Delta transfer facility;
- o Suisun Marsh negotiations;
- o the CVP-SWP Coordinated Operation Agreement;

- o the Arroyo Pasajero asbestos/sediment problem;
- o future financing of SWP facilities.

The SWC is continuing to work on these items in 1984, with the primary goal of helping select the Delta transfer facility that best meets the needs of the SWP and its contractors.

Litigation

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

Control Over SWP Operations

Tulare Lake Basin Water Storage District v. State of California, filed October 19, 1976, Sacramento County Superior Court No. 263582. The decision in the case, in favor of DWR on all counts, was entered on September 25, 1981. The court held that DWR did not breach its water supply contracts by releasing stored water to control salinity levels in the Delta.

The court also held that contracts between DWR and the Delta water agencies are not a precondition to the delivery of water in excess of Delta vested rights if it is in the public interest to provide such water. The court further concluded that DWR did not violate an injunction staying operation of Decision 1379 because it was authorized to operate voluntarily to the most recent and comprehensive water quality standards.

The plaintiffs and intervenors have appealed and briefing has been completed. Oral argument, scheduled for September 20, 1983, was taken off calendar pending settlement discussions.

Salyer Land Company v. Department of Water Resources, filed May 9, 1977, Sacramento County Superior Court No. 267012, involves similar issues to those in the Tulare Lake case. No

action is occurring in this case pending resolution of the Tulare Lake case.

Department of Water Resources v. Contra Costa County Water Agency, et al., filed June 22, 1979, Sacramento County Superior Court No. 282495. 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 on 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. DWR's motion to sever and try separately the declaratory relief action and the actions in the cross-complaint was granted. Discovery is proceeding. On January 14, 1983, DWR moved for a Motion for Summary Adjudication of Issues. A hearing on the motion will be held in 1984.

Delta Water Cases

United States of America v. State Water Resources Control Board, filed November 13, 1978, San Francisco Superior Court No. 759586. This and seven other cases have been brought to challenge the merits of SWRCB Decision 1485 establishing conditions of water rights

permits of the SWP and CVP and 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 fourteen 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.

After briefs and oral argument, the trial court issued its Statement of Decision on numerous legal issues on April 13, 1984. The Court ruled 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 Court requested that the proceedings be remanded to SWRCB, that SWRCB set aside Decision 1485 and the plan, and that SWRCB reconsider its action in light of the various rulings in the Statement of Decision. There are numerous important rulings in the Statement of Decision. The rulings that are of particular importance to DWR are:

- o The Delta Protection Act and the Watershed of Origin statutes do not give Delta water users a perfected right to enhancement water; they must contract with the project operator to pay for enhancement water.
- o The Delta water users can only be required to pay for enhancement water that is released specifically for them; they cannot be required to pay for enhancement water they receive that was released for another purpose, such as fish and wildlife.

- o In the absence of contracts providing for payment to the project(s), SWRCB is not required to set standards providing Delta users with water under the Watershed of Origin statutes or the Delta Protection Act.
- o The Contra Costa Canal standard is invalid as it gives canal municipal users more water than they have a right to and impairs the rights of the project operators.
- o In establishing water quality standards to protect fish and wildlife in the Delta, SWRCB must respect the relative seniority of the CVP and SWP appropriative water rights and allocate responsibility accordingly. SWRCB correctly ignored the projects' relative priorities in setting consumptive use standards because the project operators had agreed between themselves to allocate available supplies for that purpose (May 16, 1960 Agreement).
- o SWRCB cannot hold the projects jointly and severally liable for meeting water quality standards or conducting monitoring.
- o SWRCB must use a "natural flow" (not a "without project") analysis to determine the extent of Delta riparian rights. If this requires bringing in all upstream riparians and adjudicating the Sacramento River Basin, SWRCB probably has the authority to do so.
- o SWRCB must set standards to protect the industries' existing water rights at Antioch. DWR's offer to pay increased costs was not a sufficient guarantee of the substitute supply provided for by the Delta Protection Act; a contract is necessary.
- o The conditions in Decision 1485 and the plan are not inconsistent with Congressional directives regarding the CVP.

On June 15, 1984, DWR filed its Notice of Appeal of a portion of the decision.

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 USBR and DWR. It involves the effects of the operation of the CVP and the SWP on the southern Delta. As to DWR and the SWP, SDWA alleges that operation of the SWP pumps violates southern Delta rights by lowering water levels, reversing flows, and diminishing the influence of the tides. The suit seeks a declaration that (1) the CVP and the SWP must be operated in a manner that will neither diminish the quantity nor degrade the quality of the inchannel water of the southern Delta below that which would exist in the absence of the two projects, and (2) the United States and the State may not appropriate or divert water from the Delta or any Delta tributary that is needed for the reasonable uses of the southern Delta. The suit also seeks preliminary and permanent injunctions along the same lines and seeks further relief against the USBR.

The judge in the case denied a federal motion to dismiss on jurisdictional grounds. The Ninth Circuit Court has agreed to hear the federal government's appeal of the denial of its motion.

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 \$30,000,000, 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 condem-

nation, negligence, and trespassing. The claim arises from damages allegedly caused by high flows in the Sacramento River in 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 claims against the United States. Plaintiffs are now preparing to pursue the claims against the State in the California courts.

Kern River Intertie

River West Inc. v. State of California, et al., filed August 5, 1980 in San Francisco and later transferred to 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 rights of the plaintiffs to water of the Kern River. Plaintiffs contend, as to DWR, that water other than flood water and water subject to appropriation are being accepted into the Intertie contrary to the Intertie's flood control purpose.

As to the upstream landowners, the plaintiffs contend they are diverting water to which plaintiffs have rights and that some of these defendants have made improper transfers of water. On December 29, 1982, a related case, 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 each of the other defendants have filed answers to the plaintiff's complaint and discovery is in progress. The plaintiffs and some of the defendants are attempting to have a judge assigned to the cases to hear various pending motions. In the River West case, the assigned judge is allowing plaintiffs to amend their complaints.

Wild and Scenic River Cases

In July 1980, Governor Brown requested that then United States Secretary of the Interior, Cecil Andrus, add approximately 4,000 miles of rivers in the California Wild and Scenic Rivers System to the National Wild and Scenic River System. The Governor took this action under the authority of the National Wild and Scenic Rivers Act (16 U.S.C. 1271, et seq.), which permits the Governor of any state to apply to the Secretary of the Interior for national designation of State designated rivers. On January 19, 1981, Secretary Andrus acted on California's application by adding approximately 1,235 miles of California rivers to the National System.

After Secretary Andrus' decision, three lawsuits were filed in federal court. County of Del Norte v. United States, filed February 2, 1981, Federal District Court for the Northern District of California No. C-81-0467WAI, was brought by two Northern California counties and Northern California timber interests. The lawsuit claims that the Final EIS on inclusion of the California rivers in the National Wild and Scenic Rivers System was prepared in violation of regulations of the Council on Environmental Quality (CEQ). The plaintiffs seek a declaration that California's application violated federal law.

In County of Josephine v. Watt, filed January 28, 1981, Federal District Court for Oregon No. 81085,

the southern tier of Oregon Counties and timber interests seek a declaration that Secretary Andrus' decision was illegal and seek an injunction to overturn his action. On July 29, 1981, this case was transferred to Northern California Federal District Court, where the other Wild and Scenic Rivers cases are pending.

On April 7, 1981, the Association of California Water Agencies (ACWA) and ten SWP water contractors filed ACWA v. United States, Federal District Court for the Northern District of California No. C-81-1457. This suit claims that inclusion of the rivers in the national system jeopardizes the plaintiffs' maximum annual entitlements from the SWP. It claims California's application for national status for the rivers was defective and also claims violations of the National Environmental Policy Act and rules promulgated by the CEQ. Like the other federal lawsuits, it seeks a declaration and an injunction against implementation of Secretary Andrus' decision.

The State was originally not a party to any of these lawsuits. However, the State and four environmental groups (the Environmental Defense Fund, the Sierra Club, California Trout, and Save the American River Association) have intervened in each of the suits.

In the case brought by the Oregon plaintiffs, the court ruled in favor of the State and the United States on every point except the adequacy of the EIS. The court ordered a trial to be held on this issue. In the two suits brought by the California plaintiffs, judgment was granted for the plaintiffs on the issues of failure to comply with the CEQ guidelines and inability to prove "permanent administration" of the rivers under federal law. The case was appealed to the Ninth Circuit Court. The State remained neutral on appeal. On May 11, 1984, the Ninth Circuit Court reversed the District Court, holding that the Secretary of the

Interior's actions in designating the rivers were legally valid. Any failure to comply with CEQ regulations must be regarded as trivial and did not justify invalidating the Secretary's designation. The decision did not involve the issues about adequacy of the EIS; these must be resolved at a trial.

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 of 1975, LADWP withheld approximately \$69,000 from the Peaking Capacity Foregone payment owed to DWR. In subsequent years, LADWP has withheld larger amounts from the Peaking Capacity Foregone payment. 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.

On May 27, 1982, the parties agreed upon a process for settlement of the litigation. This process involves amendment of the Castaic contract in accordance with principles already agreed upon and payment by LADWP of a specified amount of money to DWR. On May 16, 1983, DWR signed the required amendments and sent them for execution by LADWP. In the meantime discovery has been suspended.

Southern California Edison Company (SCE) v. Los Angeles City 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 ex-

cused 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 as of October 21, 1979, it would terminate service. 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. Pacific Gas and Electric Company v. Los Angeles City Department of Water and Power, filed October 12, 1979, San Francisco Superior Court No. 759086, deals with the same issues. A hearing on PGandE's application for a temporary restraining order against LADWP has been indefinitely postponed by PGandE pending the outcome of the SCE case.

On November 7, 1979, a preliminary injunction was issued requiring LADWP to continue to supply power under the Suppliers Contract. LADWP continued to supply power to DWR until the termination of the Suppliers Contract in 1983. The case is in the discovery stage, and the parties are attempting to reach agreement on a Statement of Stipulated Facts.

State of California v. Oroville Wyandotte 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 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 filed a notice of appeal on January 27, 1984.

Oroville Wyandotte Irrigation District v. State of California, Department of Water Resources, filed January 4, 1982, Sacramento County Superior Court No. 301927. OWID, owner of the Palermo Canal, has filed suit against DWR alleging that construction of the Palermo Powerplant by DWR would violate a 1963 agreement between DWR and OWID. The Palermo Powerplant would be a 500-kW hydroelectric facility at the tunnel outlet to Palermo Canal on the left abutment of Oroville Dam. OWID claims in its suit that a trust should be imposed on the proceeds of the powerplant for the benefit of the District. OWID also seeks an order preventing DWR from proceeding with construction of the plant until obtaining permission from the California Public Utilities Commission and authorization from SWRCB to use the water for hydropower generation. Finally, OWID seeks to rescind the agreement for substitute water service, alleging misrepresentation.

Final judgment in favor of DWR was entered on October 20, 1983. OWID has not appealed the judgment. However, DWR has reevaluated the economic feasibility of the Palermo Powerplant and decided not to build it.

CHAPTER IV

DESIGN, RIGHT OF WAY, AND CONSTRUCTION ACTIVITIES, JULY 1, 1983 - JUNE 30, 1984

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

Design Activity

Between July 1983 and June 1984, DWR continued design work on Bottle Rock and South Geysers Powerplants, Thermalito Diversion Dam Powerplant, Suisun Marsh Facilities, North Bay Aqueduct, Banks Delta Pumping Plant, and Alamo Powerplant. Design work also included modifications to certain existing SWP facilities. Other noteworthy design activities included:

State Water Project-General

- o Emergency contracts were prepared to repair landslides that occurred along the California Aqueduct (North San Joaquin Division) and the South Bay Aqueduct.

Energy Supply

- o Work initiated on Isabella Powerplant was terminated.

Upper Feather River Division

- o Seismic re-evaluations of Frenchman Dam and Antelope Dam were conducted.

Oroville Division

- o Seismic re-evaluations of Thermalito Forebay Dam and Thermalito Afterbay Dam were made.

South Bay Aqueduct

- o Design of a seepage measuring facility at Del Valle Dam was completed.

- o Seismic re-evaluations of Del Valle Dam and Patterson Dam were conducted.

North San Joaquin Division

- o Designs were developed for remedial measures to repair and prevent erosion of Clifton Court Forebay Dam.

San Luis Division

- o The USBR analysis, design, and construction of stability berms for San Luis Dam, and the USBR reanalysis of seismic stability of San Luis Dam were reviewed.
- o Studies were conducted of adding or modifying units to provide spinning reserve capability at San Luis Pumping-Generating Plant.

South San Joaquin Division

- o Designs were developed for bridge hinge restrainers for bridges crossing SWP waterways.

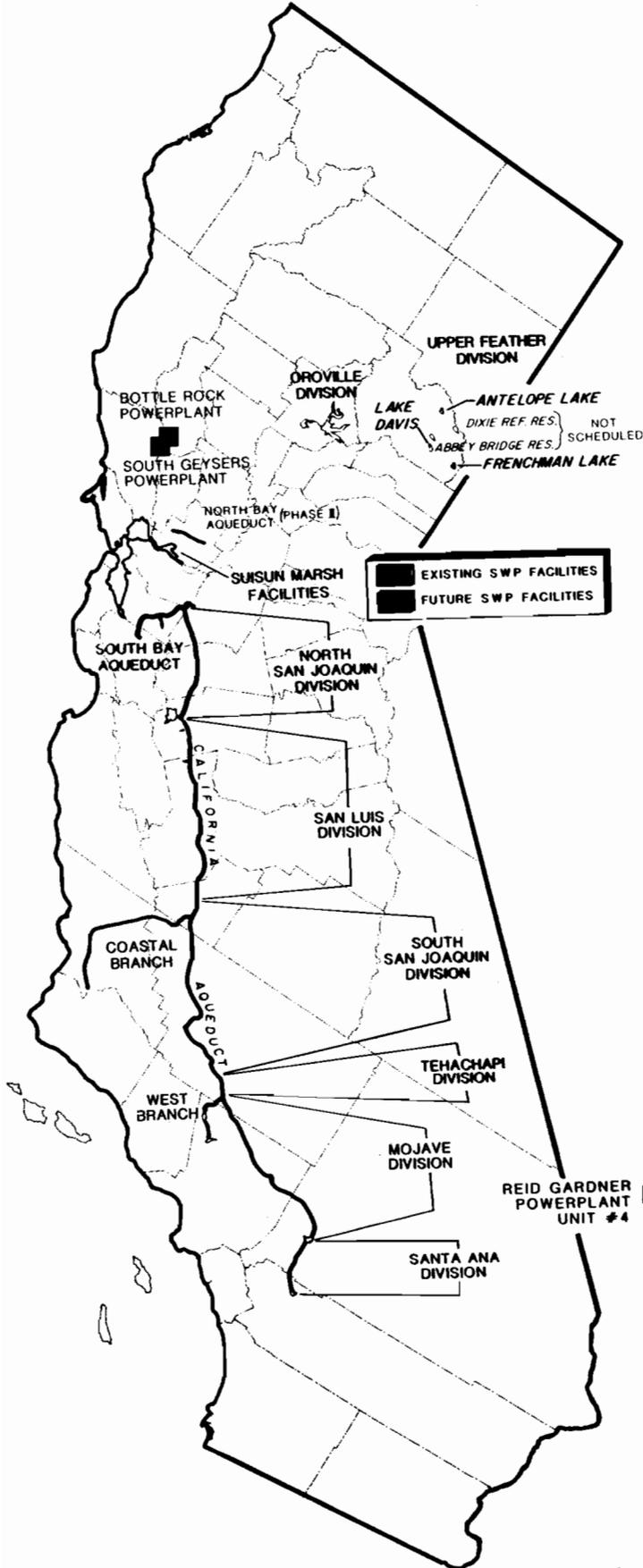
Santa Ana Division

- o Studies were conducted of adding or modifying units to provide spinning reserve capability at Devil Canyon Powerplant.

West Branch

- o Seismic re-evaluation of Castaic Dam was performed.
- o Designs for repair of the break on Lower Quail Canal were prepared.
- o Design of Phase III of the Pyramid Lake Recreation Facility was completed.

FIGURE 8: SWP CONSTRUCTION DIVISIONS



The principal SWP design activities during the report period are summarized in Table 12, "SWP Design Activities in Progress".

Land and Right of Way Activity

DWR's 1983-84 program included the following land and right of way actions:

Energy Supply

- o A transmission line right of way is to be acquired for South Geysers Powerplant. Mitigation lands are also being acquired for South Geysers Powerplant.
- o At Bottle Rock Powerplant, negotiations for right of way for the radio repeater and access road will soon commence. Acquisition of right of way on Bottle Rock Road Phase II is nearing completion and Phase III is being negotiated.

Upper Feather River Division

- o The Lake Davis/Plumas Eureka Land Exchange between DWR and the U.S. Forest Service will be completed when the Department of Parks and Recreation arranges funding of a purchase survey.

Oroville Division

- o Acquisition of two parcels for access to Thermalito Diversion Dam Powerplant was initiated.

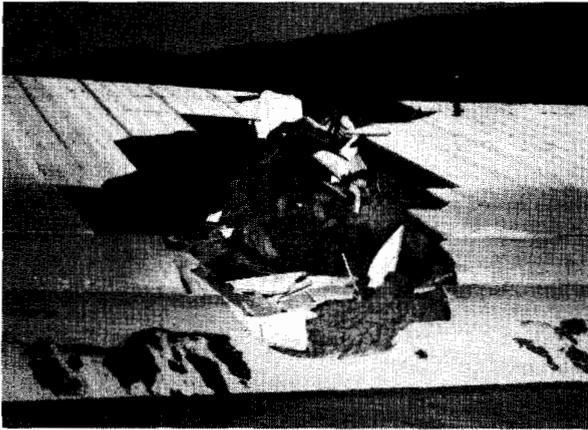
North Bay Aqueduct

- o Entry permits and right of way for Phase II of the North Bay Aqueduct are being acquired. DWR is coordinating plans with CALTRANS for the Abernathy Road interchange and truck weighing-station expansion.

TABLE 12: SWP DESIGN ACTIVITIES IN PROGRESS, JULY 1983 - JUNE 1984

Division or Facility	Activity	Begin Design	Complete Design
Energy Supply	Bottle Rock Powerplant		
	Furnish Floor Panels	Jan. 1980	Sep. 1983
	Road Construction between Cobb and Station 40	Mar. 1981	Feb. 1984
	Completion	Jul. 1982	Dec. 1983
	South Geysers Powerplant		
	Furnish Switchgear	Feb. 1982	Dec. 1983
Oroville Division	Furnish and Install Cooling Towers	Dec. 1981	Dec. 1983
	Completion	Aug. 1981	Mar. 1984
	Feather River Hatchery		
	Waste Settling Ponds	Jul. 1982	Sep. 1983
	Thermalito Diversion Dam Powerplant		
	Plant Construction	Jul. 1980	Jun. 1984
Suisun Marsh	Furnish Major Equipment	Sep. 1981	Feb. 1984
	Thermalito Powerplant		
	Furnish 230 kV Circuit Breakers	Jul. 1983	Sep. 1983
	Montezuma Slough		
	Control Structure	Jul. 1983	Jan. 1985
	Access Road	Jul. 1983	May 1984
North Bay Aqueduct	Cache Slough Pumping Plant		
	Structure	Jan. 1983	Feb. 1985
	Mechanical-Electrical	Jan. 1983	Jun. 1985
	Cordelia Pumping Plant		
	Structure	Feb. 1983	Feb. 1985
	Mechanical-Electrical	Feb. 1983	Jun. 1984
	Pipeline		
	Suisun City Turnout-Ledgewood Creek	Feb. 1983	Nov. 1984
South Bay Aqueduct	Ledgewood Creek-Suisun Creek	Jan. 1983	Jul. 1984
	Suisun Creek-Cordelia Surge Tank	Jun. 1983	Jul. 1984
	Del Valle Dam		
	Seepage Measuring Facility	Aug. 1982	Mar. 1984
	Del Valle and Dyer Check Structure		
	Trashrake	Aug. 1982	Aug. 1983
California Aqueduct General	Pearblossom and Oso Pumping Plants		
	Replacement Pump Impellers	Sep. 1983	Jan. 1984
	Delta, Buena Vista, and Oso Pumping Plants		
North San Joaquin Division	Replacement Vacuum Circuit Breakers	Sep. 1983	*
	Banks Delta Pumping Plant		
	Furnish and Install Vertical Pumps	Jul. 1982	Apr. 1984
	John E. Skinner-Delta Fish Facility		
	Cathodic Protection	Dec. 1983	May 1984
	Delta O&M Center		
San Luis Division	Women's Facilities	Nov. 1982	Oct. 1983
	Clifton Court Forebay Dam Repair	Oct. 1982	Feb. 1984
	San Luis Pumping-Generating Plant		
	Conversion of Existing Power Supply from PGandE	Nov. 1983	Mar. 1984
	Relocate Chlorinator and Scale	Nov. 1983	Mar. 1984
	Install Water Storage Tank and Supply Line	Nov. 1983	Mar. 1984
Tehachapi Division	Disinfection of Water System	Nov. 1983	Mar. 1984
	Install Underground 15 kV Service and 500 kVA Distribution Transformer	Nov. 1983	Mar. 1984
Mojave Division	A. D. Edmonston Pumping Plant		
	Modifications Women's Restrooms	Nov. 1983	Dec. 1983
West Branch	Alamo Powerplant		
	Furnish Control Switchboards	Jul. 1981	Jan. 1984
	Furnish and Install Acoustic Flowmeter	Oct. 1983	Jan. 1984
	Mojave Siphon Powerplant		
	Trashrake	Jul. 1982	Nov. 1983
	Valve Vault	Jul. 1982	Nov. 1983
Other Project Activity	Check Structure Completion		
	Mile 379.0 and 389.5	Mar. 1983	Oct. 1983
Other Project Activity	Lower Quail Canal Break Repair	Mar. 1984	Apr. 1984
	Monitor and Control Systems		
Other Project Activity	Project Power Management System	Sep. 1980	Dec. 1985
	North Bay Aqueduct System	Jul. 1982	Dec. 1984
	California Aqueduct Completion	Feb. 1972	Jun. 1985
	Special Consulting Board Work	Jul. 1976	Dec. 1987

* Schedules are being established.



Lower Quail Canal Break

The 2.3-mile-long Lower Quail Canal connects Quail Lake and the Peace Valley Pipeline. On January 16, 1984, a section of the embankment and concrete lining of the Canal failed, spilling approximately 200 acre-feet of water into Pyramid Lake. There was no damage to property other than the Canal, but the West Branch of the California Aqueduct will be in limited service until repairs are completed.

Immediately after the break, a panel of experts was assembled to investigate the cause. The panel's report concludes that the break was caused by internal erosion from water escaping along cracks in the embankment. The cracks were probably created by differential settlement of the embankment foundation where the canal passes over alternating sandstone ridges and alluvium-filled ravines. The Canal began operation in 1972, but the water depth never exceeded 27 feet until it was raised to 37 feet a few days before the break.

The outage of the West Branch will not affect SWP deliveries for 1984. The three contractors served by the West Branch can be supplied with the aid of drawdown of Castaic Lake. Repairs to the Lower Quail Canal are scheduled to be completed by December 1984.

Delta Facilities

- o Six of the seven parcels required for Hood Fish Test Facility expansion have been acquired.

Suisun Marsh Facilities

- o DWR is commencing acquisition of three parcels at Montezuma Slough Control Structure in Suisun Marsh.

South San Joaquin Division

- o Nine parcels are being acquired for the California Aqueduct Silt Removal Program.

West Branch

- o Sites are being acquired for improvement of flood control at Gorman Creek.

From July 1983 through December 1983, DWR spent \$0.3 million for land acquisition in excess of credits for sales of surplus property and return of condemnation deposits. The total net expenditure through December 1983 is \$117 million. A total of 12 parcels (86 acres) was acquired from July 1983 through December 1983. The cumulative total of excess lands sold through 1983 is 840 parcels (12,354 acres).

Thirty new and existing leases were monitored through December 1983; revenues totaled \$27,922.

On the basis of a mitigation agreement between DWR, Department of Fish and Game (DFG), and MWDSC, transfer of DWR land to DFG is underway. The transfer of 909 acres in the West Branch Division has been completed. A transfer of 844 acres in the Santa Ana Division is at DFG for approval. Another 1,280 acres are yet to be transferred.

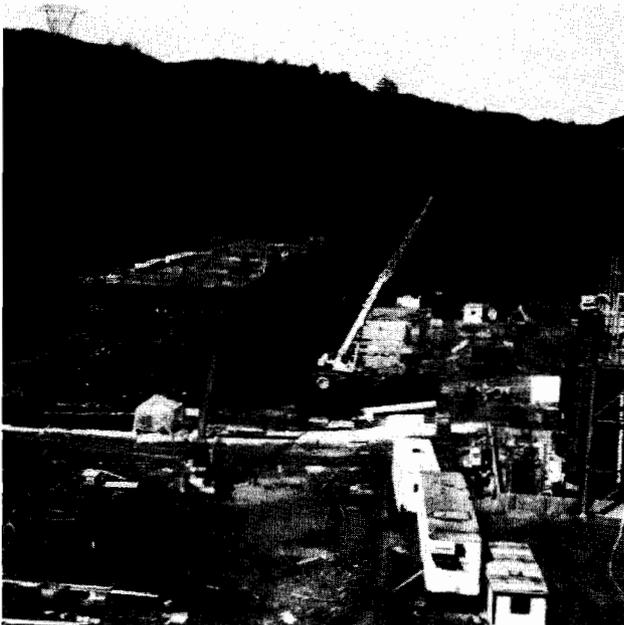
Construction Progress

Highlights of SWP construction activities between July 1983 and June 1984

are described below. A more complete listing of construction activities is shown in Table 13.

Energy Supply

- o DWR participated with the Nevada Power Company in the construction of Reid Gardner Unit No. 4, an addition to the existing coal-fired power plant located northeast of Las Vegas. The 250-MW addition became commercially operational on July 26, 1983.
- o Construction of the Bottle Rock Powerplant was well underway by early 1984. This geothermal energy development will provide 55 MW of electrical power for the SWP; operation is currently scheduled for January 1985.
- o Construction of South Geysers Powerplant was started in June 1982. When completed in 1986, this second geothermal power plant will also generate 55 MW of electrical power for the SWP.



Cooling tower under construction at Bottle Rock Powerplant

Suisun Marsh

- o Construction of the Roaring River Fish Screen (Second Stage) was completed. Repair work was also completed at Morrow Island Levee and Roaring River Levee, Phase IV.

San Luis Division

- o Silt materials were removed from Arroyo Pasajero Impoundment Basin.

San Joaquin Drainage Facilities

- o Principal construction of Los Banos Demonstration Desalting Facility, which was started in March 1982, was completed.

South San Joaquin Division

- o The initial construction contract for installation of bridge hinge restrainers to resist seismic movement at 12 bridges was started in May 1983 and completed in November 1983. A contract for 10 additional bridges was started in June 1984.

Tehachapi Division

- o Major contracts covering the installation of the last three vertical centrifugal pumps in the Edmonston Pumping Plant are in progress. The units are expected to be in operation by early 1985.
- o Construction of the second barrel of the Pastoria Siphon, which began in November 1981, was completed in November 1983.

Mojave Division

- o Construction of the tunnel and valve vault for Mojave Siphon Powerplant continued, but construction of the plant itself was deferred, pending further study. The power plant tunnel through the left abutment of Cedar Springs Dam was started in December 1982 and is scheduled for

TABLE 13: SWP CONSTRUCTION

Division or Facility	Activity	Start Date	Planned Completion Date	Contract Costs ^{1a} (\$1,000)	
Energy Supply	Bottle Rock Powerplant				
	Turbine-Generator	Nov. 1980	Jan. 1985	8,055	
	Condenser and Gas Removal System	Oct. 1981	Jan. 1985	3,880	
	Powerplant Construction	Feb. 1982	Jan. 1985	36,000	
	Cooling Water and Condensate Pumps	May 1982	Jan. 1985	965	
	Control Switchboards	Feb. 1982	Jan. 1984	301	
	Auxiliary Control System	May 1982	Jan. 1985	380	
	Road Construction	Aug 1983	Jul. 1984	1,560	
	Transformers (for Bottle Rock and South Geysers Powerplants)	Oct. 1982	Jan. 1985	1,755	
	Cooling Tower	Nov. 1982	Jan. 1985	3,500	
	Stretford System	Nov. 1982	Oct. 1984	3,405	
	Floor Panels	Dec. 1983	Jul. 1984	520	
	Completion Contract	Apr. 1984	Dec. 1984	2,200	
	South Geysers Powerplant				
	Initial Site Development	Jun. 1982	Sep. 1983	2,727	
	Turbine-Generator	Jan. 1983	Jun. 1985	7,950	
	Powerplant Construction	Jan. 1983	Apr. 1986	11,602	
	230 kV Line Breaker	Jul. 1983	Apr. 1985	189	
	Condenser and Gas Removal System	Aug. 1983	Sep. 1986	4,440	
	Plant Auxiliary Control System	Aug. 1983	Sep. 1984	440	
	Control Switchboards	Aug. 1983	Jan. 1985	336	
	Stretford System	Sep. 1983	Oct. 1986	3,850	
	Cooling Tower	Oct. 1983	Jul. 1986	3,350	
	Switchgear Motor Control	Apr. 1984	Aug. 1985	582	
	Cooling Water and Condensate Pumps	Apr. 1984	Jul. 1985	515	
	Completion Contract	May 1984	Jul. 1986	15,640	
	Croville Division	Edward Hyatt Powerplant			
		230 kV Power Circuit Breaker	Oct. 1982	Jun. 1984	2,680
		Repair Chiller Unit No. 2	Oct. 1982	Dec. 1983	29
		Generator and Motor-Generator Armature Winding Coils	Jan. 1983	Sep. 1984	1,070
		Emergency Generator Repairs - Units 1 and 5	Nov. 1983	Apr. 1984	1,546
		Machining Seat Cartridge Rings	Aug. 1983	Oct. 1983	9
		Spacer Rings and Wearing Rings	May 1984	Nov. 1984	178
		Thermalito Fish Rearing Raceways	Apr. 1983	Feb. 1984	1,200
		Feather River Hatchery Waste Settling Ponds	Nov. 1983	May 1984	147
		Thermalito Powerplant			
		230 kV Power Circuit Breaker	Nov. 1983	Sep. 1984	440
		Resealing of Paved Areas	Jun. 1983	Jul. 1983	82
		Thermalito Diversion Dam Powerplant			
		Turbine, Generator and Governor	May 1984	Jan. 1987	1,800
Modify Radial Gate No. 14		Feb. 1984	Jun. 1984	28	
Delta Facilities		Highline Canal and Upland Canal			
	Repair Levees	Aug. 1983	Sep. 1983	120	
Suisun Marsh Facilities	Roaring River Fish Screen, Second Stage	Mar. 1983	Dec. 1983	654	
	Morrow Island Levee Repair	Jul. 1983	Oct. 1983	39	
	Roaring River Levee Repair, Phase IV	Jul. 1983	Oct. 1983	138	
	Montezuma Slough				
Control Structure	May 1984	Oct. 1986	13,320		
Access Road	Jun. 1984	Nov. 1984	1,846		
South Bay Aqueduct	South Bay Pumping Plant				
	Furnish Pumping Units	Mar. 1983	Mar. 1984	715	
	Del Valle and Altamont Canals Replacement Trashrake Units	Oct. 1983	Aug. 1984	96	
	Del Valle Dam Seepage Measuring Facility	May 1984	Oct. 1985	242	
North San Joaquin Division	Clifton Court Forebay Dam Repair	May 1984	Oct. 1984	800	
	John E. Skinner Delta Fish Facility				
	Cathodic Protection System	Jun. 1984	Jan. 1985	25	
	Metering Equipment Installation	Jun. 1984	Dec. 1984	5	
	Delta O&M Center Women's Facilities	Jan. 1984	Jun. 1984	25	
	Right of Way Fencing, Miles 57.10 to 59.98	Apr. 1984	May 1984	50	
	Clean and Recoat Water Tank	Oct. 1983	Dec. 1983	71	
	Banks Delta Pumping Plant Valve Seat Ring Repair	Oct. 1982	Nov. 1984	46	

ACTIVITIES IN PROGRESS, JULY 1983 - JUNE 1984

Division or Facility	Activity	Start Date	Planned Completion Date	Contract Costs ^(a) (\$1,000)	
San Luis Division	San Luis Pumping-Generating Plant				
	Acoustical Flowmeter	Sep. 1982	Feb. 1984	137	
	Motor-Generator Modification	Dec. 1982	Jun. 1984	2,200	
	O'Neill Dam Riprap Repair	Nov. 1983	Apr. 1984	1,900	
South San Joaquin Division	Arroyo Pasajero Emergency Impoundment Basin Maintenance	Oct. 1983	Dec. 1983	2,000	
	Bridge Hinge Restrainers	May 1983	Nov. 1983	110	
Tehachapi Division	Bridge Hinge Restrainers, Phase II	Jun. 1984	Sep. 1984	195	
	Furnish Spare Impellers	Jul. 1982	Dec. 1984	1,018	
	A. D. Edmonston Pumping Plant				
Mojave Division	Pumping Units	Jul. 1979	Dec. 1984	16,415	
	Isolated Phase Bus Equipment	Nov. 1980	Oct. 1984	853	
	Motors	Jun. 1981	Dec. 1984	6,900	
	Switchboards	Jun. 1981	Dec. 1984	642	
	Switchgear	Sep. 1981	Dec. 1984	1,157	
	Completion, Phase II	Apr. 1982	Dec. 1984	2,400	
	Power Transformer	Mar. 1982	Oct. 1984	1,000	
	Replacement Switchgear	Mar. 1983	Aug. 1984	2,800	
	Valve Repair	Apr. 1984	Oct. 1984	393	
	Women's Facilities	Mar. 1984	Sep. 1984	69	
	Pastoria Siphon - 2nd Barrel	Nov. 1981	Oct. 1983	8,700	
	Alamo Powerplant	Turbine	Oct. 1980	Nov. 1984	2,500
		Initial Structure	Mar. 1982	Jun. 1984	19,700
		Gantry Crane	Jul. 1982	Feb. 1984	330
		Generator	Aug. 1983	Jan. 1986	2,125
Governor		Jul. 1983	Nov. 1985	360	
Power Transformer		Oct. 1983	Jan. 1985	275	
Completion Contract		Aug. 1983	Dec. 1985	4,450	
Acoustical Flowmeter		Apr. 1984	May 1985	109	
Generator Switchgear		Dec. 1983	Jun. 1985	365	
Control Switchboards		Mar. 1984	Jun. 1985	408	
Check Structures, Miles 379 and 389.5					
Completion Contract		Mar. 1984	Feb. 1985	770	
Pearblossom Pumping Plant					
Plug and Valve Seats		Jul. 1983	Aug. 1983	4	
Pearblossom and Oso Pumping Plants					
Replacement Pump Impellers		Jun. 1984	Jun. 1986	446	
Mojave Siphon Powerplant					
Tunnel	Dec. 1982	Nov. 1984	5,300		
Valve Vault	Apr. 1984	Apr. 1985	1,075		
Santa Ana Division	Devil Canyon Powerplant				
Valve Control Modification	Mar. 1983	Jun. 1984	337		
West Branch	William E. Warne Powerplant				
Turbines	Feb. 1978	Dec. 1984	3,890		
Generators	Jun. 1979	Dec. 1984	5,305		
Switchboards	Mar. 1980	May 1984	573		
Actuators	Aug. 1980	Dec. 1984	790		
Flowmeter	Nov. 1981	May 1984	141		
Completion Contract	Dec. 1980	Dec. 1984	11,010		
Quail Detention Embankment	Oct. 1982	Oct. 1983	1,840		
Pyramid Lake Recreation Facility					
Phase III	Jul. 1983	Mar. 1984	1,410		
Stacking Lane	Jan. 1984	Apr. 1984	121		
Administration Building and Helipad	Apr. 1984	Sep. 1984	185		
Southern California O&M Center					
Modification O&M and Visitors' Center	Apr. 1984	Jul. 1984	51		
Castaic Dam Spillway Repair	May 1984	Jul. 1984	21		
Oso Pumping Plant Valve Repair	Dec. 1983	Feb. 1984	14		
San Joaquin Drainage Facilities	Los Banos Demonstration Desalting Facility				
Physical and Chemical Components	Apr. 1982	Jun. 1984	3,656		
Solar Ponds	Dec. 1982	Sep. 1983	270		
Solar Ponds Completion	Jun. 1983	Dec. 1983	339		
Electrodialysis Unit	Jun. 1983	Mar. 1984	188		
Rankine Unit	Sep. 1983	Jul. 1984	280		

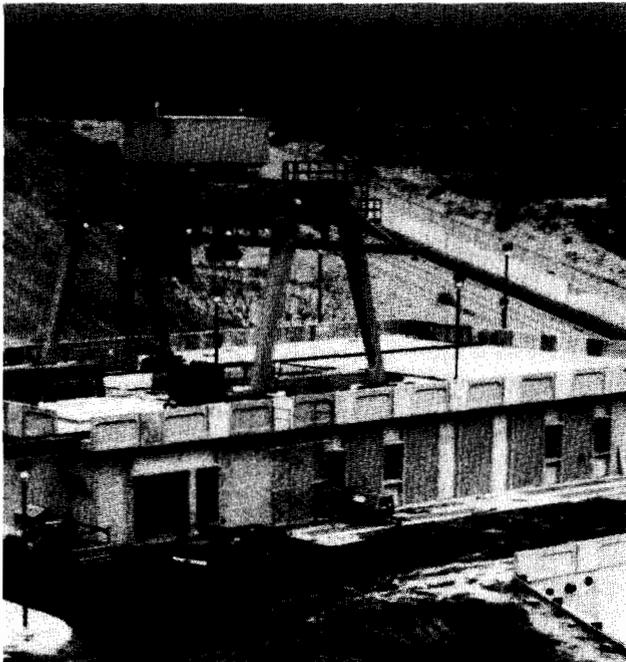
a) Costs represent actual costs of completed work or estimates of final costs of construction in progress.

completion in October 1984. The valve vault is scheduled for July 1985 completion.

- o Construction of Alamo Powerplant, which began in March 1982, is continuing; operation is scheduled for September 1985.

West Branch

- o Construction of Warne Powerplant, which began in February 1978, is essentially completed. Testing of the units will be performed in 1985 after repairs to the Lower Quail Canal are completed.
- o Construction for the Quail Detention Embankment Facility, which is located adjacent to the Lower Quail Canal, started in October 1982 and was completed in October 1983.
- o Modification and addition of new facilities for the Pyramid Lake Recreation Facility, Phase III, began in July 1983 and was completed in May 1984.



Alamo Powerplant

Safety of SWP Dams

In 1975, as required by Water Code Section 6056, DWR initiated a revised program for review of the safety of SWP dams. Under this program, 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 in the process of implementing the boards' recommendations. Following is a summary of activities in progress under this program.

- o DWR completed final technical studies and the final draft of the Thermalito Afterbay Dam Seismic Evaluation Report. The Consulting Board concurred with the report with a minor modification in November 1983. The final report will be submitted to the Board in late 1984.
- o DWR has prepared a supplement to Bulletin 203-78, "The August 1, 1975 Oroville Earthquake Investigations." Final publication will occur when concurrence is obtained from the Board.
- o While the Safety Review Board found Del Valle, Clifton Court Forebay, Patterson, and Bethany Dams to be safe, it recommended additional work and studies for each dam. The recommendations included dynamic soil studies, seismic stability analyses, specific monitoring and inspection at each structure, and numerous repairs. DWR management is reviewing accountability statements covering the recommended work, and all work and studies are expected to be completed by December 1984.
- o The Safety Review Board found Perris Dam to be safe but recommended that an investigation be made of a depression located at the upstream edge of the upstream impervious

blanket; the investigation will be conducted in the fall of 1984. The Board also suggested that certain selected inoperative gas piezometers be replaced and that at least two new piezometers be added in the foundation of the dam; this work will be completed in the summer of 1984.

- o Castaic Dam was declared safe, but additional design and remedial work was recommended. Analysis of the left abutment and installation of more pressure-sensing devices should be completed by late 1984. A report on the recalculation of the maximum flood hydrograph was completed by June 1984. Also, work will begin in 1984 to correct movement between concrete slabs in the spillway.
- o DWR submitted its memorandum report on the "Seismic Reevaluation of Cedar Springs Dam and Reservoir" to the Safety Review Board in March 1983. The final report was submitted in June 1984.

Besides the preceding activities under Water Code Section 6056, DWR also conducted the following activities related to dam safety during the report period:

- o An independent consultant inspected all of the Oroville Reservoir Complex dams in 1980, under requirements of the Federal Energy Regulatory Commission (FERC). All actions recommended by the consultant have been completed except for investigations and reports in progress for the Special Consulting Board on the Oroville Earthquake, which are to be completed in 1984.
- o Another safety inspection of the Oroville Reservoir Complex dams was conducted in early 1984. A report is due to FERC by July 15, 1984.
- o The safety inspection report of Cedar Springs and Pyramid Dams recommended reexamination of the dynamic stability or deformation of Pyramid Dam. This reexamination is scheduled for 1984-85 with a report to FERC in 1985-86.
- o An engineering analysis of San Luis Dam was completed in 1983. The Consulting Board is reviewing the analysis and will comment at a 1984 Board meeting.
- o A joint DWR-USBR field inspection of O'Neill Dam in 1982 revealed needed restoration of riprap facing to protect the dam. Plans and specifications were prepared by DWR. The restoration work was completed in early 1984.

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 and transportation capabilities to meet future needs.

Future Water Delivery Plans

In August 1983, DWR sent a letter to each long-term SWP contractor, requesting (1) estimates of monthly SWP water requirements during 1984 through 1989, and (2) annual requirements for 1990 and every fifth year thereafter until the year in which maximum entitlements would be used on a regular basis.

In September 1983, SWP contractors submitted their estimated monthly SWP water delivery requirements for the six-year period 1984 through 1989. Their estimates included delivery of entitlement, surplus, carryover, wet-weather (Article 45), emergency relief, and exchange water.

Entitlement Water

Table 14 shows the estimated 1984 through 1989 entitlement water needs (including entitlement deferred from prior years) submitted in 1983 (and subsequently revised), as well as estimates submitted in the six previous years. These values reflect substantial reductions in previous 1984 and

TABLE 14: WATER CONTRACTORS' REQUESTS FOR ENTITLEMENT WATER, 1983 THROUGH 1989

Year Estimate Submitted	Annual Delivery Requests (Acre-Feet) ^(a)						
	1983	1984	1985	1986	1987	1988	1989
1983		1,567,520	1,897,531	2,682,948	2,780,832	2,852,989 ^(b)	2,906,699 ^(b)
1982	2,368,138	2,404,542	2,599,190	2,711,107	2,800,235	2,888,377	
1981	2,335,841	2,383,586	2,699,830	2,788,111	2,901,175		
1980	2,245,197	2,405,844	2,561,970	2,709,710			
1979	2,279,942	2,461,223	2,617,594				
1978	2,403,652	2,495,503					
1977	2,371,140	2,482,275					
Total Entitlements ^(c)	2,701,994	2,884,187	3,102,897	3,296,885	3,507,960	3,705,609	3,974,270

- a) For the years 1983 through 1986, amounts include non-SWP water pumped through interim facilities to Napa County Flood Control and Water Conservation District.
- b) Includes 10,000 acre-feet for ground water fill as part of a locally managed long-term ground water management program in the Santa Clara Valley. Also, reflects reductions in requested deliveries due to limited East Branch capacity.
- c) Maximum that could be requested under the water supply contracts. From Table B-4, with addition of non-SWP water for Napa County Flood Control and Water Conservation District in 1983 through 1986.

1985 MWDSC requests, made in anticipation of abundant supplies from other sources. The longer-range contractor requests for entitlement water are presented in Table B-5B (in Appendix B).

Surplus Water

September 1983 requests for 1984 surplus water (including 51,975 acre-feet of preconsolidation repayment water) total 297,833 acre-feet. Five contractors signed 1984 surplus water contracts. The contracts incorporate the basic principles set forth in Water Contractors Council Memo No. 1585, "Policy on Pricing Power for Pumping Surplus Water." Under contract terms, if DWR has excess electrical capacity and energy produced by SWP facilities or through contractual arrangements, such power may be used for surplus water delivery. In this case, the contractor receiving surplus water will be charged the market value of the last incremental unit of such power based on an assessment of actual sales.

If DWR does not have excess power for pumping surplus water, or if it is possible to purchase less expensive power, then contractors receiving surplus water must pay the actual cost of such electrical capacity, energy, and additional transmission service purchased specifically to deliver surplus water. In addition, if the delivery of surplus water reduces the water level in San Luis Reservoir, contractors must pay for electrical capacity and energy required to return the level of San Luis Reservoir to what it would have been without surplus water delivery. Finally, in addition to the cost of power, the contractors must pay the administrative and variable replacement costs incurred in delivering surplus water.

Since the market price of power varies, DWR is sending a letter each month to those agencies contracting for 1984 surplus water. This letter establishes

the respective agency's maximum rate per acre-foot of surplus water demand for the month.

The procedure for pricing power for pumping surplus water is being discussed with the State Water Contractors Contract Issue Committee. The procedure may be adjusted in future contracts to reflect agreements reached from these discussions.

Under terms of the Surplus Water Contracts, the following monthly percentages of annual entitlement amounts must be delivered before delivery of surplus water can begin:

	<u>San Joaquin Valley</u>	<u>South Bay</u>
January	2%	5%
February	3%	5%
March	6%	6%
April	8%	9%
May	10%	10%
June	16%	11%
July	18%	11%
August	18%	11%
September	9%	11%
October	4%	9%
November	3%	7%
December	3%	5%

Unscheduled Water

Because surplus water was declared available in January 1984, no unscheduled water will be delivered in 1984.

Miscellaneous Water

Approved delivery schedules issued in December 1983 included 9,500 acre-feet of 1977 emergency relief water and 5,662 acre-feet of 1978 exchange water. These projected 1984 deliveries, totaling 15,162 acre-feet, were scheduled at the request of Kern County Water Agency. Expected deliveries of recreation water during 1984 total 8,977 acre-feet.

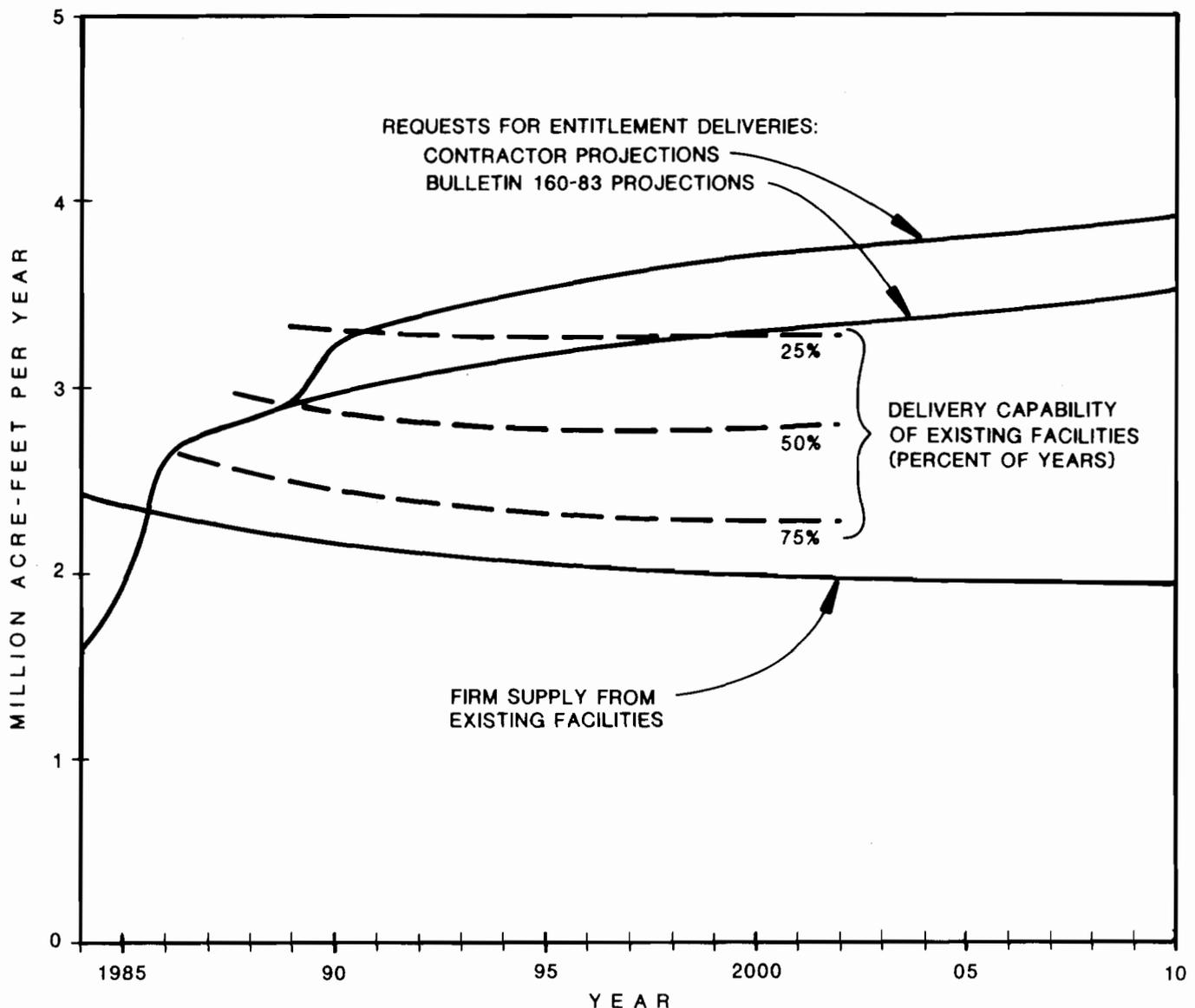
Water Supply and Demand

The SWP's initial conservation storage facilities, Lake Oroville and San Luis Reservoir, store water for delivery later in the year or in subsequent years. The present firm yield of the existing facilities is about 2.4 million acre-feet per year. This is the level of water deliveries that could be sustained through a sequence of dry years (such as occurred in 1928-34) without temporary deficiencies in excess of those allowed by the contracts. In years of normal or above-normal precipitation, the existing SWP facilities can deliver more than the firm yield.

The SWP firm yield developed by existing facilities is expected to decrease to about 2.0 million acre-feet per year by 2000 as (1) water use in areas of origin increases, (2) CVP contractual obligations increase, and (3) use of water associated with other prior rights to Northern California water supplies materializes.

Figure 9 shows the relationship between the gradually declining delivery capability of existing SWP facilities and the projected increasing demands for water service. The dashed lines show the delivery capabilities associated with various levels of probability; for example, in half of the years, the

FIGURE 9: ENTITLEMENT REQUESTS VS. DELIVERY CAPABILITY



existing facilities could deliver at least the amount shown by the 50-percent line.

Two projections of future entitlement requests are included on Figure 9. One represents the contractors' estimates summarized in Table B-5B of this bulletin; the rapid increase in requests that it shows near 1990 is related to the easing of conveyance restraints due to assumed enlargement of the East Branch of the California Aqueduct and to the assumed commencement of storage for locally managed ground water programs. The other projection of entitlement requests is an alternative projection prepared by DWR's Division of Planning for Bulletin 160-83, "The California Water Plan: Projected Use and Available Water Supplies to 2010." The Bulletin 160-83 estimates are based on statewide projections of average year water use in each major hydrologic study area and do not reflect any additional deliveries for local ground water management programs. Trends in population growth, market-place competition for agricultural produce, patterns of land use, estimated cost of water, and the impacts of water conservation were the major factors considered to influence future water use in each hydrologic study area. Specific assumptions selected to represent the future circumstances were those that seemed most probable at the time the studies were made and varied depending on locality.

Figure 9 shows that the existing SWP facilities would not provide sufficient water under prolonged drought conditions to meet contractor requests after 1985. However, under median water delivery conditions, the existing SWP facilities could meet all requests for entitlement water until about 1989. After that, there would be increasing risk of water supply deficiencies.

Figure 10 shows the frequency at which various amounts of water could be delivered by existing facilities under

projected 1990 and 2000 conditions. By 2000, the contractors' target delivery of about 3.7 million acre-feet per year could be met in only the wettest years, but more than 2.8 million acre-feet could be delivered in about half the years. Figure 10 shows that water deliveries in extreme dry years would be less than the firm yield indicated by Figure 9; this reflects the occasional deficiencies in agricultural water supply allocated pursuant to Article 18(a) of the water supply contracts.

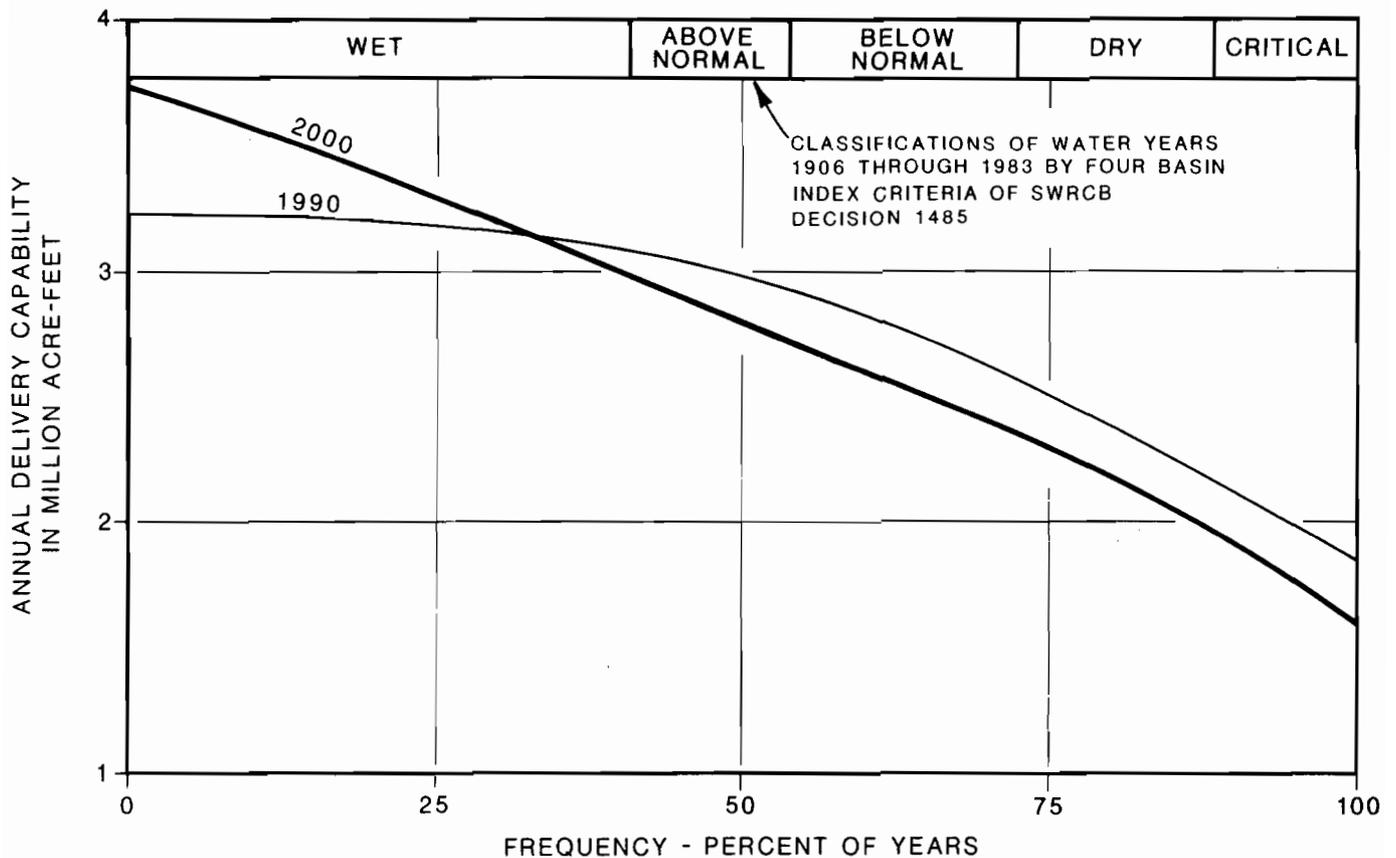
In Bulletin 132-83, Tables 2 through 5 show how various amounts of water deliveries would be allocated among SWP contractors. These tables are not repeated this year, as there would be no significant changes (except that reduced contractor requests for 1985 would eliminate the minor dry-year deficiencies shown in Table 2 of Bulletin 132-83).

Alternatives for Delta Water Transfer

DWR has long recognized that a Delta water transfer facility could provide an economical increment of SWP yield as well as help overcome existing problems in the Delta. In November 1983, DWR released "Alternatives for Delta Water Transfer," a report on the most promising alternatives to the Peripheral Canal. The report is essentially a technical review of available information gained through many years of Delta investigations. The report makes no recommendation, nor does it draw any conclusions about a preferred plan.

Many water transfer alternatives were considered. Through a selection process, these were reduced to the four basic alternatives considered most practical. These four alternative "through-Delta" transfer systems would increase the flow of Sacramento River water through central Delta channels. Both a north Delta and a south Delta facility are needed to constitute a complete through-Delta transfer sys-

FIGURE 10: DELIVERY CAPABILITY FREQUENCY OF EXISTING SWP FACILITIES



tem. The basic alternatives are shown in Figure 11.

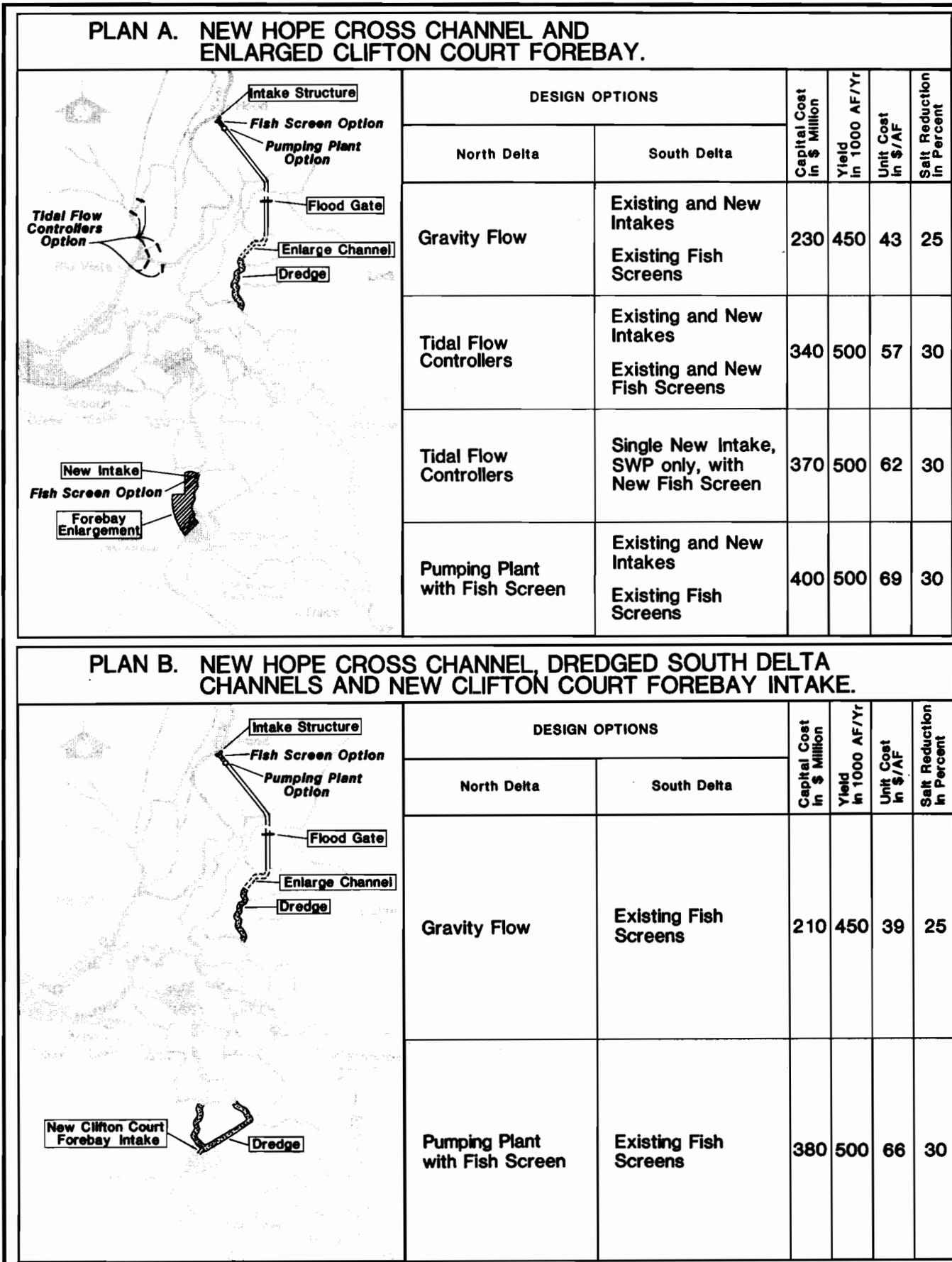
Several design options could be considered with any of the four basic alternatives. A variety of means (pumping plants, barriers, or tidal flow controllers) could be used to enhance the transfer efficiency of any north Delta facility. Also, a variety of options are possible in attempting to protect fish through the use of fish screens. The design options thought to be practicable are illustrated in Figure 11, which also lists the estimated capital cost, dependable yield, and unit cost of yield for each of the four alternatives and their design options.

For all the alternatives, continued use of existing State and Federal pumps is

required, plus installation of four additional pumps at the Banks Delta Pumping Plant. Planning for the pumps is proceeding independently, as described later in this chapter.

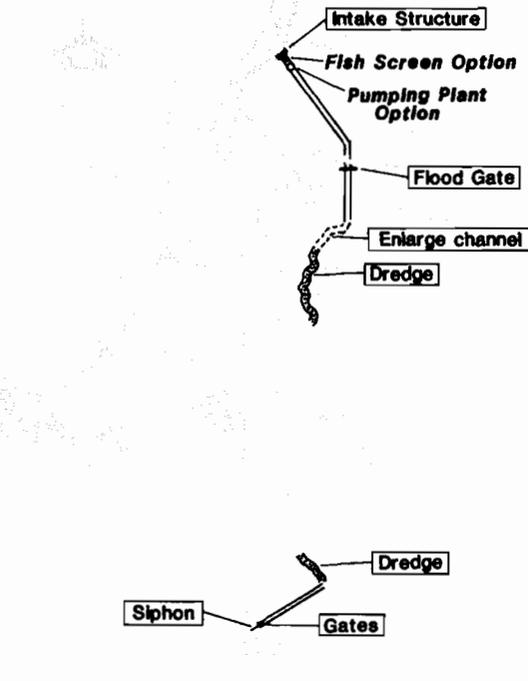
Closely coordinated operation of the SWP and CVP would be required under all alternatives. The quality of water for each project would be substantially improved because each alternative would reduce or eliminate reverse flows and the commingling with ocean-derived salts from the western Delta. Some alternatives would require automating the control gates of the existing Delta Cross Channel, which transfers Sacramento River water into the central Delta.

FIGURE 11: ALTERNATIVE

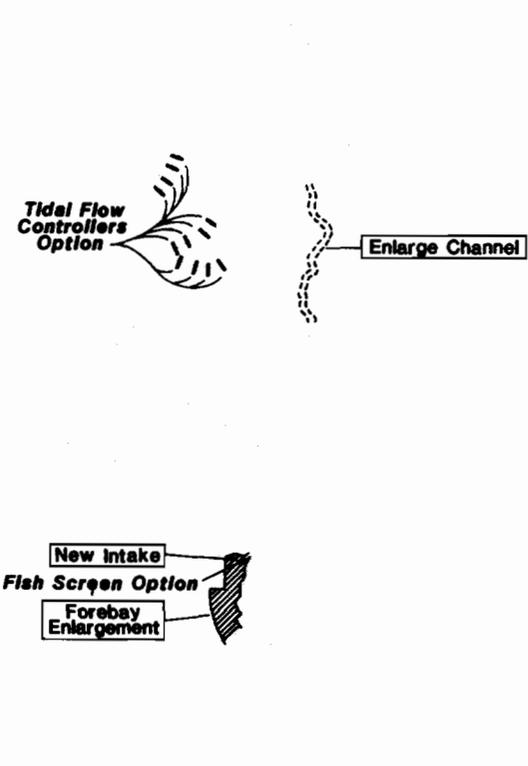


THROUGH-DELTA TRANSFER SYSTEMS

PLAN C. NEW HOPE CROSS CHANNEL AND NEW INTAKE CHANNEL TO CLIFTON COURT FOREBAY.

	DESIGN OPTIONS		Capital Cost in \$ Million	Yield in 1000 AF/Yr	Unit Cost in \$/AF	Salt Reduction in Percent
	North Delta	South Delta				
	Gravity Flow	From Middle River, SWP only, with Existing Fish Screens				
Pumping Plant with Fish Screen	From Middle River, SWP only, with Existing Fish Screens	400	500	69	30	

PLAN D. ENLARGED NORTH DELTA CHANNELS AND ENLARGED CLIFTON COURT FOREBAY.

	DESIGN OPTIONS		Capital Cost in \$ Million	Yield in 1000 AF/Yr	Unit Cost in \$/AF	Salt Reduction in Percent
	North Delta	South Delta				
	Gravity Flow	Existing and New Intakes Existing Fish Screens				
Tidal Flow Controllers	Existing and New Intakes Existing and New Fish Screens	290	500	49	30	
Tidal Flow Controllers	Single New Intake, SWP only, with New Fish Screen	320	500	54	30	

Alternatives employing either an enlarged Clifton Court Forebay or a new intake channel to Clifton Court Forebay could be expanded at extra cost, now or in the future, to include federal participation if authorization were achieved. While federal participation could not increase the yield of the alternative, it would provide an opportunity for screening out small fish that are now pumped into the Delta-Mendota Canal.

Elimination or reduction of reverse flows in the lower San Joaquin River would improve the environment there for migrating salmon, young striped bass, and fish food organisms and would also lower the salt content in Old River for local use and export. These and other more complex environmental effects will be addressed in the required environmental documents. A basic fish and wildlife mitigation plan for any alternative would probably consist of some mix of fish screens, hatchery production, habitat restoration, and operational agreements.

There is a clear link between plans to improve Delta water transfer and plans to restore Delta levees. All the water transfer alternatives require channel enlargements in the South Fork Mokelumne River, and some require channel dredging near Clifton Court Forebay. These enlargements and dredging would help provide fill material for levee reconstruction, increase the carrying capacity of the channels, and lower flood stages. A plan to both coordinate levee restoration with construction of a water transfer system and share the costs according to the benefits received is being developed by Federal, State, and local interests. The Administration has introduced legislation to redirect \$10 million per year of Tideland Oil revenue into the State's Levee Subventions Program.

The 1983 Delta Alternatives report also states DWR's intention to proceed to-

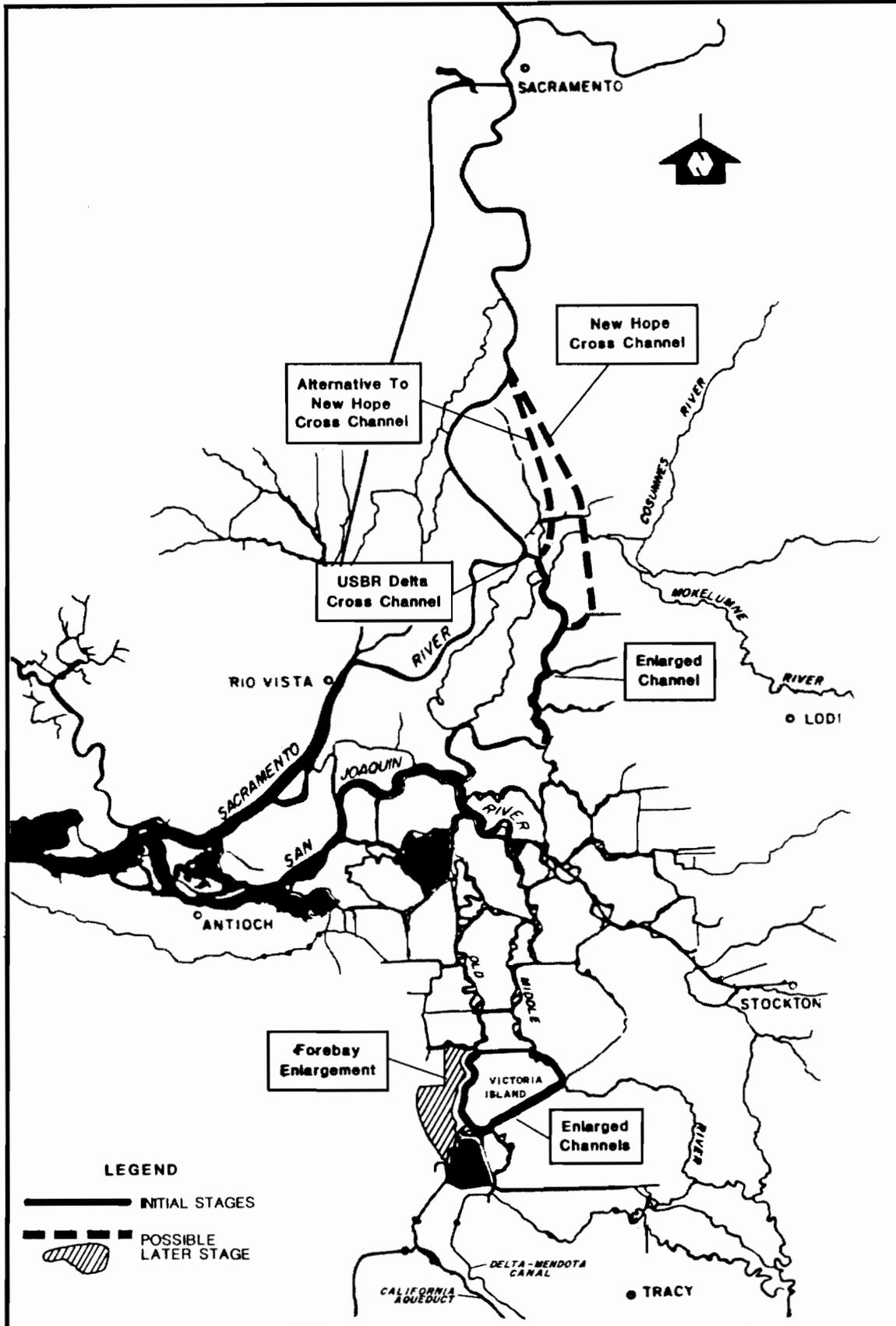
ward construction of an overland agricultural water supply for Sherman Island in the western Delta, to continue to evaluate the need for facilities to solve local water supply problems in the southeast Delta, and to evaluate relocation of the Contra Costa Canal intake.

After release of the report, DWR held a series of meetings with various interests to receive input on the alternatives. Joint hearings by the legislative water committees and a California Water Commission workshop also provided opportunities for public input on the alternatives and related issues. Since protection and restoration of fisheries is a significant factor in selection of a plan, DWR continued its ongoing studies with the Department of Fish and Game.

On April 10, 1984, DWR presented the Administration's proposed plan for Delta Water Transfer Facilities to the Senate Committee on Agriculture and Water Resources. Senate Bill 1369 (Ayala) was amended to provide for the facilities (see "Administration Water Legislation Package" in Chapter III).

The recommended plan involves staged construction in the north and south Delta, as shown in Figure 12. The initial stage in the north Delta would be to enlarge the South Fork Mokelumne River between the Delta Cross Channel and Little Potato Slough. The second stage in the north Delta would be to construct a new channel between the Sacramento River and Mokelumne River if experience gained from operation of the initial stage indicated it was necessary to meet environmental and water supply objectives. The New Hope Cross Channel and an alternative route are presently under consideration. Each stage of the north Delta facilities would conserve approximately 200,000 acre-feet of water per year.

FIGURE 12: RECOMMENDED DELTA WATER TRANSFER PLAN



The initial stage in the south Delta would be levee protection and channel enlargements in the vicinity of Victoria Island, and an additional intake to Clifton Court Forebay. A possible alternative or second stage in the south Delta would be to enlarge Clifton Court Forebay.

Potential Means to Augment Water Supply

DWR is continuing planning for development of new water supplies to meet future delivery requirements under existing SWP long-term contracts. The principal current programs are outlined in this section.

Banks Delta Pumping Plant, Additional Units

The most advanced program is for completion of the four remaining pumping units at the Banks Delta Pumping Plant. (The plant was built to accommodate eleven units, but only seven were installed initially.) It is currently anticipated that the last of the new units will go into operation in 1990. A draft EIR on this expansion was distributed in November 1982. Work on the final report is continuing.

The additional pumps (each rated at 1,067 cfs) will increase total pumping capacity to match that of the California Aqueduct, about 10,300 cfs. The preferred plan is to order and install four additional pumping units and to operate the plant according to criteria established by the U.S. Army Corps of Engineers in its Public Notice 5802A, Amended, dated October 1981. This will provide the SWP with additional yield of about 60,000 acre-feet per year, lower power costs through off-peak pumping, and standby pumping capacity.

Offstream Storage South of the Delta

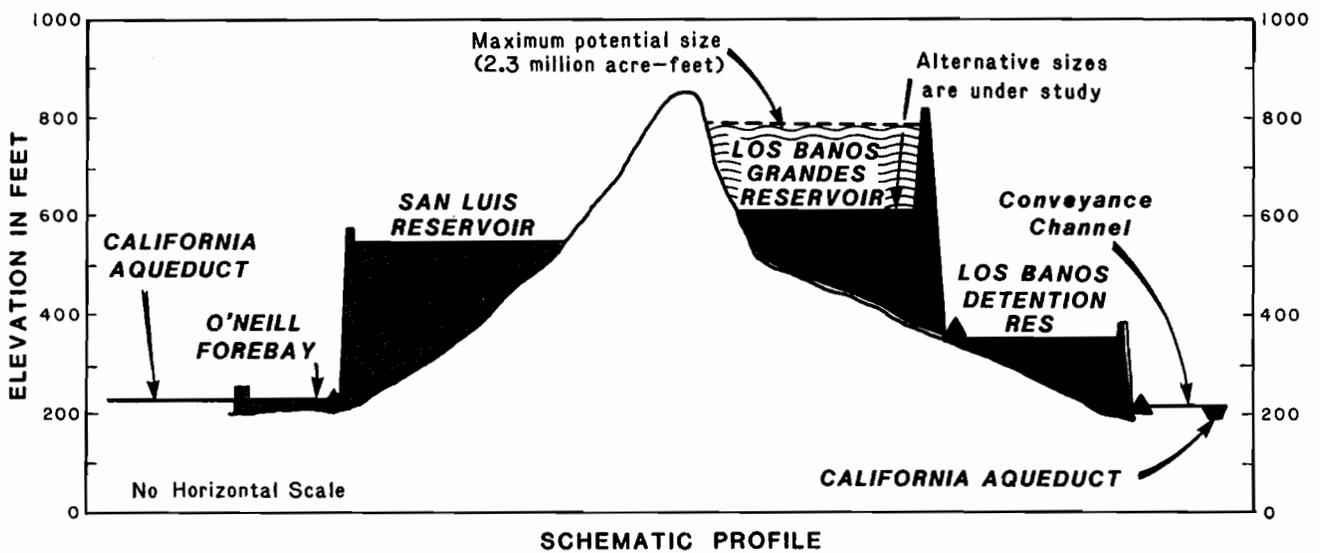
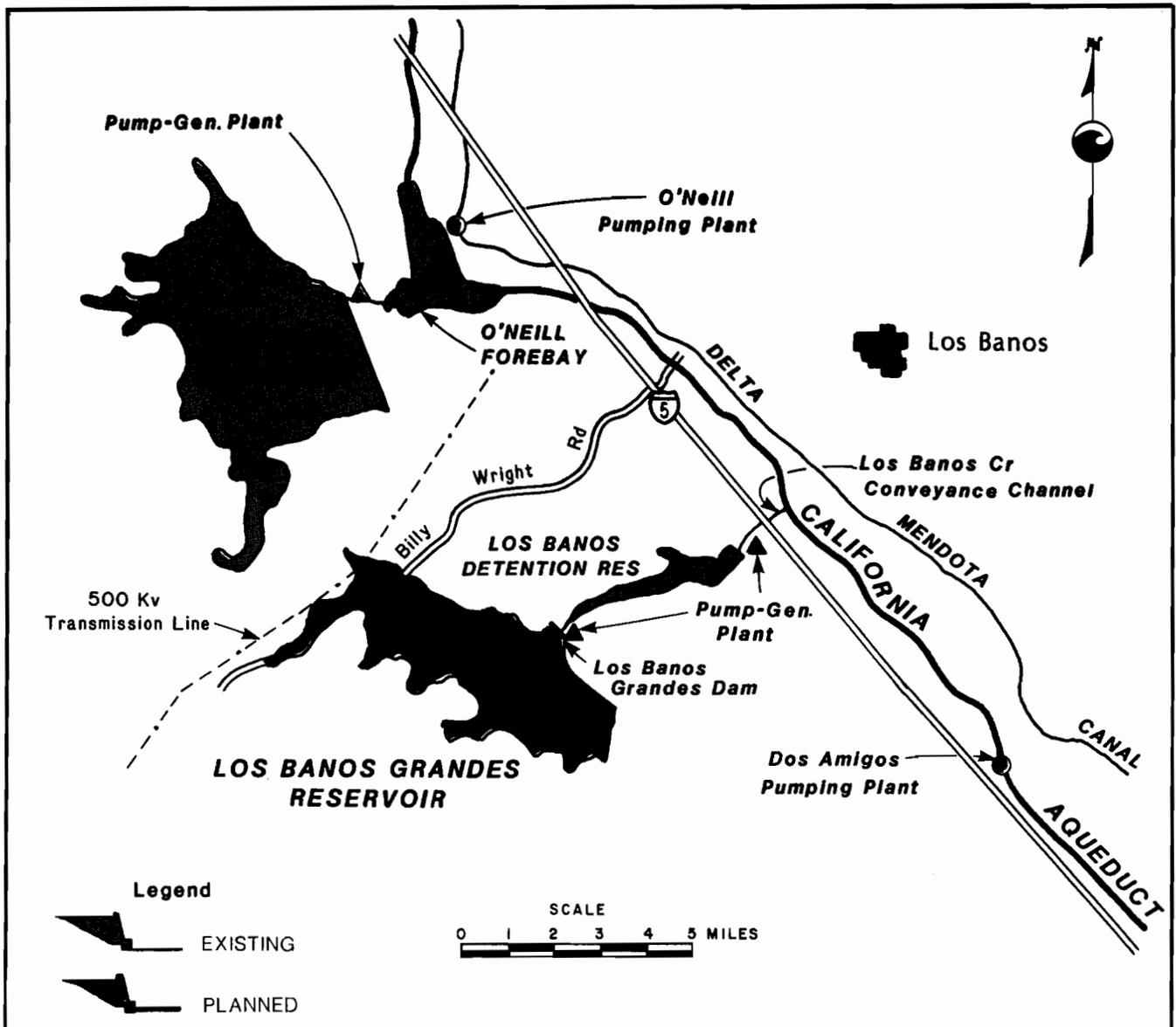
Installation of the final four pumps at the Banks Delta Pumping Plant and con-

struction of an improved Delta water transfer system will provide considerably more operational flexibility for the SWP. San Luis Reservoir could be filled earlier in the year, and it would be possible to divert additional excess winter flows through the California Aqueduct and store them in new offstream reservoirs for later use during drier periods, either that same year or in subsequent years. Conjunctive operation of new offstream reservoirs with ground water storage in the San Joaquin Valley and Southern California could further increase SWP water supply and reliability. In addition to the benefits from increased water delivery capability, winter diversions are more compatible with Delta fishery needs than late spring and early summer diversions.

During the past year, DWR conducted the initial phase of a study of potential offstream surface reservoirs south of the Delta and near the California Aqueduct. A progress report, "Alternative Plans for Offstream Storage South of the Delta," was completed in May 1984. This reconnaissance evaluation identified and appraised 29 reservoir alternatives at 13 storage sites. DWR reviewed available information on geologic and seismic conditions and made preliminary estimates of cost, yield, and net energy requirements for each alternative. A preliminary environmental assessment was also made to summarize what is already known about each site and to identify any critical concerns that might affect the choice of site.

This study indicated that Los Banos Grandes Reservoir, at a capacity of 1,000,000 acre-feet, is the most promising and cost-effective of the 29 alternatives considered. The Los Banos Grandes site is 79 miles south of the Delta, on Los Banos Creek immediately upstream from Los Banos Detention Reservoir (Figure 13). The preliminary appraisal did not identify any critical

FIGURE 13: LOS BANOS GRANDES OFFSTREAM STORAGE PLAN



concerns that would preclude a reservoir at this site for environmental reasons. Current studies are looking toward a 500,000-to 1,000,000-acre-foot reservoir for initial construction, with the possibility of later enlargement if needed; the entire question of sizing and staging will be addressed during the feasibility investigation.

The present study will also give further consideration to smaller reservoirs at the Kellogg and Los Vaqueros sites (both located in Contra Costa County about 6 miles west of Banks Delta Pumping Plant). While the large reservoirs at these sites studied in the past proved to be less cost-effective in providing major new supplies for the SWP than Los Banos Grandes, they are strategically located and have the ability to provide a more reliable water supply of improved quality to South Bay counties. Initial follow-up efforts will focus on determining the interest of potentially benefiting agencies in pursuing additional study of Kellogg or Los Vaqueros Reservoirs, possibly as a joint venture with the State.

The comparison of alternative sites south of the Delta in the present study is based on a maximum diversion capacity of 10,300 cfs at Banks Delta Pumping Plant. The location of the Kellogg and Los Vaqueros sites is favorable for a possible additional pump connection with the Delta for reservoir filling, if such additional pumping were approved.

Cottonwood Creek Project

Cottonwood Creek, in Shasta and Tehama Counties, is the largest uncontrolled tributary of the Sacramento River; it 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.

The Corps' 1970 interim report on the Cottonwood Creek Project recommended a 1,100,000-acre-foot Dutch Gulch Reservoir and a 900,000-acre-foot Tehama Reservoir. The total first cost was estimated as about \$170 million at 1970 prices. A majority of the project benefits was derived from supply of municipal and industrial water, to which \$120 million of the cost was allocated. The State expressed interest in the water supply, which was estimated to increase SWP firm yield by 235,000 acre-feet per year. Accordingly, the 1970 report was predicated on State participation, under the Water Supply Act of 1958. The Act provides for purchase of storage space, with repayment over a period of up to 50 years at an interest rate based on outstanding federal obligations at the time construction funds are first appropriated. In 1970, the interest rate applicable under the Act was 3.463 percent; total annual SWP payments, including operation, maintenance, and replacement costs, would have been less than \$6 million.

In 1976, Congress provided the Corps with funds for advanced engineering and design studies. Phase I of these studies was completed in 1983 and the report and final environmental impact statement were released in January 1984. The Corps' 1983 report recommends somewhat smaller reservoirs (900,000 acre-feet at Dutch Gulch, 700,000 at Tehama) than the authorized plan. Based on earlier data provided by DWR, the Corps shows the incremental SWP yield associated with the Cottonwood Creek Project as 205,000 acre-feet per year; the most recent DWR studies indicate the yield increment would be 190,000 acre-feet (without a Delta water transfer facility). The Corps estimates annual benefits from flood reduction as

\$8,300,000. Local irrigation, included in the authorized plan, was found economically infeasible at present but would be retained as a potential future project purpose should economic conditions change. Only minimum recreation facilities are proposed, because of the lack of a nonfederal sponsor to assume the local share of recreation costs. The Corps' studies indicate that hydroelectric power generation would probably be economically justified even though it is not currently authorized; the plan includes provisions for installation of generation facilities, pending detailed power studies in the final design phase. Potential average annual energy generation is about 54 million kWh, with an installed capacity of 25.4 MW. The City of Redding has a permit from the Federal Energy Regulatory Commission and has expressed its intent to develop the energy resources at the project site.

The Corps' 1983 report estimates the total first cost of the Cottonwood Creek Project as \$753 million (at October 1982 price levels). The allocation to municipal and industrial water supply is \$626 million and financing under the Water Supply Act of 1958 is assumed. In 1984, the applicable interest rate is 10.40 percent. With allowance for construction cost escalation to January 1984 levels, the current total cost to the SWP contractors (including operation, maintenance, replacement, and interest during construction as calculated by the Corps) would be approximately \$70 million annually. There is concern that incremental costs of this magnitude may exceed the contractors' repayment capabilities. Consequently, consideration is being given to other possible means of achieving some of the water supply and flood control benefits at a lower cost.

Shasta Lake Enlargement

For several years, the USBR and DWR have been studying the feasibility of enlarging Shasta Dam. The study has been conducted pursuant to a 1980 federal law that authorizes the USBR to consider the enlargement of Shasta Dam as a unit of the CVP. State law provides continuing authority for DWR to study future water supplies for the SWP. In order to jointly study the enlargement of Shasta Dam, the two agencies signed a Letter of Intent in 1979, and entered into a contract and developed a Plan of Study in 1982. The study's primary objective has been to determine the feasibility of increasing water supplies for the CVP and SWP. Other objectives include increasing power generation and improving fisheries, recreation, and flood control along the Sacramento River.

Recently, there has been a growing recognition by many water interests in California that other needs should be dealt with before developing the additional storage an enlarged Shasta Lake would provide. 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 is shifting 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, is shifting its planning to smaller, less expensive projects. Both the USBR and DWR are deferring planning activities that were scheduled in the original Plan of Study for Shasta Lake enlargement.

The USBR plans to conclude its ongoing studies by September 30, 1984 - the end of the current federal fiscal year -

and will defer the remaining studies of enlarging Shasta Lake. DWR will complete most of its studies by June 30, 1984 - the end of the current State fiscal year. The two agencies will jointly develop an interim status report on the investigation by June 1985. The status report will include the pertinent basic data and findings that have been collected and developed during the study.

Central Sierra Streams

In July 1983, DWR initiated an investigation to determine if possible water supply projects on the Yuba, Bear, Cosumnes, and American Rivers, identified by other agencies, warrant more detailed study by DWR. In analyzing potential projects, consideration is given to meeting area of origin and other local needs along with development of SWP supply.

A preliminary findings report is scheduled for 1984 to reexamine the proposed Marysville Dam and Reservoir on the Yuba River.

A State/Federal Task Force has been established by Secretary of the Interior Clark and Governor Deukmejian to consider Auburn Dam and Reservoir on the North Fork of the American River. The Task Force will review financial participation, make recommendations concerning partnership arrangements, allocate costs on the basis of benefits to be derived, determine financial capabilities of the beneficiaries, and make recommendations on contractual/organizational mechanisms for completion of the project. A supporting work group has also been established to recommend physical, operational, and financial options to the Task Force. The Task Force will control the scheduling of work on the Auburn Dam studies.

Other developments that may be included if local sponsors demonstrate them to be viable for state participation are

(1) Garden Bar Dam and Reservoir on the Bear River, being studied by the South Sutter Water District and, (2) a multiple-reservoir development proposed by the Cosumnes River Water and Power Authority. These two potential developments are discussed more fully under "Water Purchases" later in this chapter.

Ground Water Storage Programs

DWR has also been studying potential ground water programs to be managed by SWP contractors whose service areas overlay ground water basins. This type of program could be operated by the involved contractors using entitlements and any surplus water that may be available. 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 operating available ground water storage space conjunctively with the SWP, including new off-stream 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.

SWP system operation studies suggest that substantial amounts of 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 portion of the aqueduct costs from transportation to conservation. In order to develop specific, workable programs, there is a continuing need for DWR and the contractors to work together on programs that mutually benefit the SWP and local agencies.

During the past year, the Chino study was completed. Ground water studies of North Santa Clara Valley and the San Bernardino Valley - San Geronio Pass area are continuing. Progress on these

investigations during the past year is summarized in the following sections.

Chino Basin. In early 1980, DWR and MWDC joined together to develop and fund a feasibility study of a ground water storage program in the Chino Basin. The study has been completed and indicates that, using water imported through the California Aqueduct in wet years, over 100,000 acre-feet of additional yield could be developed for use in dry years through a combination of direct recharge, in-lieu recharge using expanded water treatment facilities, and water exchanges.

MWDC is proceeding toward use of the Chino Basin for regional ground water storage within its service area. Before a storage program can be implemented, it will be necessary to develop the legal and institutional arrangements with local authorities and agencies, complete an EIR, and conduct preliminary engineering work. The MWDC Board of Directors has authorized the appropriation of funds to finance these further studies and early implementation of the Chino Basin Ground Water Storage Program.

Santa Clara Valley. In September 1981, DWR and the Santa Clara Valley Water District initiated a study of the North Santa Clara Valley ground water basin. The study is completed and a report will be issued in the fall of 1984. The past year's work emphasized detailed analysis of the geologic, hydrologic, and water supply aspects of a potential ground water storage program, including development of a basin model. If the proposed project has sufficient promise, jointly funded feasibility-level studies may be undertaken.

San Bernardino Valley - San Geronio Pass. DWR, San Bernardino Valley Municipal Water District, and San Geronio Pass Water Agency have entered

into an agreement to jointly fund a study to determine the feasibility of increasing SWP yield through ground water storage programs and water exchanges. During the past year, study effort has been directed toward developing a long-range management plan for meeting local needs. The evaluation of the hydrology and geology of the ground water basins was begun. Existing and proposed local facilities have been inventoried and evaluated, and future demand projections have been completed. The next phase of the investigation will assess the interrelationships between future local operational needs and potential operation of a SWP program within the study area. This study is now scheduled to be completed in 1984-85.

Local Water Supply Projects

In February 1979, DWR issued "Guidelines on Funding Local Water Supply Projects for Inclusion in the State Water Project". In 1982, the guidelines were revised to (1) address the role of the SWP contractors, (2) establish procedures for determining the feasibility of a proposed local water supply project for inclusion in the SWP and, (3) reflect the provisions of a water supply contract amendment that was executed between DWR and the contractors to allow for repayment of construction and operation costs of a local water supply project. On December 30, 1982, the DWR Director approved "Revised Guidelines on Funding Local Water Supply Projects for Inclusion in the State Water Project." This policy statement was developed to serve as a guide to local agencies, water supply contractors, and DWR regarding implementation and inclusion of local projects as units of the SWP. The basic assumptions are as follows:

- o Any necessary SWP contract amendments are executed.

- o 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 SWP or for an interim period.
- o The local project must not adversely affect either the costs or water deliveries to SWP contractors other than the sponsoring contractor.

DWR will conduct a feasibility study of a local project when it appears, from both the conceptual report and the reconnaissance report, that the local project may be designated as a future unit of the SWP. Local projects must be feasible on an engineering and financial basis and must be economically and environmentally sound.

Local projects eligible to be added to the SWP may be financed with available SWP funds. Should the costs of construction of the local project exceed the funds available from the SWP, 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.

Further evaluation of the Guidelines will continue along with the examination of methods of financing future SWP features including local projects, because of recent financial problems associated with availability of Tideland Oil revenues and other funds.

Santa Barbara County. Since the middle of 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 cover eight alternative projects, four of which appear to warrant further investigation.

The first surface storage project to qualify for a feasibility-level investigation was the enlargement of Cachuma

Reservoir on the Santa Ynez River. The alternative project of constructing Hot Springs Dam and Reservoir directly upstream of Cachuma Reservoir may be eligible for a feasibility study if it is later found that enlarging Cachuma Reservoir is not feasible.

After an extensive review in 1982 of the Gibraltar/Camuesa Canyon Project, DWR concluded that enlarging Gibraltar Reservoir as a local project appears to warrant further study at the feasibility level. DWR also concluded that a feasibility-level investigation of constructing Camuesa Canyon Dam and Reservoir should be deferred, pending a decision on the feasibility of enlarging Gibraltar Reservoir.

The Goleta Water Reuse Project, Phase I, was also evaluated (at the feasibility level) and found to be engineeringly feasible, environmentally acceptable, and economically justifiable. A proposal by the City of Santa Barbara (Phase I Reclamation) for landscape irrigation was also found to be eligible for a feasibility-level investigation.

Following these investigations, it was recognized that Santa Barbara County local projects could not be studied independently from the total countywide system. It became apparent that various combinations of local projects and a downsized Coastal Branch should be investigated. Thus, SBCFC&WCD and DWR entered into an agreement in January 1983 to conduct a cooperative study to evaluate the various SWP alternatives available to Santa Barbara County, to provide guidance to DWR as to future plans for the Coastal Branch. This study is scheduled for completion by December 1984.

Stevens Creek. During 1983, DWR initiated review of a reconnaissance report by the Santa Clara Valley Water District for the proposed Stevens Creek Dam Project.

The proposed local project involves remedial construction on the existing Stevens Creek Dam to improve its capability to withstand earthquakes and permit increasing the usable storage capacity from 1,200 to 3,600 acre-feet. According to the District, by using the full capacity of the reservoir and operating it in conjunction with onstream ground water recharge facilities, the annual yield of Stevens Creek Reservoir could be increased by about 1,400 acre-feet per year.

Based on the initial review, the proposal meets the necessary criteria and qualifies as a local project. If DWR's findings on the reconnaissance report are favorable, a feasibility report will be prepared in 1984.

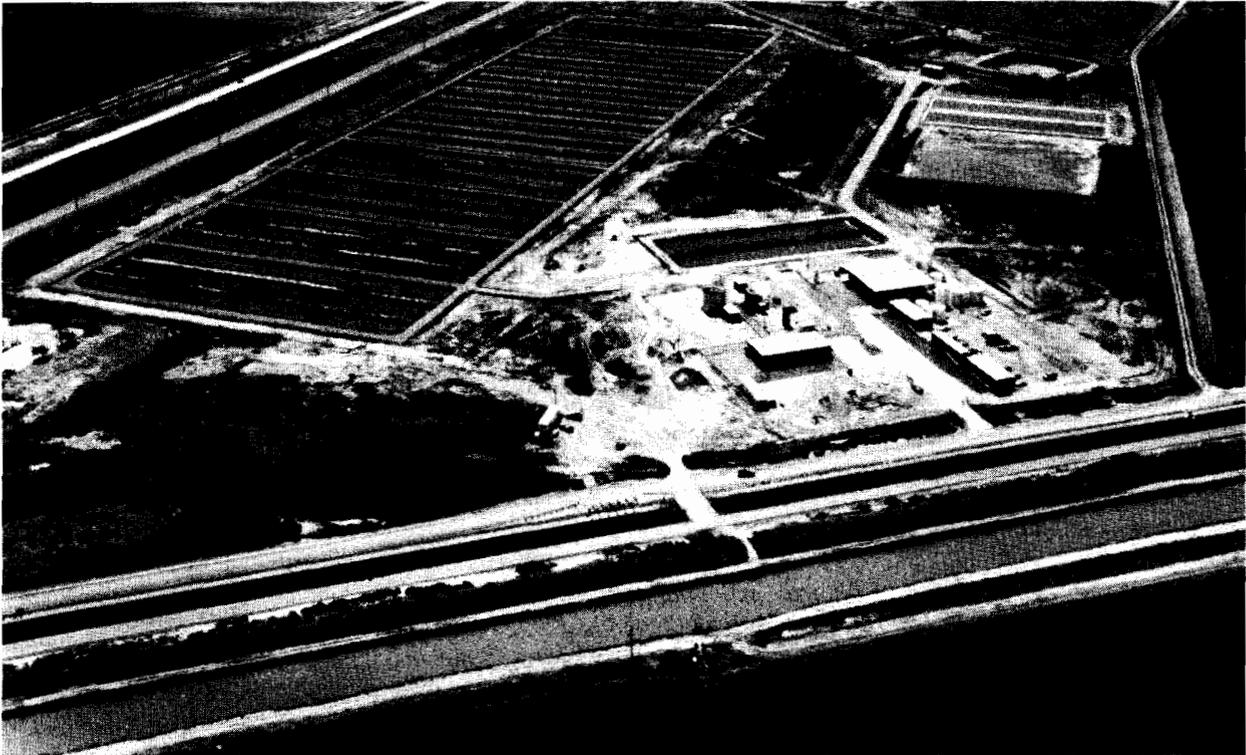
Los Banos Desalting Facility

The feasibility study of reverse-osmosis desalination of agricultural drainage water as a source of supply for the SWP continues. The major feature of this study is the Los Banos

Demonstration Desalting Facility (see photograph).

Construction of the facility is complete. The principal contract (the physical/chemical component) was finished in June 1983, completing work on the water treatment and desalting component of the facility. In late 1983, DWR accepted the solar ponds and associated piping, tanks, and other equipment. With the delivery of the electrodiagnosis and Rankine cycle turbine units in 1984, the solar pond power generating component of the facility will be completed.

The facility began minimal operation in October 1982, with startup of the marshponds. This was followed in July 1983 with initial operation of the chemical clarification and gravity filtration pretreatment systems. A number of design and mechanical problems delayed full operation until December. Since then, the systems have been in stable operation as work proceeds toward developing pretreated water suitable for



Los Banos Desalting Facility (adjacent to San Luis Drain).

introduction to the reverse-osmosis units. Efforts have concentrated on developing the correct clarifier dosages and filter loading parameters to produce a water free of suspended solids and below 10 milligrams per litre in silica.

The biological system operates in parallel and in competition with the chemical clarification system. During the first year of operation, the biological system demonstrated an ability to reduce silica, at times, to 10 percent of the incoming concentration of 25-30 milligrams per litre. Suspended solids removal rates were also good. DWR found that the ponds could be managed to meet variations of turbidity in the San Luis Drain and produce a consistent effluent quality; however, the effluent is still too high in turbidity.

Operations in 1984 will concentrate on maintaining a stable effluent from the marshpond and adding either alum or a polymer to the effluent from the marshponds just before it enters the gravity filters. This technique is known as direct filtration and is being increasingly used in water treatment, including pretreatment of desalting feedwater.

The ion-exchange system for removal of hardness has been operated briefly for the purpose of system checkout, including the automatic control system. The ion-exchange system depends on the desalting units for regeneration brine and will not start full operation until the reverse-osmosis units are in operation. This will occur in mid-1984 once the pretreatment systems are all fully operational and producing desalting unit feedwater of suitable quality.

With delivery of the last equipment for the solar pond component, the ponds will be ready for operation. The first task will be to start placing brine into the ponds, establish the gradient zones, add the heavily saline storage layer at the bottom, and then let them heat up. This process is planned for the spring and summer of 1984, with

both ponds in operation by the end of the year.

Work on the Los Banos 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 sunk costs if repayment contracts are not executed.

Water Purchases

DWR is considering the possibility of purchasing surplus CVP water supply for SWP use. Discussions are continuing with the USBR. A number of issues must be resolved before an agreement can be reached on the purchase; a major effort began in July 1983 to identify and resolve those issues and to determine the net water supply that might be made available.

Several other possibilities for water purchase have come to DWR's attention. The Cosumnes River Water and Power Authority approached DWR for the purpose of entering into discussions of purchase of locally developed water supplies for the SWP. The Authority projected firm yield available for sale as 172,000 acre-feet per year initially, declining to 102,000 acre-feet over a 45-year period. Additionally, some 50,000 acre-feet per year of nonfirm yield was foreseen. Studies by the Authority's consultant are continuing. DWR has agreed to listen to the Authority's proposals and to participate in discussions, but it is not in a position to begin negotiations at this time.

The South Sutter Water District is studying the feasibility of constructing Garden Bar Dam on the Bear River and has retained a consultant to determine the potential project yield. At some time in the future, the District may ask DWR to participate in

financing the project in exchange for water supply to the SWP.

The Wolfson Land and Cattle Company is studying the possibility of constructing a reservoir on Orestimba Creek upstream from the California Aqueduct in Stanislaus County. The plan might include an offer of water supply to the SWP. Discussions with the Company's consultant are continuing.

Water Conveyance Facilities

In addition to seeking means of augmenting SWP water supplies, DWR is pursuing or studying the following additions to SWP conveyance facilities.

North Bay Aqueduct, Phase II

As provided in contracts with Napa and Solano County Flood Control and Water Conservation Districts (NCFC&WCD and SCFC&WCD), DWR is proceeding with plans to construct Phase II of the North Bay Aqueduct. The Phase II facilities will include an intake and pumping plant on Cache Slough, about 23 miles of 63-inch buried pipeline to a new Cordelia Pumping Plant in place of the existing interim facility, and about 2 miles of 42-inch pipeline that will tie into previously constructed Phase I facilities at Cordelia Surge Tank. The interim Cordelia Pumping Plant and discharge line will be retained as standby facilities to continue water deliveries to NCFC&WCD in the event of an outage of Phase II facilities.

The water conservation plans required by the final EIS/EIR for the Phase II facilities have been embodied in amendments to the water supply contracts of both NCFC&WCD and SCFC&WCD. These amendments also include Amended Table A entitlements for both districts to reflect the extended water use buildup due to the conservation efforts.

NCFC&WCD has signed this conservation amendment and it is expected that SCFC&WCD will sign before long.

As stated in Bulletin 132-83, the first reach to be constructed will be from Ledgewood Creek through Suisun Creek, the area where conflicts exist between North Bay Aqueduct construction, the Caltrans Route 12/I-80 bypass construction, and the Fairfield Linear Park. Bid opening for this one-year contract is scheduled for August 1984. The last construction contract, for Cache Slough and Cordelia Pumping Plants, is expected to be completed by January 1987.

San Luis Canal Enlargement

Increases in annual entitlements will eventually necessitate enlarging the State's share of the joint San Luis Division of the California Aqueduct by about 1000 cfs. No modification is anticipated at Dos Amigos Pumping Plant as that facility appears to be large enough to convey water for the enlarged downstream aqueduct sections.

To determine when the enlargement is needed, DWR is studying the capability to meet projected water demands, the relationship to the possible construction of other future facilities, and potential savings in on-peak power costs.

East Branch Enlargement

Increased capacity is needed in the East Branch of the California Aqueduct, primarily to help meet the needs of MWDCS when its entitlements to Colorado River water are reduced. The \$197 million expansion would include 92 miles of canal enlargement, installation of additional barrels at 3 of the 15 inverted siphons between the Alamo Powerplant and Devil Canyon Afterbay, and additional units at Pearblossom Pumping Plant and at Alamo and Devil Canyon Powerplants.

DWR completed a draft EIR on the enlargement in June 1983. Following analysis of comments on the EIR, the proposed plan was modified to provide

for initial enlargement to add 600 cfs of capacity, with provision for further enlargement up to 1200 cfs if needed. The final EIR was completed in April 1984; the Notice of Determination was filed with the Secretary for Resources in May 1984. MWDSC's decision to proceed with the enlargement will be made late in 1984. While that decision is pending, MWDSC agreed to bear the cost of modifying the Pearblossom Pumping Plant forebay during a scheduled 90-day aqueduct outage beginning on October 1, 1984. This will allow future expansion of pumping capacity without the need for an additional extended outage. Enlargement of the East Branch is currently scheduled to begin in 1985 and to be completed in 1991.

East Branch Extension

In 1979, five SWP contractors sponsored a study of extending the East Branch of the California Aqueduct into Upper Coachella Valley. As described in Bulletin 132-81 (page 42), two possible routes were found feasible, but the participating contractors did not reach a decision on routing. Consequently, DWR has taken no further action on the extension.

Any decision may be further delayed as evidenced by further negotiation by MWDSC, Coachella Valley Water District, and Desert Water Agency to extend the term of their exchange agreement from 1990 to 2035. MWDSC is also negotiating with San Geronio Pass Water Agency (SGPWA) to execute an exchange agreement similar to the Desert - Coachella exchange agreement. The SGPWA Board of Directors approved the language of an exchange agreement on September 12, 1983.

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.

Phase II was planned to be constructed later to transport SWP water to San Luis Obispo and Santa Barbara Counties. Phase II would extend approximately 81 miles from Devil's Den Pumping Plant to a terminus near the city of Santa Maria.

The 1963 water supply contracts between the State and Santa Barbara and San Luis Obispo County Flood Control and Water Conservation Districts (SBCFC&WCD and SLOCFC&WCD) stipulate that SWP water deliveries would begin in 1980. These contracts also provide for the deferral or the elimination of the Phase II Coastal Branch if the Districts should so elect. At the request of the Districts, DWR has granted several delays since 1973 in initiating design on the Coastal Branch. The last approved date was July 1, 1984. Under this schedule, initial delivery of SWP water could not begin sooner than the early 1990s. In early 1984, the Districts requested a further two-year delay; DWR currently has this request under consideration.

Following rejection by Santa Barbara County voters in March 1979 of a \$102 million bond issue for the construction of distribution facilities for SWP water, SBCFC&WCD took two actions. First, as described earlier in this chapter, SBCFC&WCD is evaluating local projects that may qualify for SWP funding under DWR guidelines. Second, SBCFC&WCD voted in 1981 to reduce its maximum annual entitlement from 57,700 acre-feet to 45,486 acre-feet and reduce its share of aqueduct capacity by 17 cfs. As described in Chapter III, seven contractors have expressed interest in purchasing all or a portion of the relinquished capacity and entitlement water.

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.

CHAPTER VI

SWP POWER SUPPLY, PRESENT AND FUTURE

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

Power Requirements

Each year, when preparing Statements of Charges to water contractors, DWR develops and assesses short and long-range aqueduct operation studies. These studies are needed to project the amount of electrical capacity and energy required to deliver the SWP contractors' requested entitlement water in future years. The SWP aqueduct operation studies are based on median-year water supply conditions. The projected water deliveries and the electrical energy required to deliver these entitlement requests to the water contractors are shown in Table 15. The energy requirements for each individual pumping plant include appropriate allowances for transmission losses from the primary transmission lines (backbone) to the plant; these depend on the contractual arrangement under which the plant is supplied rather than actual losses. For energy accounting purposes, the combined transmission losses associated with the various SWP power resources are added to the pumping energy requirements shown in the table.

Table 15 does not include energy requirements for delivering surplus water or energy required for existing or possible future power or water exchanges. However, the projected energy requirements are based on predicted aqueduct operations and thus include pumping for recreation water, reservoir and aqueduct losses, and additions to reservoir storage south of the Delta. These factors are generally minor in comparison to entitlement deliveries, but the 1985 energy values in Table 15 reflect additional pumping

to refill Castaic and Silverwood Lakes, which will be drawn down in 1984 in conjunction with work on other facilities.

In addition to energy requirements, DWR must also consider electrical capacity requirements--the maximum demands for electrical power during given periods of time. Since DWR has flexibility in regulating the SWP's electrical power load, the SWP is operated to minimize pumping requirements during on-peak periods, when capacity and energy costs are greatest. Thus, the SWP's maximum electrical capacity requirements occur during off-peak periods (nights, weekends, and holidays). As an illustration of the monthly capacity studies that are made, Table 16 shows the projected SWP on-peak and off-peak capacity requirements for 1990 and 2000 during the months of highest system use. In this particular study, the highest monthly on-peak capacity requirements are projected to occur in the summer, while off-peak capacity requirements are projected to be largest in the spring. The periods of peak demand may change due to future changes in the cost and availability of energy and capacity.

Table 16 displays capacity requirements expected to occur during highest system use in the years 1990 and 2000. The total capacity requirements consist of pumping loads, DWR capacity obligations to Southern California Edison Co. (SCE), and reserve margin requirements taken as 10 percent of the on-peak/off-peak pumping requirements. Under the 1981 DWR-SCE Capacity Exchange Agreement, DWR will provide SCE with 225 MW of on-peak capacity. Under the 1979 DWR-SCE Power Contract, SCE can call upon 485 MW of DWR capacity at any time (350 MW from Hyatt-Thermalito, 15 MW from Alamo, and 120 MW from Devil Canyon). The 350-MW Hyatt-Thermalito

TABLE 15: PROJECTED WATER DELIVERIES AND ENERGY REQUIREMENTS

	Calendar Year			
	1985	1990	1995	2000
Entitlement Requests (Thousands of Acre-Feet)				
Feather River Area	3	4	31	33
North Bay Area	1	28	45	55
South Bay Area	146	171	184	188
San Joaquin Valley Area	1,105	1,355	1,355	1,355
Southern California Area	641 ^(a)	1,714	1,900	2,046
Central Coastal Area	0	0	70	70
Total	1,896	3,272	3,585	3,747
Energy Requirements (Millions of kWh)				
North Bay Aqueduct Plants				
Cache Slough	0	4	8	10
Cordelia	1	4	6	8
South Bay Aqueduct Plants				
South Bay	120	140	150	153
Del Valle	1	1	2	2
California Aqueduct Plants				
Delta	584	982	1,071	1,119
San Luis	31	214	234	267
Dos Amigos	292	438	475	491
Buena Vista	309	511	556	588
Wheeler Ridge	319	561	617	655
Wind Gap	654	1,176	1,296	1,379
A.D. Edmonston	2,204	3,959	4,383	4,673
East Branch Plant				
Pearblossom	252	831	518	497
West Branch Plant				
Oso	168	154	329	370
Coastal Branch Plants				
Las Perillas	12	12	17	17
Badger Hill	31	30	44	44
Devil's Den ^(b)	0	0	44	44
Sawtooth ^(b)	0	0	35	35
Polonio ^(b)	0	0	93	93
Total SWP Pumping Requirements	4,978	9,017	9,878	10,445
Transmission Losses from Power Sources	317	333	347	345
Total	5,295	9,350	10,225	10,790

- a) Reflects MWDSC's reduced 1985 entitlement request of 544,011 acre-feet.
b) Construction of these plants is under review; see Chapter V.

**TABLE 16: PROJECTED ELECTRICAL
CAPACITY REQUIREMENTS**

Pumping Plant	Average Capacity Load During Month of Highest System Use (MW)			
	1990		2000	
	On-Peak	Off-Peak	On-Peak	Off-Peak
North Bay Aqueduct				
Cache Slough	1	1	1	1
Cordelia	1	1	1	1
South Bay Aqueduct				
South Bay	19	18	19	18
Del Valle	(a)	(a)	(a)	(a)
California Aqueduct				
Delta	1	250	1	250
San Luis	0	107	0	146
Dos Amigos	78	49	79	50
Buena Vista	63	82	69	88
Wheeler Ridge	60	97	78	105
Wind Gap	118	223	156	223
A.D. Edmonston	345	746	516	746
East Branch				
Pearblossom	84	119	17	119
West Branch				
Oso	(a)	41	44	62
Coastal Branch				
Las Perillas	3	2	3	3
Badger Hill	8	4	8	6
Devil's Den ^(b)	-	-	6	6
Sawtooth ^(b)	-	-	5	5
Polonio ^(b)	-	-	12	12
Total Pumping Requirements	781	1,740	1,015	1,841
Reserve Margin (10 percent)	78	174	102	184
Capacity Obligation to SCE ^(c)	710	135	710	135
Total Capacity Requirements	1,569	2,049	1,827	2,160

a) Less than 0.5 MW.

b) Construction of these plants is under review; see Chapter V.

c) Does not include 350 MW contractual obligation associated with Hyatt-Thermalito generation during off-peak periods (see text).

contractual obligation is not shown as an expected off-peak demand; it is not anticipated that SCE will need such off-peak capacity for significant periods of time, due to lower off-peak demands and minimum load concerns associated with other SCE capacity resources.

SWP power requirements can vary significantly depending on the balance of water supply and water demand in a given year. Dry conditions in Northern California reduce the supply of water available for delivery and decrease power requirements if the SWP cannot deliver full entitlement requests. Power requirements also decrease if hydrologic conditions or actions by local water agencies reduce demands in the San Joaquin Valley or Southern California. In general, SWP power requirements would be larger than projected only if water demands increased in Southern California and there were sufficient water supplies in Northern California available for delivery.

Power Resources

Prior to the March 31, 1983 termination of its principal power supply contracts, DWR developed a long-range program to meet SWP power needs. The basic goals of that program are as follows:

- o to obtain adequate, reliable, competitively-priced power supplies and transmission service so that the SWP will be energy self-sufficient and can be operated as an independent and interconnected utility;
- o to develop and manage these power resources to minimize costs to SWP contractors and to maximize benefits to the people of California;
- o to minimize the impact on the SWP in 2004 when the majority of present contractual arrangements expire.

A key strategy of DWR's power supply program is to restructure the use of existing SWP resources for maximum benefit to the SWP and reduce dependence on utilities that may be dependent on costly fuel oil and natural gas for a major portion of their power generation. This has led to construction and acquisition of hydro, coal, geothermal, and purchased power resources. Figure 14 shows the SWP power facilities that are currently in operation or under construction. These, and other power resources available to the SWP, are described in the following sections.

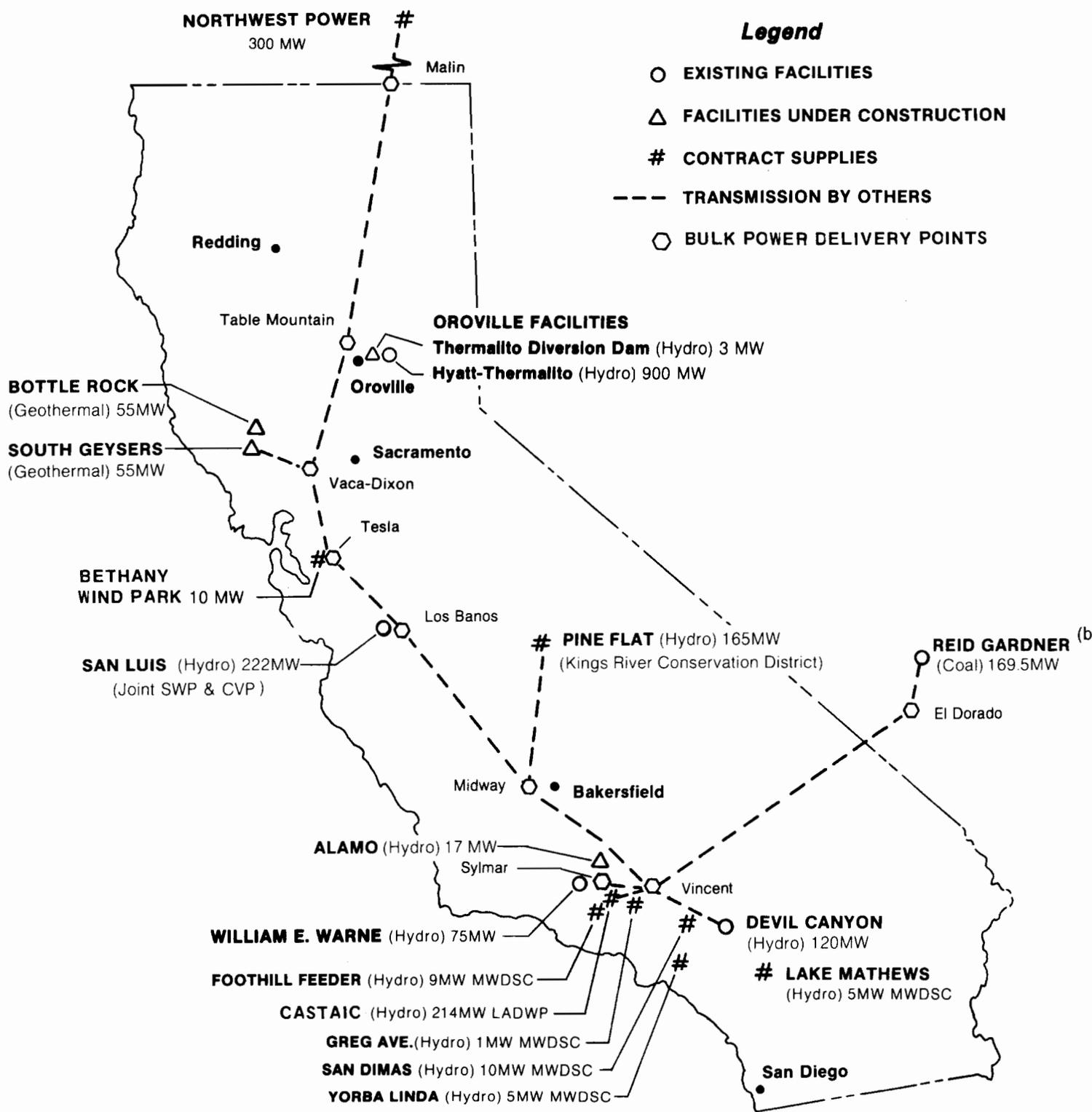
Hydro

Economical hydroelectric generation provides the largest share of the SWP power resources. The 900 MW at Hyatt-Thermalito supply about 2.3 billion kWh in a median water supply year. Generation at the existing SWP power recovery plants (San Luis, Devil Canyon, Warne, and Castaic) varies with water conveyance; in general, the combined 631 MW at these four plants will be able to recover about one-fourth of the total energy used for SWP pumping.

Two additional hydroelectric facilities are under construction. The Alamo Powerplant, a 17-MW recovery plant, is approximately 70 percent complete and is expected to be commercially operable in September 1985. The Thermalito Diversion Dam Powerplant, a 3-MW facility, is scheduled for ground breaking in the fall of 1984 and is expected to be on-line in early 1987. Current SWP power studies also 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 V, completion of the Coastal Branch is under review.

Under the terms of the power contract and the capacity exchange agreement with SCE, part of the Hyatt-Thermalito

FIGURE 14: SWP POWER FACILITIES ^(a)



NOTES:

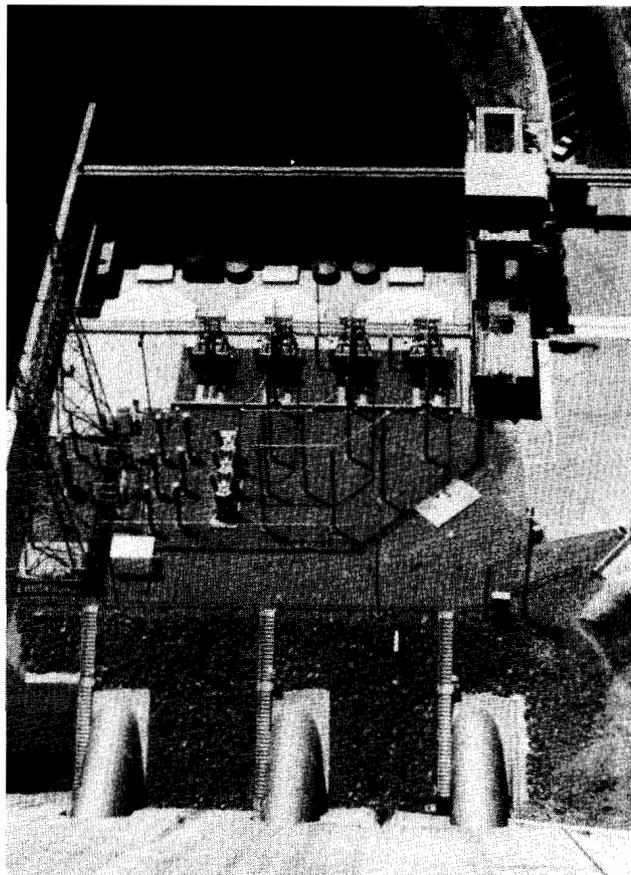
- a) Power exchange and transmission services provided by Pacific Gas and Electric Co., Southern California Edison Co., San Diego Gas and Electric Co., and Los Angeles Department of Water and Power.
- b) SWP owns a 169.5-MW share of Reid Gardner Unit No. 4, but under agreement with Nevada Power Company, receives up to 226 MW on an interruptible basis.

energy and all of the output of Devil Canyon and Alamo Powerplants will be delivered to SCE. In return, SCE is to deliver a greater amount of energy (off-peak) to SWP pumping plants. For energy accounting purposes in this bulletin, all of the output of the Hyatt-Thermalito, Devil Canyon, and Alamo facilities is included as a part of the basic SWP resources; the net additional energy furnished by SCE is treated separately (see following discussion of "Exchanges").

Over the past year, DWR has been reanalyzing several other potential small hydro developments. On the basis of these studies, DWR has decided not to proceed with the Sutter-Butte, Thermalito Afterbay, Castaic Outlet, Pyramid Outlet, or Lake Isabella Powerplants. Studies showed that the cost of energy from these facilities would be considerably higher than from other resources available and that the annual distribution of generation from these facilities would not meet near-term needs. In addition, Mojave Siphon Powerplant has been deferred, while DWR conducts additional studies of the economic feasibility of the Phase I facilities; Phase II (a second generating unit) depends on enlargement of the East Branch of the California Aqueduct and will be reexamined if it is decided to proceed with the enlargement.

DWR has also purchased hydro generation developed by other entities. For example, DWR has purchased the output of the 165-MW Pine Flat Powerplant from the Kings River Conservation District. This facility is comprised of three 55-MW turbine-generating units, the last of which became commercially operable on April 1, 1984. Pine Flat Powerplant will provide approximately 420 million kWh annually to the SWP.

DWR also has contracted for the output from five small hydroelectric facilities owned and operated by



Pine Flat Powerplant

MWDSC. By contract with SCE, the energy from four of these facilities is delivered to SCE for its use, with exchange energy later returned to SWP during off-peak periods. DWR recently executed a contract with the Los Angeles Department of Water and Power (LADWP) that allows use of the energy from MWDSC's fifth small hydro facility for operation of the SWP. Under this agreement, DWR will make the electrical energy from the facility available to LADWP, and LADWP will later return it off-peak to DWR. Combined, the five MWDSC facilities are rated at 29.5 MW and provide approximately 2 to 3 percent of the total SWP pumping energy requirement.

Exchanges

Another major SWP power resource results from the 1979 Power Contract and the 1981 Capacity Exchange Agreement with SCE. Under these arrangements, SWP capacity and energy are made available to SCE in exchange for off-peak capacity and energy from SCE's resources. The additional energy provided to the SWP through these transactions will be about 1.0 to 1.2 billion kWh annually. The net energy gained through exchange with SCE exchange will provide about 10 to 13 percent of the total pumping energy required for SWP entitlement deliveries in the late 1980s and 1990s.

DWR also has executed energy interchange agreements with six utilities in Southern California and Arizona. 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 25 to 30 years. Negotiations for interchange agreements are currently underway with ten additional utilities.

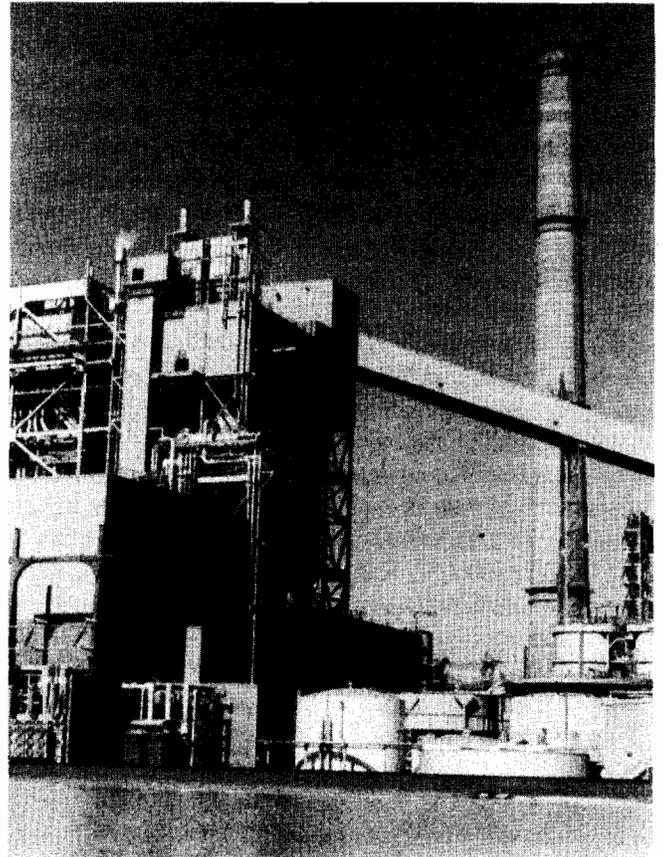
Coal

DWR is joint owner of a coal-fired facility with Nevada Power Company (NPC), from which it began receiving energy in July 1983. The Reid Gardner station is located east of Las Vegas. Units 1, 2, and 3, with a combined capacity of 330 MW, are owned exclusively by NPC. 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 during off-peak periods. The scheduling of energy to the SWP depends

on 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 each year.

Geothermal

Significant progress was made in the construction of DWR's two 55-MW geothermal power plants in the Geysers area. The Bottle Rock Powerplant, in Lake County, will be the first geothermal power plant to be added to the SWP system. DWR will operate and maintain it upon commercial operation. Geothermal steam for the power plant will be provided under a contract with MCR Geothermal and others. Bottle Rock is scheduled to begin commercial operation in January 1985.



Reid Gardner Unit No. 4

DWR's second geothermal facility is the South Geysers Powerplant in Sonoma County. Geothermal steam to operate this plant will be provided under contract with Geothermal Kinetics, Inc., and TransCanada Pipelines Limited. On completion, DWR will operate and maintain the facility. South Geysers is scheduled to begin commercial operation in June 1986.

Wind

DWR has a power purchase agreement with TERA Corporation to supply wind-generated electrical energy from the Bethany Wind Park to South Bay Pumping Plant near Tracy. At the end of 1983, TERA had sixty 50-kW wind turbine generators and had delivered about 3 million kWh to DWR. When the Bethany Wind Park is completed, TERA will have about 200 wind turbines (10 MW total) in operation.

DWR also owned and operated a 50-kW demonstration wind turbine at Romero Overlook near San Luis Reservoir. As planned, the Romero facility was operated over a 3-year period. It was decommissioned on January 1, 1984 and will be sold.

Purchases

Power purchases are an important component of DWR's resource program in addition to committed SWP resources. To make optimum use of all resources and to obtain economical power, DWR is party to various power contracts with utilities. DWR currently has contracts to purchase power from SCE, Bonneville Power Administration (BPA), British Columbia Hydro and Power Authority, and Pacific Power & Light Company (PP&L). DWR has also signed agreements with Portland General Electric Company (PGE) and PP&L for short-term purchases of energy. Table 17 summarizes the major long-term SWP power contracts.

DWR also currently has short-term agreements in effect with NPC, LADWP, and

others for purchase of economy energy for SWP operation. Most of the current agreements expire in the last half of 1984 but others will be negotiated as needed.

Other Resources

In addition to the resources described in the preceding paragraphs, other resources have been considered or are currently being considered as potential additions to DWR's Resource Plan. These resources are evaluated on the basis of such factors as ability to meet anticipated power requirements, alternative cost, environmental impacts, operating characteristics, etc. Based on the results of these evaluations, a resource may be recommended for inclusion in DWR's Resource Plan.

Resources currently being evaluated are: hydroelectric plants on the San Bernardino Valley Municipal Water District water system; additional units at San Luis, Devil Canyon, and Warne Powerplants; and a second power plant at Oroville Dam.

DWR is a party to the Heber Binary Geothermal Demonstration Project, which is being constructed by the San Diego Gas and Electric Co. Disposition of DWR's share of the power from this project is under study.

DWR has a 25 percent interest in the South Brawley Geothermal Project. Because of the estimated high cost of power, DWR decided not to proceed further with the project. Disposition of DWR's interest is under negotiation.

DWR owns a Federal Geothermal Leasehold located in Lake County (the Binkley Leasehold). Negotiations are underway with a steam supplier to develop the leasehold independently, with appropriate compensation to DWR.

TABLE 17: SUMMARY OF MAJOR SWP POWER CONTRACTS

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 Co.	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	Last repayment 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 in capacity	At least to 4/1/08
6. San Diego Gas and Electric EHV Settlement (5/25/78)	San Diego Gas and Electric Co.	Establishes extent of SDG&E's obligation to supply off-peak energy during the remaining term of the EHV contract, and resolves disputes concerning DWR's use 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 Co.	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 Co.	Provides for transmission service between Reid Gardner and SCE's service area	7/26/13
10. Edison-DWR 1979 (10/11/79)	Southern California Edison Co.	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. Southern California Edison Agreement for Emergency Services (7/21/80)	Southern California Edison Co.	Emergency service between the parties	12/31/04
13. Capacity Exchange Agreement (9/17/81)	Southern California Edison Co.	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 Co.	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 Co.	Up to 1465 MW of firm energy transmission service in PG&E's service areas effective 4/1/83	12/31/04 with option for 10-year extension
17. Generation Replacement Agreement (6/14/82)	Southern California Edison Co.	Provides energy from DWR generating resources to replace lost generation of two SCE plants on San Bernardino's water distribution 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 (11/5/82)	Pacific Power and Light Co.	Purchase of 200 MW firm capacity and energy beginning 4/1/83	3/31/85 (may be extended one year)
20. Power Sale Agreement (11/5/82)	Portland General Electric Co.	Purchase of 100 MW capacity and energy beginning 4/1/83	3/31/86
21. Power Sale Agreement (5/14/82)	TERA Corporation	Sale of energy to DWR from wind generating facilities being constructed by TERA	5/3/02
22. Southern California Edison EHV Settlement Agreement/Pacific Gas and Electric EHV Settlement Agreement (12/31/82)	Southern California Edison Co./Pacific Gas and Electric Co.	Establishes the extent of DWR's ability to utilize its rights to 300 MW of EHV transmission from the Pacific Northwest. PG&E Agreement also defines the rate for EHV off-peak energy purchases	12/31/04 and 1/1/05, respectively
23. Interchange Agreement (6/29/83)	San Diego Gas and Electric Co.	Provides for energy exchanges between SDG&E and DWR	7/31/10
24. 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 termination by either party upon two year advance written notice
25. Edison-DWR Interruptible Transmission Service Agreement (9/6/83)	Southern California Edison Co.	Provides DWR with interruptible transmission service between Vincent Substation and San Onofre Generating Station and between Vincent and Sylmar Substations	12/31/04
26. Coordination Agreement between SCE and DWR (10/8/83)	Southern California Edison Co.	Provides for 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

Transmission Service

DWR must also make arrangements for transmission service between SWP resources and loads. At the present time, 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. In this connection, DWR has been and will continue to participate in studies to:

- o develop new transmission interties from the Oregon-California border to Southern California;

- o develop alternative transmission paths between DWR resources and loads in order to achieve a greater degree of operating flexibility.

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 and Tesla Substations is complete. This interconnection permits DWR to send up to 270 MW from Hyatt Units Nos. 1 and 2 over WAPA's transmission line to Tesla



Switchyard at Edward Hyatt Powerplant

Substation. This action was necessary to prevent extensive curtailments of firm Hyatt-Thermalito power. DWR is also evaluating, in conjunction with WAPA, the feasibility of a permanent interconnection, which would greatly increase flexibility.

DWR has contracted 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 through 2004. DWR plans to retain its entire 300-MW share of this EHV transmission capacity in order to maintain access to Northwest power markets, where potential purchases of less expensive power and exchanges could result in significant savings for the SWP.

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 transmission line. Under this agreement, DWR will begin making payment for its share of the transmission line. The agreement preserves DWR's right for co-tenancy of the line; it also contains the principles for the co-tenancy agreement, which DWR agreed to complete by November 1, 1984.

The 1982 PGandE EHV Settlement Agreement obligated DWR to purchase 75 percent of the Stub Transmission Line (Midway to Wheeler Ridge line), which serves Buena Vista, Wheeler Ridge, and 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 is expected to be signed by September 1, 1984. Ownership of the Stub Transmission Line will result in less costly and more reliable transmission service for DWR.

Through the Western Systems Coordinating Council, DWR has also been monitoring studies being conducted by BPA, PGandE, PP&L, and SCE to upgrade the existing Pacific Northwest Intertie to 3200 MW. The results of an initial study were published in September 1983. DWR is also participating in long-range studies being conducted by the Pacific Northwest and California utilities for development of a third 500-kV intertie or a secondary upgrade of the direct current line. Based on study recommendations, DWR will be developing its own plan of action for participation in the new intertie and/or upgrade.

Sales

DWR also has entered into agreements for short-term energy 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 many factors including wet weather, reduced demands for water deliveries in a given year, or an abundance of hydro energy available from DWR facilities. In 1984, DWR executed the following agreements:

- o Agreements with Cities of Azusa, Banning, and Colton for the short-term sale of energy from Reid Gardner Unit No. 4. These agreements are in addition to similar agreements with three other Southern California cities executed in 1983. The agreements provide DWR with flexibility in marketing surplus Reid Gardner energy while retaining the right to sell to other parties at higher prices.
- o Power Sales Agreements with Cities of Pasadena, Glendale, and Burbank providing for the sale of firm and nonfirm energy totaling a maximum of 446 million kWh. These agreements terminate April 30, 1985.

- o Letter Agreement with SCE, for the sale of 6 million kWh per day (Monday-Saturday) of firm energy at rates of delivery up to 400 MW. This letter agreement, established under the 1979 Power Contract with SCE, terminates December 29, 1984.

Negotiations are continuing with Pacific Northwest utilities to develop long-term arrangements for purchases, sales, and exchanges to optimize the use of DWR's 300-MW Intertie transmission capacity for meeting SWP capacity and energy requirements. DWR intends to use this transmission capacity to the maximum extent possible to reduce SWP costs. Power will be purchased for direct SWP use, as well as for resale.

Comparison of Power Requirements and Resources

Figure 15 compares the energy resources expected to be available to the SWP with the projected annual SWP energy requirements for the remainder of the century. The projected energy requirements shown include total SWP pumping requirements and transmission losses from power sources, as illustrated in Table 15. The projected energy resource outputs shown in Figure 15 include allowances for scheduled maintenance and forced outages. The resources also include net off-peak energy provided by SCE in exchange for SWP on-peak 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 transmission capacity that the SWP has on the Pacific Northwest Intertie.

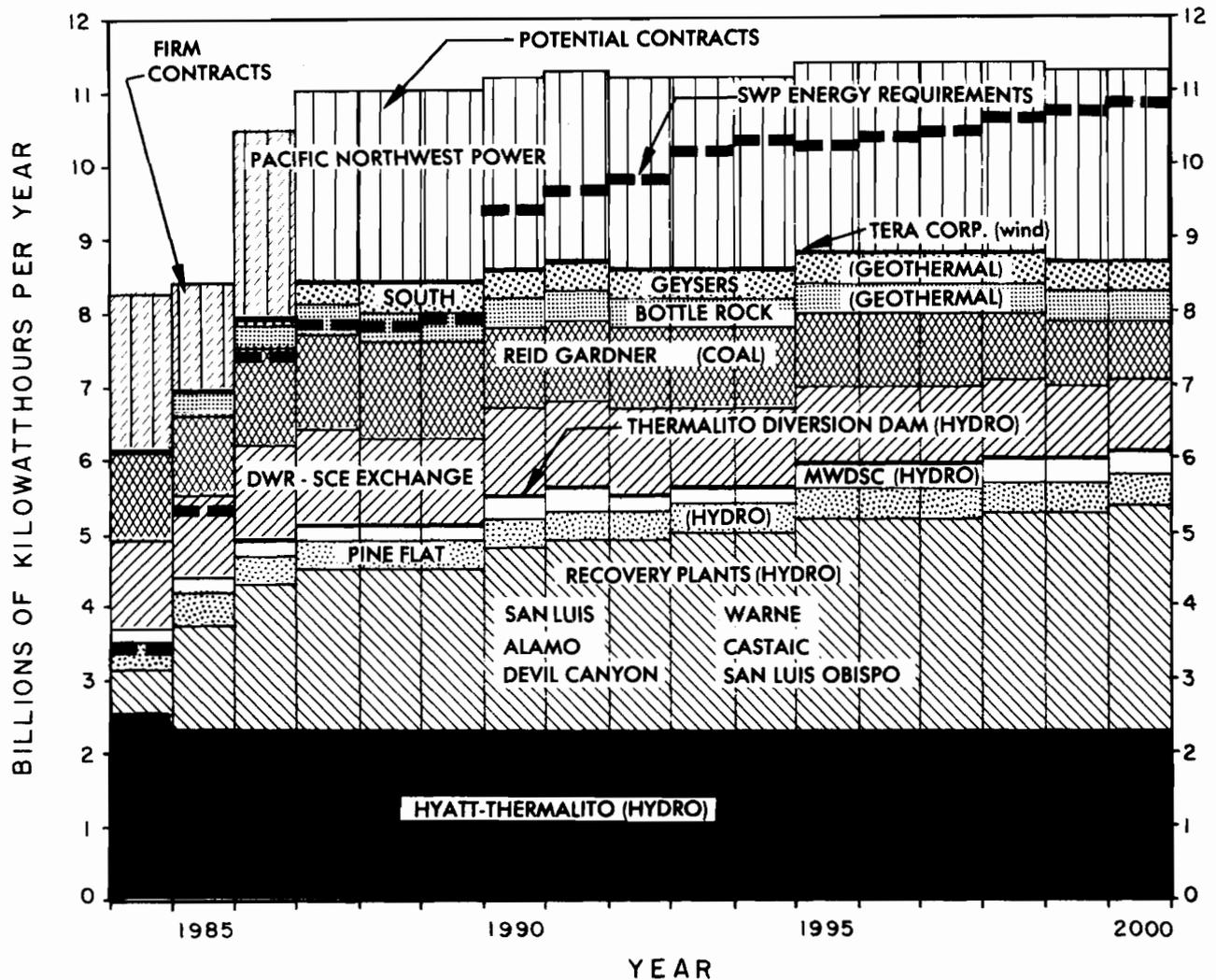
Figure 16 shows a monthly comparison of energy resources and requirements for 1985, 1990, 1995, and 2000. This figure allows more detailed analysis of the annual data shown in Figure 15. It

indicates that resources and requirements are projected to be in reasonable balance during the more critical months of each year (even though total energy resources may exceed total requirements by a significant margin when viewed on an annual basis).

The projected SWP on-peak and off-peak monthly capacity requirements and the SWP resources planned to meet these loads for the years 1990 and 2000 are shown in Figure 17. As shown in Table 16, both the on-peak and off-peak capacity requirements in Figure 17 include a reserve margin allowance equal to 10 percent of the on-peak/off-peak pumping requirement; they also include allowances for capacity commitments to SCE under the DWR-SCE Power Contract and the DWR-SCE Capacity Exchange Agreement. However, as previously noted, the 350 MW of capacity commitment to SCE is included only in the on-peak requirements in Figure 17; it is anticipated that SCE will have little or no demand for this capacity during off-peak periods.

The indicated on-peak capacity resources in Figure 17 do not include any on-peak capacity from Reid Gardner Unit No. 4 because the contract 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 17 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 contract with NPC requires advance notice for use of capacity, which will give DWR adequate time to adjust loads and other resources.

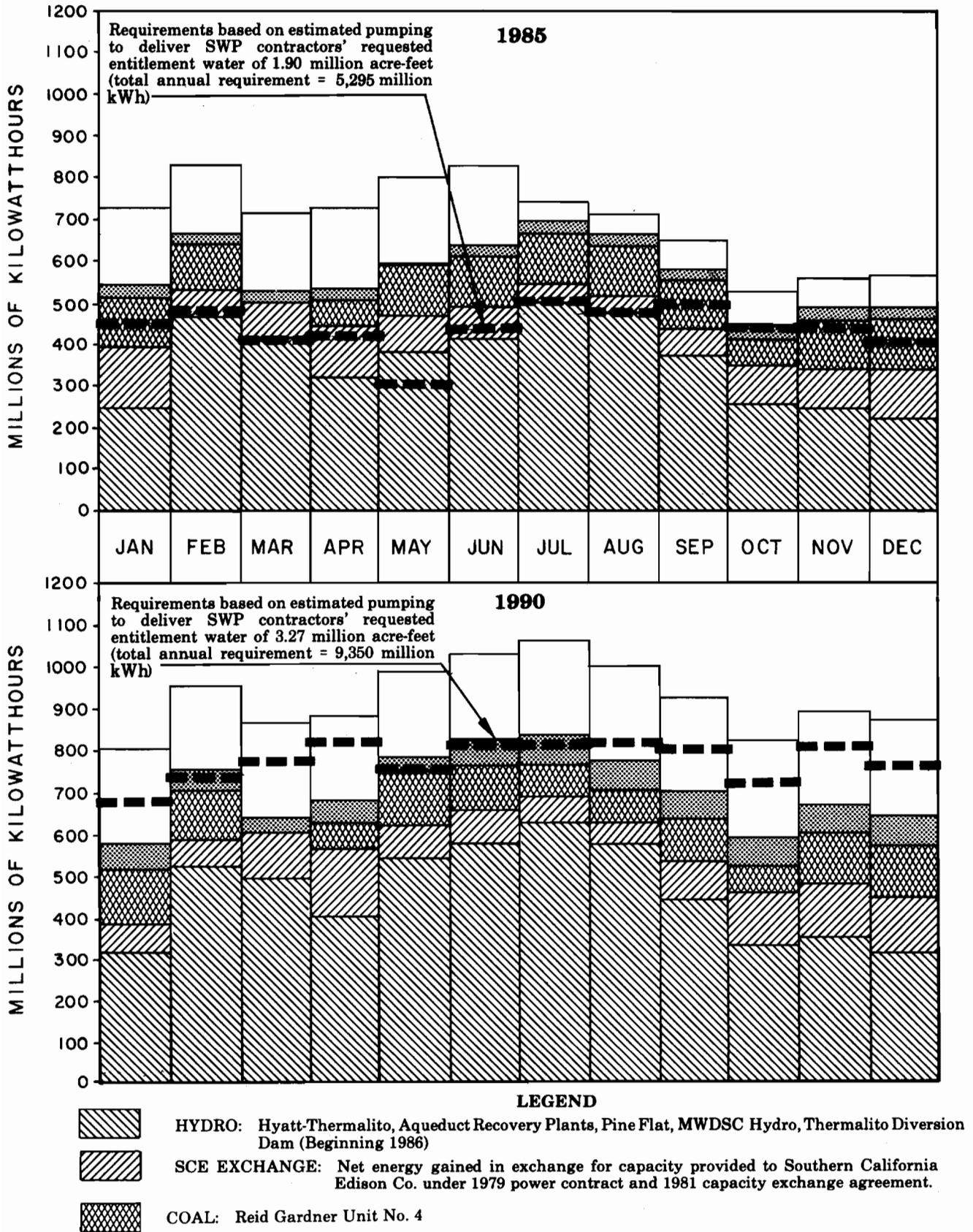
FIGURE 15: ANNUAL SWP ENERGY REQUIREMENTS AND RESOURCES



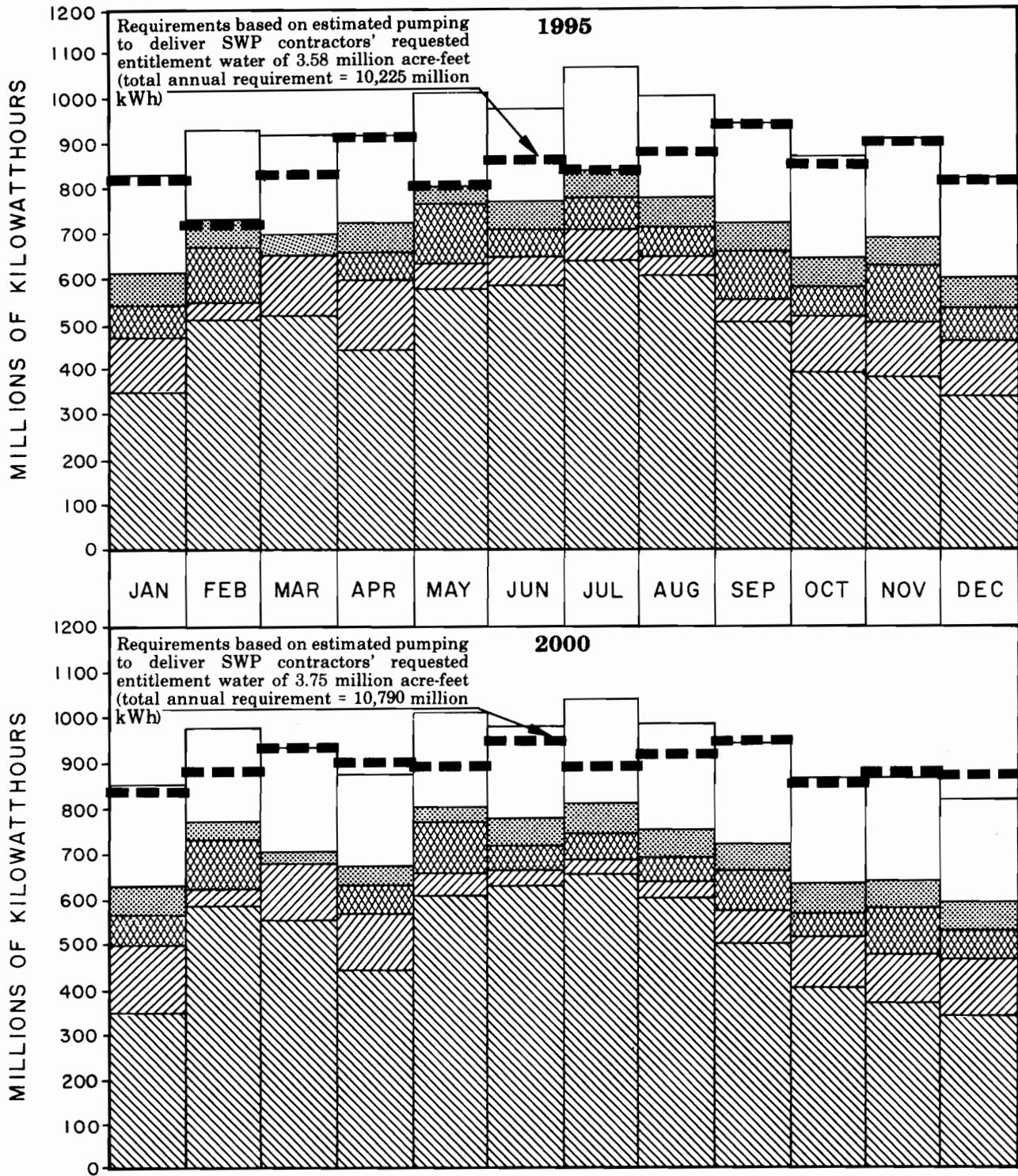
SWP energy requirements are based on delivery of contractors' requested entitlement water under median statewide water supply conditions and include all system transmission losses. Placement of resources in the Figure does not indicate a priority of use or need. Identified resources are:

	<u>2000 Supply</u> (billions of kWh)
1. Hyatt-Thermalito	2.30
2. Recovery Plants (six Aqueduct energy recovery plants)	3.05
3. Pine Flat (purchase under contract from Kings River Conservation District)	0.42
4. MWDSC Hydro (output of five small hydro plants on MWDSC distribution system, purchase under contract)	0.25
5. Thermalito Diversion Dam (SWP hydro plant ; operational in 1987)	0.02
6. DWR-SCE Exchange (net energy gained from Southern California Edison Co. under 1979 DWR-SCE Power Contract and 1981 Capacity Exchange Agreement)	1.04
7. Reid Gardner (SWP share under 1979 agreement with Nevada Power Company)	0.82
8. Bottle Rock (SWP geothermal plant, operational in 1985)	0.35
9. South Geysers (SWP geothermal plant, operational in 1986)	0.35
10. Wind (purchase under contract with TERA Corporation)	0.02
11. Pacific Northwest Power (existing and potential purchases from utilities in the Pacific Northwest to be imported via 300 MW of transmission capacity already contracted.)	<u>2.56</u>
Totals	11.18

FIGURE 16: MONTHLY ENERGY



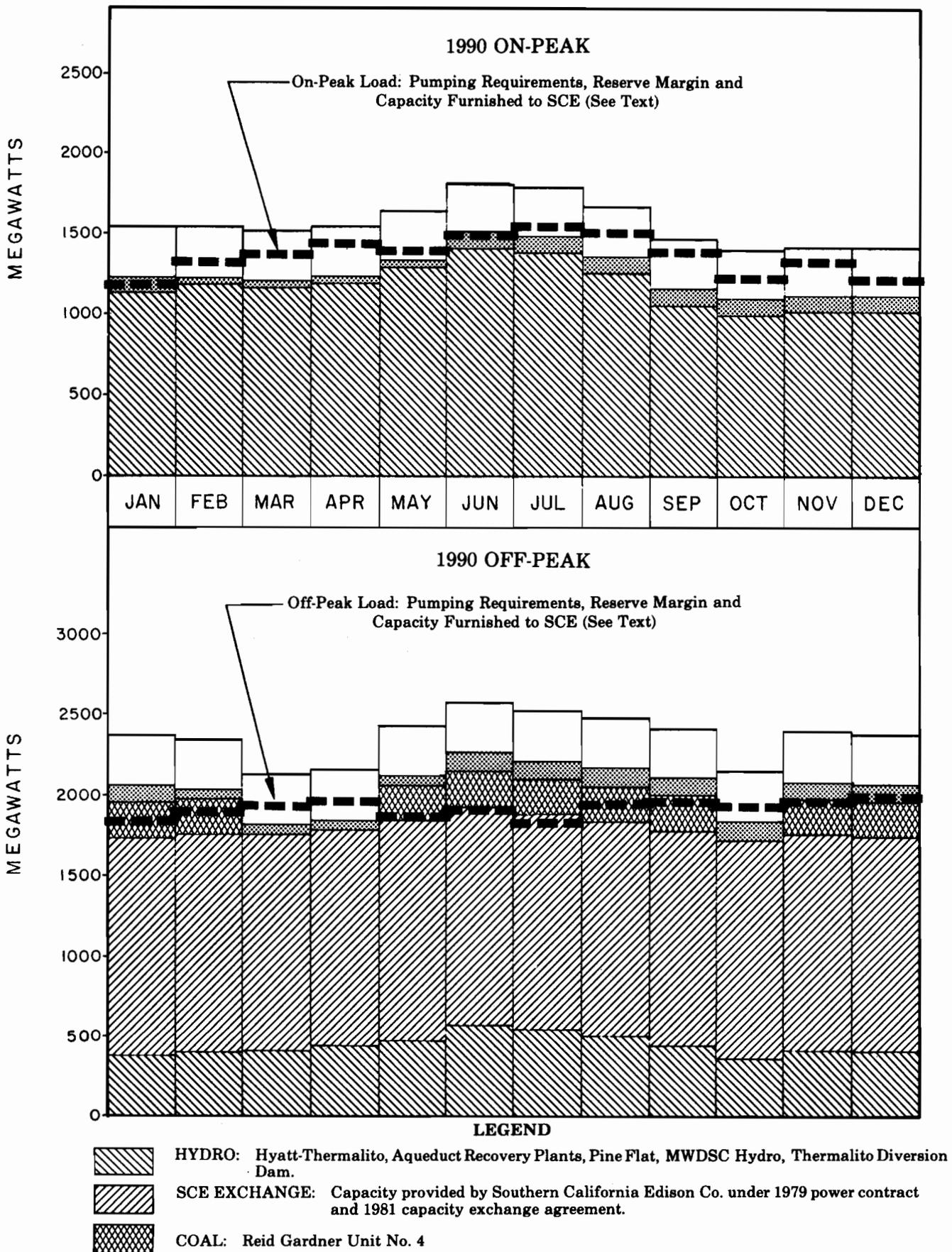
REQUIREMENTS AND RESOURCES



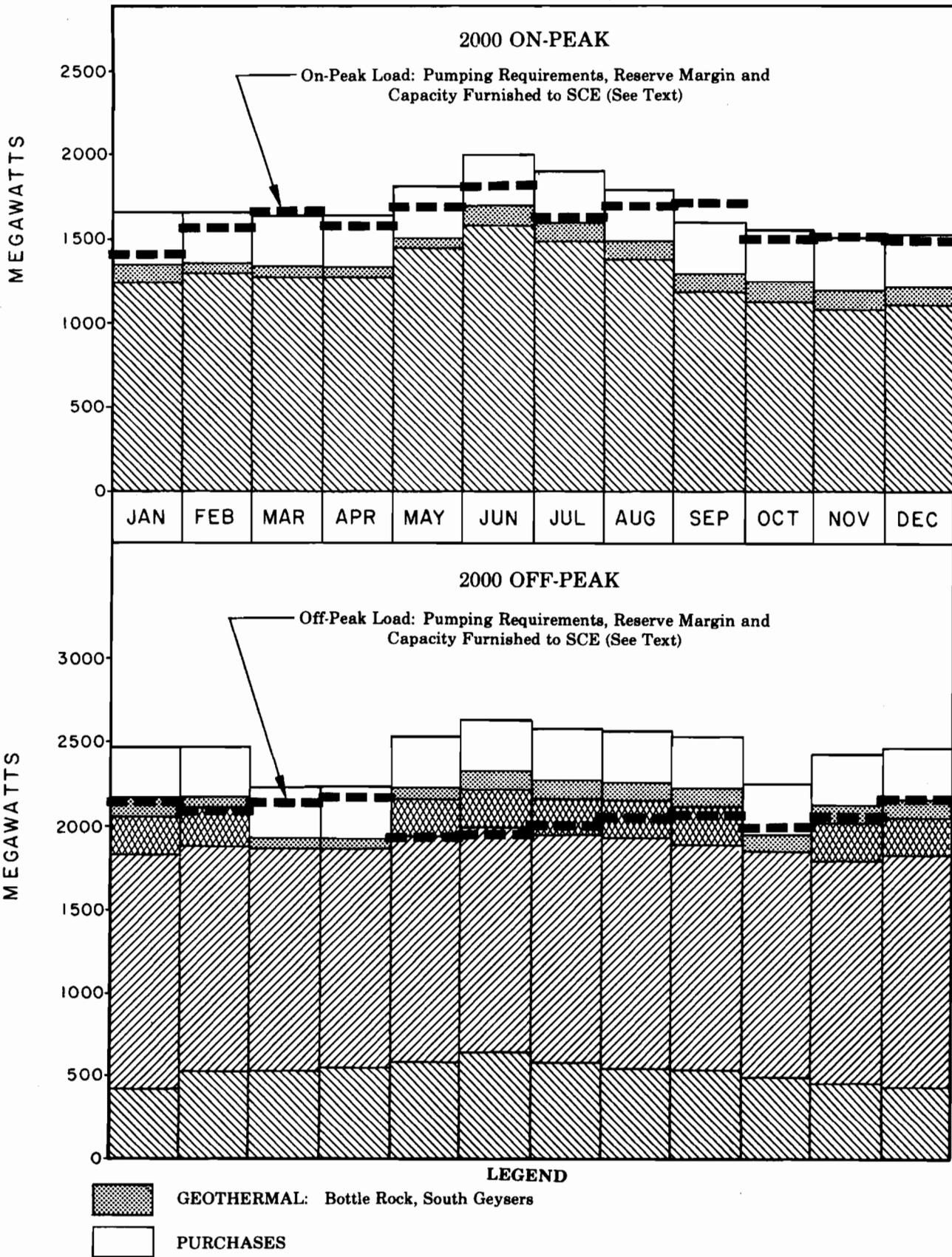
- LEGEND**
-  GEOTHERMAL: Bottle Rock, South Geysers (Beginning 1986)
 -  PURCHASES (including wind energy)

NOTE: Placement of Resources in figure does not indicate a priority of use or need.

FIGURE 17: ON-PEAK AND OFF-PEAK



CAPACITY LOADS AND RESOURCES



NOTE: Placement of Resources in figure does not indicate a priority of use or need.

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 development of 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 for 1984 and projections for five-year intervals from 1985 through 2000. The energy supplies shown are based on average water supply conditions. The SWP total energy requirements, taken from Table 15, represent the pumping energy requirements, plus the transmission losses associated with the various SWP power resources. The pumping energy requirements include pumping 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 center section of Table 18 shows the percentage distribution of total SWP energy resources.

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 132-83 were revised to reflect the most recent cost and financing information.

The principal changes in unit energy costs from Bulletin 132-83 are those for Alamo and Reid Gardner Power Plants, those for purchases of power from the Pacific Northwest, and those for sales of surplus energy. The Alamo estimates are significantly higher, reflecting increased construction cost, higher projected operation and maintenance costs, and reduced estimates of future energy output. Projected unit costs for energy from Reid Gardner Unit No. 4 are also larger than shown previously, because of increases in expected costs for fuel and for operation and maintenance.

Changes in the average unit cost of energy purchased from the Pacific Northwest reflect minor revisions in estimated future capacity charges. The average unit costs of Pacific Northwest power include both capacity and energy charges, although the energy component is shown separately. The capacity charge is fixed, regardless of the amount of energy purchased. The unit costs shown in Table 18 are calculated by dividing the sum of annual capacity and energy charges by the total amount of Pacific Northwest energy assumed to be purchased. The Pacific Northwest unit costs are escalated to follow economic trends for energy costs and assumed future increases in capacity charges. Comparing Pacific Northwest purchases in 1984 and 1985 shows that the total unit cost increases while the energy component decreases. The total unit cost increases due to a decrease in energy purchases in 1985 while capacity charges remain fixed. The energy component decreases because the 1985 lower purchase demand allows more selectivity among Pacific Northwest energy sources to minimize costs.

The composite resource costs shown in Table 18 represent the weighted average unit cost of all SWP energy from the listed sources. Projected values for sales of surplus energy are lower than the Bulletin 132-83 values, which were assumed to be equal to the capacity and energy price of Pacific Northwest pur-

TABLE 18: PROJECTED ENERGY RESOURCES AND COSTS

	CALENDAR YEAR				
	1984	1985	1990	1995	2000
ENERGY RESOURCES (millions of kWh)					
Hyatt-Thermalito	2,523	2,304	2,304	2,304	2,304
Project Recovery Plants					
San Luis	95	104	161	169	187
Alamo	0	14	137	97	95
Devil Canyon	383	391	1,324	793	772
W. E. Warne	66	343	327	640	665
Castaic	99	563	538	1,149	1,286
San Luis Obispo	0	0	0	47	47
Pine Flat	367	423	423	423	423
MWDC Hydro	172	208	251	261	246
Thermalito Diversion Dam	0	0	17	17	17
SCE Exchange ^(a)	1,224	1,056	1,203	1,107	1,035
Reid Gardner Unit No. 4	1,175	1,188	1,117	956	815
Bottle Rock	0	316	346	361	346
South Geysers	0	0	346	361	346
TERA Corp. (Wind)	2	21	21	21	21
Potential Pacific Northwest Purchase	2,125	1,512	2,562	2,562	2,562
Resource Total	8,231	8,443	11,077	11,268	11,167
SWP Energy Requirement ^(b)	3,438	5,295	9,350	10,225	10,790
Surplus Energy for Sale	4,793	3,148	1,727	1,043	377
PERCENTAGE OF TOTAL RESOURCES					
Hyatt-Thermalito	30.65	27.29	20.80	20.44	20.63
Project Recovery Plants					
San Luis	1.16	1.23	1.45	1.50	1.67
Alamo	0.00	0.17	1.23	0.86	0.85
Devil Canyon	4.65	4.63	11.95	7.04	6.91
W. E. Warne	0.80	4.06	2.95	5.68	5.96
Castaic	1.20	6.67	4.86	10.19	11.52
San Luis Obispo	0.00	0.00	0.00	0.42	0.42
Pine Flat	4.46	5.01	3.82	3.75	3.79
MWDC Hydro	2.09	2.46	2.27	2.32	2.20
Thermalito Diversion Dam	0.00	0.00	0.15	0.15	0.15
SCE Exchange	14.87	12.51	10.86	9.82	9.27
Reid Gardner Unit No. 4	14.28	14.07	10.09	8.48	7.30
Bottle Rock	0.00	3.74	3.12	3.20	3.10
South Geysers	0.00	0.00	3.12	3.20	3.10
TERA Corp. (Wind)	0.02	0.25	0.19	0.19	0.19
Potential Pacific Northwest Purchase	25.82	17.91	23.13	22.76	22.94
Resource Total	100.00	100.00	100.00	100.00	100.00
SWP Energy Requirement	41.77	62.71	84.40	90.72	96.62
SWP Energy for Sale	58.23	37.29	15.60	9.28	3.38
RESOURCES' COST (mills per kWh)^(c)					
Hyatt-Thermalito	10	10	11	12	14
Project Recovery Plants					
San Luis	25	25	25	25	25
Alamo	-	68	57	76	79
Devil Canyon	25	25	25	25	25
W. E. Warne	25	25	25	25	25
Castaic	25	25	25	25	25
San Luis Obispo	-	-	-	25	25
Pine Flat	27	30	31	33	35
MWDC Hydro	49	49	62	61	103
Thermalito Diversion Dam	-	-	73	78	82
SCE Exchange	0	0	0	0	0
Reid Gardner Unit No. 4	55	65	79	103	125
Bottle Rock	-	76	96	129	167
South Geysers	-	-	95	128	166
TERA Corp. (Wind)	85	85	85	68	68
Potential Pacific Northwest Purchase ^(d)	32 (22)	37 (20)	44 (34)	72 (51)	107 (79)
Composite Resource Cost	23	29	35	46	56
Value for Potential Energy Sales	22	20	34	51	79
Net Cost of Energy for SWP Use	24	34	35	46	55
Transmission Cost ^(e)	8	5	2	2	2
Effective Unit Cost	32	39	37	48	57

- a) Net energy gained from Southern California Edison Co. under 1979 DWR-SCE Power Contract and 1981 Capacity Exchange Agreement.
- b) Requirement based on 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 from power sources.
- c) Includes allowances for future cost escalation.
- d) The first number includes capacity and energy charges; the number in parenthesis includes the energy charge only.
- e) Total transmission cost divided by SWP Energy Requirement.

chases. It is expected that the cost of Pacific Northwest energy will be generally less than the cost of energy in California. The 1984 and 1985 unit rates shown for potential energy sales reflect experiences for the first half of 1984 as well as assumptions leading to preparation of the 1985 bills. For 1990 and thereafter, the rate for potential sales is assumed to be equal to the energy component of the Pacific Northwest power purchase rate.

The net cost of energy for SWP use is the unit cost of the energy actually used for SWP purposes, after revenues from sales at the indicated unit sale value are deducted. Transmission costs are added to derive the total effective unit cost of energy used for SWP pur-

poses. The unit transmission costs shown are calculated by dividing total annual SWP expenditures for power transmission services by the total annual SWP energy requirement. Previous editions of Bulletin 132 showed a composite unit cost of total SWP energy resources; the current approach differs by focusing on the resultant average unit cost of energy actually used, after taking sales into account.

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

CHAPTER VII FUTURE COSTS AND FINANCING

This chapter presents both a summary and detailed explanation of SWP capital costs and financing, revenues and expenses, and bond activities. The overall summary is in Table 19, while 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 132-83 to reflect changes in construction scheduling, revised escalation rates (generally 6 percent instead of 8 percent), and elimination of costs due to deletion of several small hydro projects, San Luis Canal Enlargement, East Branch Enlargement, and participation in the Cottonwood Creek Project. Suisun Marsh costs are for those facilities planned for construction in the next few years. Projected bond activities have been revised to reflect these changes. Tideland Oil revenues have not been included as a revenue source in the analysis, pending action on the legislative program, except for that small portion needed to fund annual drainage and desalting studies and activities. However, until there is some legislative action, DWR will continue to receive Tideland Oil revenues as in the past.

DWR has redirected its planning programs for future yield-increasing water development facilities, and in early 1984 the Administration introduced a legislative package containing proposals for a number of new SWP facilities. These facilities include the proposed Los Banos Grandes offstream storage reservoir, phased through-Delta water transfer facilities, and additional protection facilities for Suisun Marsh. Costs and financing of these facilities are discussed at the end of this chapter.

Through 1983, about \$3.4 billion had been expended by DWR for SWP facilities, of which \$3.1 billion had been disbursed for construction expenditures and \$0.3 billion for other capital requirements. The financial analysis shown in Table 19 excludes the costs and financing of facilities to develop the remaining 2+ million acre-feet of yield to meet the total contractual commitment to all long-term SWP water contractors.

However, the following major SWP facilities planned for completion by 1990 are included in the financial analysis:

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

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. 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 \$446 million in escalated dollars, expended in the years indicated.

TABLE 19: SWP FINANCIAL

(in 1,000 dollars)^a

PART I

Line No.	Line Item	Calendar Year													Total 1984-1995	Total 1952-1995			
		1952-1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995					
	CAPITAL REQUIREMENTS																		
1.	Initial Project Facilities	2,202,749	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,202,749	
2.	Phase II of the North Bay Aqueduct	6,269	8,975	25,913	29,290	1,731	614	7	0	0	0	0	0	0	0	0	0	66,530	72,799
3.	Delta and Suisun Marsh Facilities	70,195	3,669	6,547	10,933	50	8	0	0	0	0	0	0	0	0	0	0	21,207	91,402
4.	Final 4 Units at Benks Delta Pumping Plant	1,509	462	1,095	2,711	8,026	14,630	12,895	5,075	0	0	0	0	0	0	0	0	44,894	46,403
5.	San Luis Canal Enlargement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6.	Final 3 Units at A. D. Edmonston Pumping Plant	22,662	6,488	182	0	0	0	0	0	0	0	0	0	0	0	0	0	6,670	29,332
7.	Units on Coastal Branch and South of A. D. Edmonston	29,391	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	29,403
8.	Warne Powerplant and Peace Valley Pipeline	122,081	964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	964	123,045
9.	Enlargement of the East Branch of the California Aqueduct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Additional Conservation Facilities	8,492	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8,492
11.	Small Hydroelectric Power Generating Facilities	40,671	12,387	9,506	5,631	1,129	0	0	0	0	0	0	0	0	0	0	0	28,653	69,324
12.	Power Generation and Transmission Facilities	315,939	72,628	32,288	12,677	183	0	0	0	0	0	0	0	0	0	0	0	117,776	433,715
13.	San Joaquin Drainage Facilities	12,938	2,753	2,932	1,648	363	385	408	433	459	486	515	546	579				11,507	24,445
14.	Other Costs	163,795	20,104	14,502	14,848	13,460	8,869	7,598	6,512	2,565	2,656	2,810	2,973	3,145				100,042	263,837
15.	TOTAL PROJECT CONSTRUCTION EXPENDITURES	2,996,691	128,442	92,965	77,738	24,942	24,506	20,908	12,020	3,024	3,142	3,325	3,519	3,724				398,255	3,394,946
16.	Davis-Grunsky Act Program Costs	113,754	5,127	5,127	5,992	0	0	0	0	0	0	0	0	0	0	0	0	16,246	130,000
17.	Special Capital Requirements Under Revenue Bond Financing	246,715	0	27,337	4,000	0	0	0	0	0	0	0	0	0	0	0	0	31,337	278,052
18.	TOTAL CAPITAL REQUIREMENTS	3,357,160	133,569	125,429	87,730	24,942	24,506	20,908	12,020	3,024	3,142	3,325	3,519	3,724				445,838	3,802,998
19.	Power Facilities Capital Requirements	1,001,628	85,979	69,131	22,308	1,312	0	0	0	0	0	0	0	0				178,730	1,180,358
20.	Water Facilities Capital Requirements	2,355,535	47,590	56,298	65,422	23,630	24,506	20,908	12,020	3,024	3,142	3,325	3,519	3,724				267,108	2,622,643
	FINANCING OF CAPITAL REQUIREMENTS																		
	POWER REVENUE BOND PROCEEDS																		
21.	Power Bonds through Reid Gardner Series B	679,895	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	679,895
22.	Reid Gardner Series C	125,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	125,000
23.	Small Hydro - South Geysers Series D	49,640	19,924	5,436	0	0	0	0	0	0	0	0	0	0	0	0	0	25,360	75,000
24.	Bottle Rock Series E	96,863	20,695	7,442	0	0	0	0	0	0	0	0	0	0	0	0	0	28,137	125,000
25.	Alamo - South Geysers Series F	50,230	22,660	2,110	0	0	0	0	0	0	0	0	0	0	0	0	0	24,770	75,000
26.	Assumed Future Power Revenue Bonds	0	0	49,380	22,308	1,312	0	0	0	0	0	0	0	0	0	0	0	73,000	73,000
27.	SUBTOTAL POWER REVENUE BONDS	1,001,628	63,279	64,368	22,308	1,312	0	0	0	0	0	0	0	0				151,267	1,152,895
	OTHER CAPITAL FINANCING																		
28.	Initial Project Facilities and Additional Conservation Facilities Bond Proceeds	1,452,261	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,452,261
29.	APPLICATION OF PROCEEDS FROM SALE OF WATER BONDS, DAVIS-GRUNSKY ACT PROGRAM	113,754	5,127	5,127	5,992	0	0	0	0	0	0	0	0	0	0	0	0	16,246	130,000
30.	APPLICATION OF CALIFORNIA WATER FUND MONIES (TIDELAND OIL REVENUES)	446,076	2,753	2,932	1,648	363	385	408	433	459	486	515	546	579				11,507	457,583
31.	APPLICATION OF MISCELLANEOUS RECEIPTS TO CONSTRUCTION	343,441	62,410	53,002	7,585	472	0	0	0	0	0	0	0	0	0	0	0	123,469	466,910
32.	Revenue Transfers Applied	0	0	0	3,676	3,498	24,121	20,500	11,587	2,565	2,656	2,810	2,973	3,145				77,531	77,531
33.	APPLICATION OF PROCEEDS FROM SALE OF SUPPLEMENTAL WATER REVENUE BONDS	0	0	0	46,521	19,297	0	0	0	0	0	0	0	0	0	0	0	65,818	65,818
34.	SUBTOTAL OTHER CAPITAL FINANCING	2,355,532	70,290	61,061	65,422	23,630	24,506	20,908	12,020	3,024	3,142	3,325	3,519	3,724				294,571	2,650,103
35.	TOTAL FINANCING OF CAPITAL REQUIREMENTS	3,357,160	133,569	125,429	87,730	24,942	24,506	20,908	12,020	3,024	3,142	3,325	3,519	3,724				445,838	3,802,998

a) Amounts shown in future years have been escalated to account for anticipated inflation.

ANALYSIS, JUNE 30, 1984

(in 1,000 dollars)^(a)

PART II

Line No.	Line Item	Calendar Year													Total 1984-1995	Total 1952-1995	
		1952-1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995			
	PROJECT REVENUES																
36.	Miscellaneous Receipts	590,421	28,327	11,440	2,773	152	2	2	2	2	3	3	3	3		42,713	633,134
	WATER CONTRACTOR PAYMENTS																
37.	Transportation Capital	1,012,235	117,197	88,832	92,275	94,659	95,722	96,837	98,299	99,233	99,831	99,988	99,988	99,988		1,182,849	2,195,084
38.	Transportation Minimum	382,031	151,951	178,440	199,665	224,300	225,300	226,309	222,523	223,454	220,152	224,066	222,267	220,572		2,538,999	2,921,030
39.	Transportation Variable	199,595	95,511	93,142	94,152	94,566	92,972	92,868	112,928	117,593	120,348	122,473	125,670	129,391		1,291,614	1,491,209
40.	Delta Water Charge	271,611	37,610	43,897	46,957	50,248	53,356	57,558	60,108	61,026	61,307	61,518	61,725	61,901		657,211	928,822
41.	Adjustment for Bond Service	0	0	0	3,504	3,504	3,504	3,504	3,504	3,504	3,504	3,504	3,504	3,504		35,040	35,040
42.	SUBTOTAL WATER CONTRACTOR PAYMENTS UNDER LONG-TERM WATER SUPPLY CONTRACTS	1,865,472	402,269	404,311	436,553	467,277	470,854	477,076	497,362	504,810	505,142	511,549	513,154	515,356		5,705,713	7,571,185
43.	Off-Aqueduct Cover Adjustment	0	-3,721	-8,948	-11,993	-12,609	-14,880	-15,247	-15,243	-15,244	-15,238	-15,236	-15,233	-15,229		-158,821	-158,821
	OTHER REVENUES																
44.	Federal Payments for Project Operating Costs	35,665	6,984	6,385	4,914	4,975	4,985	4,988	4,988	6,452	7,268	7,473	6,870	10,604		76,886	112,551
45.	Appropriations for Operating Costs Allocated to Recreation	16,657	0	0	0	0	0	0	0	0	0	0	0	0		0	16,657
46.	Local Agency Payments Under Davis-Grunsky Loan Repayment Contracts	7,814	1,879	1,902	1,962	1,984	1,960	2,012	1,977	1,970	1,970	1,970	1,970	1,970		23,526	31,340
47.	Miscellaneous Revenues	420,184	6,418	32,337	9,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000		92,755	512,939
48.	Payments Under Oroville-Thermalito Power Sale Contract	249,279	0	0	0	0	0	0	0	0	0	0	0	0		0	249,279
49.	SUBTOTAL OTHER REVENUES	729,599	15,281	40,624	15,876	11,959	11,945	12,000	11,965	13,422	14,238	14,443	13,840	17,574		193,167	922,766
50.	TOTAL OPERATING REVENUES	2,595,071	413,829	435,987	440,436	466,627	467,919	473,829	494,084	502,988	504,142	510,756	511,761	517,701		5,740,059	8,335,130
51.	TOTAL OPERATING REVENUES AND MISCELLANEOUS RECEIPTS	3,185,492	442,156	447,427	443,209	466,779	467,921	473,831	494,086	502,990	504,145	510,759	511,764	517,704		5,782,772	8,968,264
	PROJECT EXPENSES																
52.	Project Operation, Maintenance, and Power Costs	731,241	242,430	235,262	233,909	244,592	241,968	243,508	256,390	262,678	263,613	267,876	269,851	270,947		3,033,024	3,764,265
53.	Deposits to Replacement Reserves	44,344	8,452	10,178	10,717	10,845	10,871	11,206	11,714	13,396	14,346	15,377	15,221	19,718		152,041	196,385
54.	Deposits to Special Reserves Under Revenue Bond Financing	299,620	-50,816	-37,843	-18,107	13,116	-12,067	-7,828	-1,736	-11	-7	-1	-4,191	-5,928		-125,419	174,201
	PAYMENTS OF DEBT SERVICE																
55.	Principal Repayment on Bonds Sold Through June 30, 1984	190,239	25,745	29,030	31,980	34,435	37,030	39,110	41,200	42,975	44,840	47,485	50,155	52,490		476,475	666,714
56.	Interest on Bonds Sold Through June 30, 1984	1,474,972	150,594	149,220	147,507	145,624	143,647	141,595	139,376	137,067	134,652	132,160	129,508	126,683		1,677,593	3,152,565
57.	Future Power Bond Principal Repayment	0	0	0	0	0	465	526	628	748	929	1,049	1,109	1,471		6,925	6,925
58.	Future Power Bond Interest Payments	0	0	7,300	7,300	7,300	7,280	7,219	7,099	6,976	6,795	6,675	6,615	6,253		76,812	76,812
59.	Future Water Bond Principal Repayment	0	0	0	414	444	479	519	564	614	669	729	794	864		6,090	6,090
60.	Future Water Bond Interest Payments	0	0	0	6,483	6,453	6,418	6,378	6,333	6,283	6,228	6,168	6,103	6,033		62,880	62,880
61.	TOTAL PRINCIPAL	190,239	25,745	29,030	32,394	34,879	37,974	40,155	42,392	44,337	46,438	49,263	52,058	54,825		489,490	679,729
62.	TOTAL INTEREST	1,474,972	150,594	156,520	161,290	159,377	157,345	155,152	152,808	150,326	147,675	145,003	142,226	138,969		1,817,285	3,292,257
63.	SUBTOTAL DEBT SERVICE	1,665,211	176,339	185,550	193,684	194,256	195,319	195,307	195,200	194,663	194,113	194,266	194,284	193,794		2,306,775	3,971,986
64.	California Water Fund Appropriation to Non-SWP Purposes	70,000	0	0	0	0	0	0	0	0	0	0	0	0		0	70,000
65.	TOTAL OPERATING EXPENSES AND DEBT SERVICE	2,810,416	376,405	393,147	420,203	462,809	436,091	442,193	461,568	470,726	472,065	477,518	475,165	478,531		5,366,421	8,176,837
66.	Deposits to Operating Reserves Added	31,635	3,341	1,278	11,746	0	0	0	0	0	0	0	0	0		16,365	48,000
67.	California Water Fund Repayment Required for Current Construction	0	0	0	3,676	3,498	24,121	20,500	11,587	2,565	2,656	2,810	2,973	3,145		77,531	77,531
68.	California Water Fund Repayment Available for Future Construction	0	0	0	0	0	7,709	11,138	20,932	29,699	29,424	30,431	33,626	36,029		198,987	198,987
69.	Miscellaneous Receipts Used for Construction	343,441	62,410	53,002	7,585	472	0	0	0	0	0	0	0	0		123,469	466,910
70.	TOTAL PROJECT EXPENSES	3,185,492	442,156	447,427	443,209	466,779	467,921	473,831	494,086	502,990	504,145	510,759	511,764	517,704		5,782,772	8,968,264

The current SWP financial analysis is shown in Table 19 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, and 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. DWR currently estimates that the 30 long-term contractors ultimately will spend more than \$2 billion for local distribution facilities, of which about half has been spent to date.

Capital expenditures for the SWP also include requirements other than those for construction, such as disbursements under the Davis-Grunsky Act Program (see Line 16), and special capital requirements under revenue bond financing (Line 17).

In addition to the assumptions stated earlier, the financial analysis is based on the assumption 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 assumes that all funds available at least through 1995 will be required for SWP construction and should be transferred and expended for that purpose.

Future conditions undoubtedly 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:

- o deviation from the assumptions regarding SWP power resources;
- o deviation of actual rates of future construction-price inflation from those currently assumed for cost estimates;
- o rescheduling of currently planned construction for future facilities;
- o development of alternative sources of water not foreseen at this time;
- o completion of the Coastal Branch to serve San Luis Obispo County FC&WCD and Santa Barbara County FC&WCD;
- o construction of Buttes Reservoir for Antelope Valley-East Kern Water Agency;
- o enlargement of the San Luis Canal or the East Branch of the California Aqueduct;
- o changes in contractors' entitlements due to changes in water needs, water conservation, or reclamation.
- o inability of DWR to market sufficient revenue bonds;
- o changes in economic conditions including interest rates;
- o adverse impacts on water contractors resulting from shortages due to insufficient supplies (see Chapter V);
- o adverse impacts on the abilities of water contractors to pay SWP costs, including outcome of the November 1984 Jarvis Initiative;
- o the outcome of certain lawsuits now pending before the courts (see Chapter III);
- o adverse rulings by regulatory agencies.

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 at 6 percent per year for construction costs and State salaries; land acquisition costs are assumed to escalate at 7 percent per year. A generalized construction schedule for current and future contracts is shown in Figure 18.

The following sections describe DWR's current assumptions concerning the 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 included in this line and in Line 14, "Other Costs." The additional costs after 1973 included in this line were previously included in other lines and have been added to this line due to redefinition and reallocation of costs for initial facilities.

Line 2: Phase II of the North Bay Aqueduct

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

FIGURE 18: GENERALIZED CONSTRUCTION SCHEDULE

FACILITY, CONSTRUCTION DIVISION OR FEATURE	CALENDAR YEAR											
	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
ENERGY SUPPLY												
BOTTLE ROCK POWERPLANT	■	■										
SOUTH GEYSERS POWERPLANT	■	■	■	■								
OROVILLE DIVISION												
THERMALITO DIVERSION DAM POWERPLANT		■	■	■								
SUISUN MARSH	■	■	■									
NORTH BAY AQUEDUCT (PHASE II), CACHE SLOUGH THROUGH CORDELIA PUMPING PLANT		■	■	■								
NORTH SAN JOAQUIN DIVISION												
HARVEY O. BANKS DELTA PUMPING PLANT UNITS 8, 9, 10, & 11		■	■	■	■	■	■					
TEHACHAPI DIVISION												
A. D. EDMONSTON PUMPING PLANT, UNITS 10, 12, & 14 (FINAL)	■	■										
MOJAVE DIVISION												
ALAMO POWERPLANT	■	■	■									
SAN JOAQUIN DRAINAGE FACILITIES												
LOS BANOS DEMONSTRATION DESALTING FACILITY	■	■										

TABLE 20: SWP CAPITAL EXPENDITURES

(in thousands of dollars)

Facilities and Construction Divisions	Expenditures Incurred Through 1983	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	15,807	197	16,004	1,198	0	14,806	0
Oroville Division	536,468	3,873	540,341	452,034	69,994	18,313	0
North Bay Aqueduct	13,521	66,530	80,051	80,051	0	0	0
Delta Facilities	106,771	21,207	127,978	111,258	0	16,720	0
South Bay Aqueduct	71,852	819	72,671	51,607	7,370	13,670	24
California Aqueduct							
North San Joaquin Division	171,378	50,224	221,602	213,425	0	8,177	0
San Luis Division	196,001	5,529	201,530	186,419	0	14,901	210
South San Joaquin Division	269,449	6,549	275,998	266,028	0	9,970	0
Tehechapi Division	304,895	8,690	313,585	296,072	0	17,513	0
Mojave Division	228,334	4,538	232,872	218,760	0	14,112	0
Santa Ana Division	192,210	316	192,526	172,248	0	20,278	0
West Branch	491,245	20,952	512,197	481,969	0	29,722	506
Coastal Branch	16,542	475	17,017	16,898	0	0	119
Subtotal, California Aqueduct	1,870,054	97,273	1,967,327	1,851,819	0	114,673	835
Small Hydroelectric Power Generating Facilities	40,671	28,653	69,324	65,717	0	3,607	0
Off-Aqueduct Power Generating Facilities	315,939	104,059	419,998	419,998	0	0	0
San Joaquin Drainage Facilities	12,938	11,507	24,445	0	0	0	24,445
Planning and Preoperations ^(c)	8,503	42,185	50,688	50,688	0	0	0
Unassigned	4,167	21,952	26,119	0	0	0	26,119
SUBTOTAL, PROJECT CONSTRUCTION EXPENDITURES	2,996,691	398,255	3,394,946	3,084,370	77,364	181,789	51,423
OTHER CAPITAL REQUIREMENTS							
Davis-Grunsky Act Program	113,754	16,246	130,000	0	0	0	130,000
TOTAL CAPITAL EXPENDITURES	3,110,445	414,501	3,524,946	3,084,370	77,364	181,789	181,423

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 planning and preoperation expenses allocated to conservation facilities.

Napa and Solano Counties for urban use. This line includes all costs for design, construction, and right of way for the facilities described in Chapter V.

Line 3: Delta and Suisun Marsh Facilities

The history column (1952-1983) of line 3 includes costs for general Delta facilities and planning costs associated with the previously-planned Peripheral Canal and overland water delivery facil-

ities for the western Delta. Included for Suisun Marsh are historical planning costs as well as construction costs through 1983. The history figure is lower than shown in Bulletin 132-83 because some of these Delta and Suisun March Facilities costs have been added to Line 1, "Initial Facilities" (as a result of the redefinition and reallocation of costs mentioned in the description of Line 1).

The columns for 1984-1988 show only costs for construction of Suisun Marsh

facilities. The plan for protection of Suisun Marsh is discussed in Chapter III. Costs are for only a portion of the final Marsh Facilities: the Montezuma Slough Control Structure and an access road. Present plans are to evaluate the effectiveness of the Control Structure before proceeding with any additional facilities.

Line 4: Final Four Units at Banks Delta Pumping Plant

The first two of the final four 1,067-cfs units are scheduled to be operational in 1989 and the last two in 1990.

Line 5: San Luis Canal Enlargement

This enlargement will be required to maintain and augment the present conveyance capability of the joint use portion of the California Aqueduct between Dos Amigos Pumping Plant and Kettleman City. The capacity of this reach (the San Luis Canal) would be increased by 1,000 cfs. Damage caused during the floods of 1978 indicates that additional flood protection facilities are also necessary. Work to correct subsidence will be performed by the USBR. A decision to proceed on enlargement has been postponed, pending a decision on when the additional capacity will be needed; therefore, no costs are shown in line 5.

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

According to the current schedule, these 315-cfs units will be operational in late 1984 and early 1985.

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 and for purchase of pumping units at Las Perillas and Badger Hill Pumping Plants on the Coastal

Branch. 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. 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, but no costs are included in Line 7 because of the uncertainty regarding the timing of construction.

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. The second of two 37.5-MW generating units at Warne Powerplant went into operation in February 1983 and construction will be essentially completed in 1984. Warne Powerplant is designed to allow future installation of two additional 37.5-MW generating units, but that expansion is not presently scheduled.

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

No costs for East Branch enlargement are shown, since project sizing, the construction schedule, and a financing plan are currently under review.

Line 10: Additional Conservation Facilities

The history column (1952-1983) of Line 10 includes costs of planning studies for the Middle Fork Eel River Development, conducted between 1964 and 1975. (Other costs planning costs for additional conservation costs are included in Line 14.) No costs are shown for construction of additional conservation facilities for the period 1984-1995 in

the financial analysis. However, the last section of this chapter presents costs and financing information for facilities contained in the Administration's present water development legislative program.

Line 11: Small Hydroelectric Power Generating Facilities

Future expenditures included in Line 11 are for completion of the Alamo Powerplant and the Thermalito Diversion Dam Powerplant.

Line 12: Power Generation and Transmission Facilities

Power generation and transmission costs for most years in Line 12 are for the Off-Aqueduct power facilities: the Reid Gardner coal-fired powerplant; Bottle Rock and South Geysers geothermal plants; and Pine Flat transmission line liaison costs. Costs for 1984 include the Geysers-Lakeville Transmission Line (\$7.8 million) and the Midway-Wheeler Ridge Transmission Line (\$11.7 million).

Line 13: San Joaquin Drainage Facilities

Included are the costs of (1) securing commitments for repayment from local agencies, (2) assuring that local waste disposal plans are compatible with the recommended Plan of the Interagency Drainage Program, (3) monitoring and reporting the quality and quantity of agricultural waste waters in the San Joaquin Valley, and (4) the Los Banos Demonstration Desalting Facility (see Chapter V). Desalting Facility operation and maintenance costs are shown through mid-1986. These costs are financed by the California Water Fund. Costs beyond 1986 in Line 13 are only for the waste water monitoring program. 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, Delta water quality monitoring, 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 Aqueduct. DWR continues to assume that Abbey Bridge and Dixie Refuge Dams and Reservoirs will be postponed until there is local support and demonstrated need for these facilities. The costs for these facilities will be shown in Line 14 when a decision is made to proceed. Line 14 also includes planning costs for future facilities.

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, 1983, DWR and the California Water Commission had approved \$113.8 million in grants and loans for 109 local agencies throughout the State. DWR estimates that funds presently authorized for the program will be disbursed prior to 1987.

Line 17: Special Capital Requirements Under Revenue Bond Financing

This line includes special capital requirements for revenue bonds at the time bonds are sold, to pay for specific costs in the first few years following bond sale. The financial analysis assumes that power facility revenue bond proceeds will pay bond interest through one year following the completion of construction, and operation and maintenance costs for the first year of operation. Special capital requirements for revenue bonds for facilities other than power generating facilities (hereafter termed water revenue bonds) are not included, since the current assumption is that water contractors would begin paying immediately for bond debt service. (This assumption has been made to limit financing costs). Special capital requirements are also included in Line 47 as a Miscellaneous

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

Line 18: Total Capital Requirements

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

Line 19: Power Facilities Capital Requirements

This line is the total of capital 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.

TABLE 21: APPLICATION OF REVENUE BOND PROCEEDS

(in millions)

Application of Revenue Bond Proceeds	Oroville (Actual)	Devil Canyon-Castaic (Actual)	Pyramid Series A (Actual)	Reid Gardner Series B (Actual)	Reid Gardner Series C (Actual)	Small Hydro-South Geysers Series D (Actual)	Bottle Rock Series E (Actual)	Alamo-South Geysers Series F (Actual)	Supplemental Power (Assumed)	Supplemental Water (Assumed)
Construction Expenditures	\$218.0	\$126.4	\$74.0	\$146.1	\$ 91.1	\$49.6	\$96.9	\$59.1	\$41.7	\$65.8
Plus, Other Capital Requirements: Reimbursement of General Fund	\$ 2.6	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0
Bond interest through one year following completion of construction	\$ 19.9	\$ 10.0	\$19.2	\$ 41.9	\$ 17.9	\$19.9	\$22.0	\$14.2	\$27.3	\$ 0.0
Operating costs for one year following completion of construction	\$ 1.5	\$ 0.7	\$ 1.0	\$ 0.0	\$ 7.9	\$ 0.0	\$ 3.7	\$ 0.0	\$ 4.0	\$ 0.0
Bond discount and financing costs	\$ 3.0	\$ 2.1	\$ 1.6	\$ 12.0	\$ 8.1	\$ 5.5	\$ 2.4	\$ 1.7	\$ 0.0	\$ 0.0
Subtotal	\$ 27.0	\$ 12.8	\$21.8	\$ 53.9	\$ 33.9	\$25.4	\$28.1	\$15.9	\$31.3	\$ 0.0
TOTAL, Principal amount of bonds	\$245.0	\$139.2	\$95.8	\$200.0	\$125.0	\$75.0	\$125.0	\$75.0	\$73.0	\$65.8

Financing of Capital Requirements

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

- o Burns-Porter Financing, derived from the sale of California Water Resources Development Bonds (general obligation bonds) and the State's Tideland Oil revenues deposited in the California Water Fund as authorized by the Burns-Porter Act (California Water Code Sections 12930-12944), approved by the electorate in November 1960.
- o 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).
- o 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 million specifically for the Davis-Grunsky Act Program. Proceeds from the sale of general obligation bonds are deposited in the California Water Resources Development Bond Fund--Bond Proceeds Account, from which monies may be expended only for the construction of SWP facilities and for the Davis-Grunsky Act Program.

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, 1984, DWR had sold \$1.1 billion of revenue bonds in addition to \$250 million of revenue bond anticipation notes in two issues, one for the Reid Gardner Project and the other for Bottle Rock and Alamo facilities. The Reid Gardner notes matured on June 1, 1984 and were redeemed with proceeds from the Reid Gardner Project Series B Revenue Bonds that were sold on July 7, 1982. The Bottle Rock-Alamo notes were redeemed on December 1, 1983, one year prior to their maturity, via proceeds derived from Series E and F Power Revenue Bonds, sold April 27, 1983.

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 revenues collected under the Burns-Porter Act for this purpose (second priority revenues).

The financing of capital expenditures is described in Lines 21 through 35.

Line 21: Power Bonds Through Reid Gardner Series B

This line shows the proceeds from power revenue bonds for Oroville, Devil Canyon-Castaic, and Warne (formerly Pyramid) Powerplants, and a portion of the Reid Gardner Project.

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 transferred to the trustee during 1981 as required by the bond resolution.

Power revenue bonds were sold in October 1979 for construction of the portion of the Warne Powerplant and related facilities allocated to power. The construction proceeds provided (1) \$31.6 million that reimbursed other project 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 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 project 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.

Line 22: Reid Gardner Series C

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 project 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 are used for other requirements as shown in Line 17.

Line 23: 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 Hydroelectric Project I and the South Geysers Geothermal 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 24: 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 25: 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 Hydroelectric Project and South Geysers Geothermal Powerplant. 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 26: Assumed Future Power
Revenue Bonds

Future power revenue bonds (those sold after June 30, 1984) are needed to provide \$73.0 million for construction of power-generating facilities and for special capital requirements under revenue bond financing (interest for one year 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 November 1984 in order to finance completion of the Alamo Powerplant and South Geysers Geothermal Powerplant. (See schedule for projected future bond sales shown in Table 22, accompanying the description of Line 33).

Line 27: Subtotal Power Revenue
Bonds

This line is the total of Lines 21-26.

Line 28: Initial Project Facilities
and Additional Conservation Facilities
Bond Proceeds

This line includes financing of initial SWP facilities and planning costs for certain additional conservation facilities.

Financing of initial facilities from general obligation bonds was completed in mid-1972, and amounted to \$1.444 billion -- i.e., the total of \$1.75 billion Burns-Porter Act authorization, less \$130 million reserved for the Davis-Grunsky Act Program, and \$176 million "offset" for additional conservation facilities. The Burns-Porter Act provides that to the extent California Water Fund monies are expended, an equal amount of general obligation bonds are reserved ("offset") for financing the construction of additional conservation facilities in certain watersheds.

In mid-1972, the reservation of "offset" bonds was effectively limited to \$176 million -- the total amount of California Water Fund monies that had been expended up to that time. By mid-1972, all general obligation bond proceeds from the Burns-Porter authorization had been "offset", reserved for the Davis-Grunsky Act Program, or expended 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 schedule for assumed fu-

ture sales of \$12.25 million in general obligation bonds authorized but not yet sold is shown in Table 22, accompanying the description of Line 33.

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 Act became effective in late 1960, approximately \$97 million had been accumulated in the Fund. This balance and continuing annual appropriations to the Fund through June 28, 1968 financed a total of \$176 million of project construction costs.

On June 28, 1968, SB 261 became effective (California Statutes of 1968, Chapter 411), which transferred the remaining balance 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 with three exceptions. For Fiscal Year 1981-82 the Legislature reduced the appropriation to \$22,789,800. For Fiscal Year 1982-83 the appropriation was reduced to \$14,710,000. For Fiscal Year 1983-84 no appropriation was made, although funds remained to cover costs of the Los Banos Demonstration Desalting Facility and the San Joaquin drainage monitoring program into 1984. The financial analysis assumes that the Legislature will continue to appropriate Tideland Oil revenues for the purpose of funding 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 the application of SWP revenues for capital expenditures (see following description of Project Revenues). These are monies that are assumed to be transferred to the California Water Fund pursuant to provisions of the Burns-Porter Act (see description of Project Expenses later in this chapter), and subsequently reappropriated to construction.

Line 33: Application of Proceeds From Sale of Supplemental Water Revenue Bonds

Proceeds shown in this line reflect capital requirements necessary for funding future water facilities (1984-1995). The amounts shown represent that portion of financing of water facilities required beyond the portion funded by project revenues and miscellaneous receipts.

Assumptions regarding additional future facilities may increase the requirements for water revenue bonds. This subject is discussed in greater detail at the end of this chapter.

Table 22 summarizes projected future sales of power revenue bonds (Line 26), general obligation bonds (Line 29), and water revenue bonds (Line 33).

Line 34: Subtotal Other Capital Financing

This line is the total of Lines 28-33.

Line 35: Total Financing of Capital Requirements

This line is the total of Lines 27 and 34.

TABLE 22: PROJECTED BOND SALES

Bond Sales	Purpose	Date of Sale
\$ 73,000,000 Power Revenue Bonds	Alamo-South Geysers	11-84
\$ 12,250,000 Series "W" Water Bonds	Davis-Grunsky Act Program	4-85
\$ 65,800,000 Water Revenue Bonds	Water Facilities	6-86

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 costs allocated to recreation and fish and wildlife enhancement, (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. The financial analysis does not include such appropriations in Line 36 for 1984 and thereafter, and assumes (per pending legislation) that future appropriations would be used to offset a portion of the SWP's repayment obligation to the California Water Fund for Tideland Oil revenues advanced in prior years for construction of SWP facilities.

Line 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 additional operating costs associated with power generation beyond that actually needed for water delivery. Such revenues are assumed to come from sales of excess power, rather than from water contractors.

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 costs under the Delta Water Charge are to be repaid with interest at the Project Interest Rate.

The Project Interest Rate is defined in Article 1(r) of the Standard Provisions for Water Supply Contracts as the weighted average of the rates paid on securities issued and loans obtained to finance SWP facilities, excluding Oroville Revenue Bonds. Under original contract provisions, the basis for determining the Project Interest Rate was the weighted average of rates paid on general obligation bonds 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, that deals in part with cost allocation of Off-Aqueduct powerplants. That amendment excludes financing for Off-Aqueduct power facilities (such as Reid Gardner) 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 on presently known conditions and supports DWR's determination of 1985 water charges, which were billed July 1, 1984. However, the following are significant differences between the sum of future charges shown in Line 42 and the substantiation of 1985 charges discussed in Appendix B:

TABLE 23: REVENUE BOND PROCEEDS AFFECTING THE PROJECT INTEREST RATE

Revenue Bond Proceeds	Devil Canyon Cestaic Revenue Bonds	Pyramid William E. 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	\$126.4	\$74.0	\$17.4	\$25.8	\$39.0
Less portion of such proceeds derived from interest earnings prior to delivery of bonds	1.6	0.0	0.0	0.0	0.0
Plus bond discount and financing costs	2.1	1.6	0.6	2.2	1.1
Subtotal, proceeds included in calculating the Project Interest Rate	\$126.9	\$75.6	\$18.0	\$28.0	\$40.1
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	91%	79%	74%	75%	80%

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)
<u>Actual Issues</u>					
\$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	2,364,917	180,496	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	63,119	5,996	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	872,469	88,090	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 ^(d)	225,102 ^(d)	8.576	-
\$50,000,000 Alamo Project, Series F Revenue Bonds ^(d)	4/27/83	1,168,922 ^(d)	98,599 ^(d)	8.435	4.736
\$25,000,000 South Geysers Project, Series F Revenue Bonds	4/27/83	<u>608,550</u>	<u>52,578</u>	8.640	-
TOTAL (Excluding Oroville CVP Revenue Bonds and Power Revenue Bonds for Off-Aqueduct Facilities)		63,558,188	3,009,946		

- 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 Facilities, 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

- o Future capital costs discussed in Appendix B are based on prices prevailing on December 31, 1983. Those shown in the financial analysis include allowances for price escalation.
- o Pre-1984 charges discussed in Appendix B represent what the charges should have been under presently known conditions. Pre-1984 charges shown in Table 19 are those actually paid under previously determined bills.
- o Charges discussed in Appendix B are unadjusted for past over- or underpayments. Table 19 charges for 1984 and thereafter include adjustments for any apparent overpayments or underpayments of pre-1984 charges.

The payments shown in Table 19 also include revenue that would be pledged to provide bond cover to support supplemental revenue bonds. The amount of revenue pledged is that portion identifiable with the facilities financed with revenue bonds.

Line 41: Revenue Adjustment for Bond Service

This line shows the additional payment required by water contractors to support supplemental revenue bonds. This is necessary because the payment amounts included in lines 37-40 are amortized at the Project Interest Rate, and the future revenue bonds will be sold at a greater interest rate.

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 additional cover of 25 percent of one year's debt service for Off-Aqueduct power facility

bonds. This amount is charged annually to contractors and collected through the minimum OMP&R component of the Transportation Charge; 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, USBR paid 45 percent of OM&R costs for these activities. (The percentage does not apply to power costs; 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, subject to review again in 1985. 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 Costs 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 Year 1983-84, the Legislature did not appropriate funds for this purpose. No amounts are shown in Line 45 for 1984 and thereafter. The financial analysis assumes (per pending legislation) that future appropriations would be used to offset a portion of the SWP's repayment obligation to the California Water Fund for

Tideland Oil revenues advanced in prior years for construction of SWP facilities.

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

As pointed out in Chapter III, over \$48 million in loan applications had been approved as of December 31, 1983. The amounts shown in Line 46 are based on the assumption that \$17.2 million in future loans will be approved, bringing estimated total loans under the \$130 million authorization (which excludes an initial loan of about \$1.3 million) to \$65.2 million. All future loans are assumed to be repaid in 50 years at 2.5 percent interest, with an initial five-year deferment of principal repayment.

Line 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 on experience to date, interest earnings for 1985 and beyond are estimated at \$5 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 Powerplants 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 1952-1983 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 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 that are 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 Resources Development Bond Fund--Systems Revenue Account, are disbursed in accordance with the following priorities of use as specified in the Burns-Porter Act:

- o first, SWP operation, maintenance, power, and replacement costs;
- o second, general obligation bond debt service;
- o third, repayment of expenditures from the California Water Fund;
- o 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 operation, maintenance, and power portion of the Table 25 costs. Table 25 and Line 52 also include the 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 1986. 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 significant changes in the assumptions regarding future power sources and costs (see Chapter VI). Line 52 also includes costs associated with power generation beyond that actually needed for water delivery, assumed to be sold as excess power (refer to Line 39 discussion).

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, 1983, \$2.3 million had been spent for replacement costs; the balance of the replacement reserve as of this date is \$42 million. Replacement reserve amounts are also shown in Table 25.

Line 54: Deposits to Special Reserves Under Revenue Bond Financing

Line 54 is the net of 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 OMP&R);
- o water contractor payments for debt service reserves;
- 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 bonds, deposits to special reserves are included in the year of assumed sale.

The expenditure items are:

- o total capitalized interest paid out;
- o total capitalized OMP&R paid out;
- 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 for Line 54 indicates net change from the previous year. A negative number means a net withdrawal of special reserves to meet expenses, while a positive number represents a net deposit.

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

(in thousands of dollars)

FEATURE	CALENDAR YEAR														TOTAL
	1962-1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996-2035	
BY PROJECT FACILITY															
Feather River Facilities	103,692	-6,591	-6,164	-7,063	-7,329	-7,375	-7,405	-8,156	-8,812	-8,789	-8,786	-8,784	-8,778	-347,623	-337,963
North Bay Aqueduct	1,820	213	240	255	556	526	524	582	597	616	636	658	702	45,948	53,873
Suisun Marsh	0	795	663	719	680	679	679	680	681	682	682	682	682	27,294	35,598
South Bay Aqueduct	29,689	5,793	6,162	5,950	5,702	5,847	5,906	6,211	6,337	6,453	6,403	6,501	6,608	319,852	423,414
California Aqueduct															
Delta to Edmonston	331,316	114,428	98,030	108,160	105,064	105,327	107,744	115,919	119,762	123,371	123,675	125,467	133,445	7,471,146	9,182,854
Edmonston to Perris	202,311	88,654	79,925	80,005	77,800	75,595	74,308	84,963	84,822	86,766	87,662	88,671	110,459	6,916,408	8,138,349
West Branch	29,720	-12,462	10,750	-10,489	-9,394	-11,152	-10,664	-10,198	-8,633	-11,644	-8,671	-8,900	-30,368	-1,213,623	-1,305,728
Coastal Branch	15,141	2,046	2,267	2,285	2,338	2,352	2,277	2,350	2,954	3,017	3,026	3,036	3,066	143,537	189,692
Off-Aqueduct Power Generating Facilities	12,026	35,748	54,660	62,677	77,930	79,895	80,906	75,656	76,667	75,656	76,667	75,656	72,637	1,059,811	1,916,592
Water Quality Monitoring	32,226	4,295	5,072	6,040	5,876	4,804	3,971	3,503	4,978	4,983	4,984	4,984	4,984	144,378	235,078
Davis-Grunsky Act Program	1,203	150	150	150	150	150	150	150	150	150	150	150	150	6,000	9,003
SUBTOTAL: Charges to SWP Contractors	759,144	233,069	251,755	248,689	259,373	256,648	258,396	271,660	279,503	281,261	286,428	288,121	293,587	14,573,128	18,540,762
Payments to/Credits from PG&E under Comprehensive Agreement	16,441	17,813	-6,315	-4,063	-3,936	-3,809	-3,682	-3,556	-3,429	-3,302	-3,175	-3,049	-2,922	-20,595	-27,579
TOTAL OMP&R COSTS	775,585	250,882	245,440	244,626	255,437	252,839	254,714	268,104	276,074	277,959	283,253	285,072	290,665	14,552,533	18,513,183
BY COMPOSITION															
Salaries and Expenses of Headquarters Personnel	219,790	22,502	24,988	27,363	28,075	28,035	27,993	27,993	27,963	27,964	27,964	27,964	27,964	1,116,776	1,663,334
Salaries and Expenses of Field Personnel	360,201	53,771	70,766	58,689	56,699	55,628	54,801	54,325	55,891	55,894	55,893	55,893	55,891	2,180,770	3,225,112
Pumping Power															
Used by Pumping Plants	241,146	144,487	154,796	168,717	169,772	165,442	166,329	194,917	201,433	202,713	210,341	213,493	219,395	13,647,003	16,099,984
Produced by Generation Plants	-52,700	-31,783	-63,452	-79,155	-83,956	-83,260	-82,933	-93,067	-96,088	-95,550	-100,052	-100,344	-102,256	-4,358,831	-5,423,427
Payments to/Credits from PG&E under Com- prehensive Agreement	16,441	17,813	-6,315	-4,063	-3,936	-3,809	-3,682	-3,556	-3,429	-3,302	-3,175	-3,049	-2,922	-20,595	-27,579
Off-Aqueduct Power Generating Facilities Requirement	12,026	35,748	54,660	62,677	77,930	79,895	80,906	75,656	76,667	75,656	76,667	75,656	72,637	1,059,811	1,916,592
Oroville-Thermalito Insurance Premiums	4,753	324	324	324	324	324	324	324	324	324	324	324	324	12,960	21,601
Less: Portion of Costs Incurred During Construction	-70,416	-432	-505	-643	-316	-287	-230	-202	-83	-86	-86	-86	-86	-1,243	-74,701
SUBTOTAL	731,241	242,430	235,262	233,909	244,592	241,968	243,508	256,390	262,678	263,613	267,876	269,851	270,947	13,636,651	17,400,916
Deposits to Replacement Reserves	44,344	8,452	10,178	10,717	10,845	10,871	11,206	11,714	13,396	14,346	15,377	15,221	19,718	915,882	1,112,267
TOTAL OMP&R COSTS	775,585	250,882	245,440	244,626	255,437	252,839	254,714	268,104	276,074	277,959	283,253	285,072	290,665	14,552,533	18,513,183
BY PROJECT PURPOSE															
Water Supply and Power Generation	700,859	222,126	240,293	238,958	249,641	246,968	248,756	261,956	268,121	269,073	273,980	276,262	277,947	13,965,795	17,740,735
Payments to/Credits from PG&E under Comprehensive Agreement	16,441	17,813	-6,315	-4,063	-3,936	-3,809	-3,682	-3,556	-3,429	-3,302	-3,175	-3,049	-2,922	-20,595	-27,579
Recreation and Fish and Wildlife Enhancement	17,322	3,633	4,622	4,345	4,276	4,213	4,170	4,232	4,446	4,435	4,492	4,506	4,552	195,032	264,276
Flood Control	705	52	141	146	149	150	150	152	152	152	151	151	152	6,531	8,934
Miscellaneous Purposes															
Federal Share, San Luis and Delta Facilities	36,779	6,984	6,385	4,914	4,975	4,985	4,988	4,988	6,452	7,269	7,473	6,870	10,604	392,490	506,156
Other (Davis-Grunsky, Drainage, City of Los Angeles)	3,479	274	314	326	332	332	332	332	332	332	332	332	332	13,280	20,661
TOTAL OMP&R COSTS	775,585	250,882	245,440	244,626	255,437	252,839	254,714	268,104	276,074	277,959	283,253	285,072	290,665	14,552,533	18,513,183

Lines 55-56: Payment of Service on Bonds Sold Through June 30, 1984

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 Hydroelectric Project I Revenue Bonds, South Geysers Project Revenue Bonds, Bottle Rock Project Revenue Bonds, and Alamo Project Revenue Bonds. The last bonds sold were Alamo, South Geysers, and Bottle Rock Project Bonds in April, 1983.

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

Series A-R	Table 13, Bulletin 132-72
Series S	Table 10, Bulletin 132-73
Series T	Table 10, Bulletin 132-74
Series U	Table 11, Bulletin 132-76
Series V	Table 11, Bulletin 132-79

Oroville Series

A and B	Table 12, Bulletin 132-72
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The Oroville Revenue Bond service schedule shown in Table 26 is based on the initial bond maturity schedule. Since 1978, the trustee has been retiring bonds prior to the fixed maturity date as follows:

<u>Year</u>	<u>Bonds Retired</u>	<u>Cost</u>
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

In effect, this will decrease the annual interest cost and the principal due in subsequent years. This action will increase the annual deposit to reserve (Line 54), which is held by the

trustee and does not affect the basic validity of the financial analysis.

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:

- o The net interest costs for the power revenue bonds are estimated to average 10.0 percent.
- o The debt service pattern would provide for no maturities during the first two years after issuance, with the latest maturities scheduled for 2015.

Lines 59-60: Payments on Projected Future Water Bonds

These lines show the projected annual service on future water revenue bonds or general obligation bonds. Such bonds are assumed to be sold at a net interest rate of 10.0 percent.

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

TABLE 26: ANNUAL SERVICE ON BONDS

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	62,932	2,485	11,862	1,010	7,583	675	7,238	1,235	23,917
1986	23,830	61,742	2,605	11,737	1,070	7,515	715	7,180	1,345	23,769
1987	25,495	60,492	2,735	11,602	1,135	7,442	755	7,120	1,470	23,607
1988	26,770	59,165	2,870	11,464	1,205	7,366	795	7,055	1,615	23,431
1989	28,145	57,825	3,015	11,314	1,275	7,284	840	6,988	1,770	23,237
1990	29,385	56,473	3,175	11,152	1,355	7,198	890	6,916	1,955	23,025
1991	30,365	55,070	3,335	10,983	1,435	7,107	940	6,841	2,165	22,790
1992	31,295	53,640	3,510	10,806	1,520	7,010	995	6,761	2,390	22,530
1993	32,940	52,183	3,695	10,618	1,610	6,907	1,050	6,693	2,655	22,267
1994	34,525	50,660	3,885	10,421	1,705	6,799	1,115	6,622	2,945	21,970
1995	35,660	49,073	4,085	10,215	1,810	6,684	1,180	6,545	3,280	21,634
1996	36,900	47,436	4,300	9,996	1,920	6,561	1,250	6,464	3,650	21,254
1997	36,595	45,818	4,525	9,767	2,035	6,432	1,325	6,376	4,075	20,823
1998	36,675	44,226	4,760	9,524	2,155	6,295	1,405	6,283	4,555	20,334
1999	37,600	42,655	5,005	9,265	2,285	6,160	1,490	6,184	5,090	19,787
2000	38,890	41,033	5,280	8,987	2,420	6,040	1,580	6,078	5,700	19,177
2001	39,980	39,351	5,565	8,693	2,565	5,912	1,680	5,964	6,385	18,493
2002	41,120	37,620	5,865	8,384	2,720	5,773	1,785	5,842	7,150	17,726
2003	42,970	35,835	6,180	8,057	2,885	5,626	1,900	5,712	8,015	16,868
2004	45,160	33,957	6,520	7,714	3,055	5,470	2,020	5,573	8,970	15,907
2005	46,450	31,995	6,870	7,349	3,240	5,305	2,150	5,424	10,045	14,830
2006	47,740	29,971	7,245	6,968	3,435	5,130	2,290	5,268	11,255	13,625
2007	49,230	27,883	7,635	6,564	3,640	4,945	2,445	5,102	12,605	12,274
2008	51,220	25,727	8,050	6,138	3,860	4,749	2,605	4,925	14,115	10,762
2009	53,560	23,478	8,490	5,690	4,090	4,540	2,780	4,736	15,810	9,068
2010	55,250	21,134	8,950	5,216	4,335	4,319	2,960	4,534	17,710	7,171
2011	56,740	18,717	9,435	4,717	4,595	4,085	3,160	4,305	19,830	5,045
2012	58,530	16,216	9,945	4,192	4,875	3,837	3,370	4,060	22,215	2,666
2013	60,370	13,676	10,485	3,636	5,165	3,574	3,600	3,799	0	0
2014	57,900	11,244	11,055	3,051	5,475	3,303	3,840	3,520	0	0
2015	53,690	8,838	11,655	2,435	5,805	3,015	4,095	3,222	0	0
2016	46,130	6,626	12,290	1,782	6,150	2,710	4,370	2,905	0	0
2017	38,060	4,614	12,960	1,097	6,520	2,388	4,665	2,566	0	0
2018	25,350	2,980	13,665	371	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	244,995	466,191	139,165	283,872	95,800	228,767	200,000	553,793

a) Serial maturities or mandatory redemption requirements for term bonds.
b) Interest on the Series B bonds is capitalized to August 1, 1984.
c) Interest on the Series C bonds is capitalized to August 1, 1984.

SOLD THROUGH JUNE 30, 1984

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		Total	
	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	88,938
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 ^(c)	0	7,286 ^(d)	0	6,017 ^(e)	0	3,666 ^(f)	23,665	144,937
1984	0	11,802 ^(c)	0	7,286 ^(d)	0	10,315 ^(e)	0	6,285 ^(f)	25,745	150,594
1985	1,070	11,802	0	7,286 ^(d)	0	10,315 ^(e)	0	6,285 ^(f)	29,030	149,220
1986	1,175	11,678	0	7,286	1,240	10,315	0	6,285	31,980	147,507
1987	1,285	11,543	0	7,286	1,305	10,253	255	6,285	34,435	145,624
1988	1,405	11,428	480	7,286	1,390	10,181	500	6,271	37,030	143,647
1989	1,540	11,319	520	7,249	1,470	10,098	535	6,241	39,110	141,555
1990	1,685	11,196	570	7,208	1,575	10,002	570	6,206	41,200	139,376
1991	1,830	11,057	615	7,161	1,680	9,892	610	6,166	42,975	137,067
1992	2,005	10,904	665	7,108	1,805	9,771	655	6,122	44,840	134,652
1993	2,170	10,731	725	7,050	1,940	9,637	700	6,074	47,485	132,160
1994	2,350	10,540	790	6,985	2,085	9,490	755	6,021	50,155	129,508
1995	2,555	10,329	860	6,913	2,245	9,328	815	5,962	52,490	126,683
1996	2,780	10,094	945	6,834	2,425	9,151	880	5,898	55,050	123,688
1997	3,030	9,835	1,030	6,746	2,625	8,957	955	5,827	56,195	120,581
1998	3,310	9,547	1,120	6,649	2,840	8,744	1,025	5,750	57,845	117,352
1999	3,615	9,230	1,230	6,543	3,075	8,511	1,115	5,666	60,505	114,001
2000	3,950	8,879	1,345	6,425	3,340	8,256	1,215	5,573	63,720	110,448
2001	4,310	8,492	1,475	6,294	3,625	7,979	1,310	5,473	66,895	106,651
2002	4,710	8,069	1,615	6,150	3,945	7,675	1,430	5,362	70,340	102,601
2003	5,150	7,608	1,770	5,990	4,285	7,343	1,555	5,242	74,710	98,281
2004	5,640	7,080	1,940	5,875	4,675	6,979	1,695	5,110	79,675	93,665
2005	6,180	6,502	2,125	5,749	5,085	6,582	1,845	4,966	83,990	88,702
2006	6,755	5,868	2,325	5,610	5,545	6,149	2,010	4,809	88,600	83,398
2007	7,405	5,176	2,555	5,459	6,045	5,678	2,190	4,638	93,750	77,719
2008	8,110	4,417	2,800	5,197	6,585	5,164	2,390	4,452	99,735	71,531
2009	8,880	3,586	3,070	4,910	7,185	4,604	2,605	4,249	106,470	64,861
2010	9,735	2,676	3,365	4,596	7,830	3,994	2,840	4,028	112,975	57,668
2011	10,675	1,678	3,690	4,251	8,545	3,328	3,095	3,786	119,765	49,912
2012	11,695	877	4,050	3,873	9,325	2,602	3,380	3,523	127,385	41,846
2013	0	0	4,440	3,457	10,175	1,809	3,685	3,236	97,920	33,187
2014	0	0	4,870	2,997	11,110	944	4,030	2,923	98,280	27,982
2015	0	0	5,350	2,492	0	0	4,395	2,580	84,990	22,582
2016	0	0	1,980	1,936	0	0	4,800	2,207	75,720	18,166
2017	0	0	2,175	1,731	0	0	2,795	1,799	67,175	14,195
2018	0	0	2,390	1,505	0	0	3,055	1,561	56,345	10,666
2019	0	0	2,620	1,257	0	0	3,335	1,301	35,480	7,837
2020	0	0	2,880	986	0	0	3,645	1,018	37,275	5,643
2021	0	0	3,155	687	0	0	3,980	708	29,920	3,554
2022	0	0	3,465	359	0	0	4,350	370	24,790	1,735
TOTAL	125,000	255,745	75,000	207,948	125,000	240,063	75,000	179,924	2,649,960	4,793,880

d) Interest on the Series D bonds is capitalized to December 1, 1985.
e) Interest on the Series E bonds is capitalized to October 1, 1985.
f) Interest on the Series F bonds is capitalized to December 1, 1985.

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 operation, maintenance, and debt service. The financial analysis indicates that the maximum reserve amount will have been reached by the end of 1986. Entries in this line are annual transfers 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 currently scheduled and planned future capital expenditures. Line 67 is the same as Line 32.

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 committed for future construction would depend on the funds available and the capital cost schedule of future facilities.

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 able to deliver full contractor requests for water.

The unit water charges shown in Table 27 are shown both as unescalated 1984 dollars, and escalated rates reflecting assumed future inflation. DWR projections assume an annual inflation of 6 percent for construction (capital) and for operation and maintenance costs. The escalated unit rates for future power sources reflect inflation varying from 7.5 percent to 10 percent, depending on the source of energy. Table 27 amounts are less than amounts shown in Table 6 of Bulletin 132-83. This is primarily due to a significant reduction in the future construction program as reflected in a footnote to Table 27.

TABLE 27: ESTIMATED FUTURE UNIT WATER CHARGES

SWP Service Area	Dollars per Acre-Foot ^(a)			
	1990		2000	
	1984 Dollars	Escalated ^(b)	1984 Dollars	Escalated ^(b)
Feather River Capital, OM&R ^(c,d)	18	20	18	27
North Bay Capital, OM&R	181	196	94	114
Power ^(e)	<u>13</u>	<u>14</u>	<u>13</u>	<u>22</u>
Total	194	210	107	136
South Bay Capital, OM&R	49	55	44	71
Power ^(e)	<u>42</u>	<u>46</u>	<u>39</u>	<u>70</u>
Total	91	101	83	141
San Joaquin Valley Capital, OM&R	28	31	28	41
Power ^(e)	<u>22</u>	<u>24</u>	<u>21</u>	<u>38</u>
Total	50	55	49	79
Southern California Capital, OM&R	109	121	89	133
Power ^(e)	<u>128</u>	<u>141</u>	<u>117</u>	<u>208</u>
Total	237	262	206	341

- a) These estimated unit water charges differ from those in Table 6 of Bulletin 132-83 due to a number of factors, primarily (1) omission of costs for enlarging the San Luis Canal and the East Branch of the California Aqueduct, (2) omission of costs for participation in the Cottonwood Creek Project, (3) omission of a hypothetical \$300 million conservation Facility, (4) reduction in construction of small hydroelectric power Facilities; (5) changes in projected water deliveries in some service areas, and (6) a decrease in assumed escalation rates.
- 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.

Financing of Future Facilities

For much of the past decade there have been activities directed at legislative and voter approval of future SWP conservation facilities, including upstream and offstream reservoirs and a Delta water transfer facility. During 1984 the Administration's water development package legislation was introduced. The key legislation is Senate Bill 1369, discussed in Chapter III. This section summarizes costs of some of the facilities described in the bill.

Table 28 displays costs of the future facilities contained in Senate Bill 1369 that are planned to be constructed by the year 2000. Escalated costs of future facilities shown in Table 28 would change if the scope of the program, estimated costs, or timing of proposed facilities changed. Several facilities would provide direct benefits to others, and consequently the SWP costs do not include an assumed local share. Phase 1 of Delta transfer facilities includes enlargement of the

South Fork of the Mokelumne River and channels in the south Delta. Phase 2 includes additional channel features in the north Delta. Total costs shown for south Delta water quality facilities and relocation of the Contra Costa Canal intake are SWP and local shares of costs only, and do not include costs assumed to be paid by the Federal Government. Table 28 costs include the total SWP assumed share of Suisun Marsh facilities. This is because all such facilities would be authorized by Senate Bill 1369. However, costs of a portion of these facilities are also included in Table 19, since DWR has begun to construct initial features of such facilities.

In addition to Senate Bill 1369 facilities, DWR has under consideration plans to construct facilities to provide an overland water supply to Sherman Island in the western Delta. Such facilities would cost \$12 million in 1984 dollars (total considered SWP cost).

TABLE 28: ESTIMATED COSTS OF PROPOSED FUTURE FACILITIES

(millions of dollars)

Facility	Total Cost Unescalated	SWP Cost	
		Unescalated	Escalated
Delta Transfer			
Phase 1	100	100	126
Phase 2	200	200	369
Other facilities			
Suisun Marsh	61	40	70
South Delta Water Quality	15	7	10
Contra Costa Canal Intake Relocation	30	a)	a)
Los Banos Grandes	<u>300</u>	<u>300</u>	<u>479</u>
Total	\$706	\$647	\$1,054

a) subject to negotiation

An additional financing program would be required beyond that shown in Table 19 to fund construction of Senate Bill 1369 facilities. Indications are that major future SWP facilities will be financed through a combination of project revenues and water revenue bonds. Consideration of escalated construction costs, various bond requirements, and overlapping construction schedules of various future facilities indicates that DWR would

have to market close to \$200 million of water revenue bonds per year subsequent to concurrence on a financing program of that magnitude. While the major portion of future costs would need to be financed through sale of water revenue bonds, Line 68 of Table 19 indicates that nearly \$200 million of revenues assumed transferred to the California Water Fund could be used to fund a portion of future construction.

CHAPTER VIII

PROFILES OF SWP CONTRACTORS

Thirty local water agencies have long-term contracts with the State for water supplies from the SWP. Bulletin 132-83 presented profiles of six of these contracting agencies (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). This edition of Bulletin 132 continues with profiles of six additional contractors.

Alameda County Water District

Alameda County Water District (ACWD) includes most of the Bay Plain of Alameda County south of the City of Hayward. This 98-square-mile area includes the cities of Fremont, Newark, and Union City. The only major stream is Alameda Creek, which enters the District via Niles Canyon and discharges into San Francisco Bay. The Bay moderates ACWD's climate, limiting the extremes between winter and summer temperatures. Average annual rainfall varies from 14 inches in Newark to 20 inches in Union City.

ACWD was established in 1914 by the Legislature under the then-new California County Water District Act. ACWD's original purposes were to protect ground water supplies and to develop supplemental supplies; in 1930, the distribution of urban water became an added purpose. ACWD is the only retail water purveyor within its boundaries. It serves water directly through its imported water and ground water extraction systems, and indirectly to independent ground water users through its ground water recharge program.

ACWD's population increased from about 60,000 in 1960 to over 217,000 in

1983. The assessed valuation exceeded \$1.6 billion in 1983.

ACWD's service area has four main sources of water: ground water; captured local surface flows; imported San Francisco Water Department supplies; and the SWP.

ACWD has two major well fields for the extraction of ground water, one on either side of the Hayward Fault, which divides the Niles Cone Ground Water Basin. In 1980, ground water extraction accounted for about 50 percent of ACWD's deliveries.

Historically, saline water from San Francisco Bay and adjacent salt ponds entered fresh water-bearing aquifers underlying much of the ACWD service area. The saline water intrusion was first noticed in the 1920s after shallow ground water extractions had exceeded recharge long enough to cause water levels to drop below sea level. Over the next several decades, the saline water moved inland more than five miles to the forebay area.

Because of the presence of the Hayward Fault, only part of the ground water basin available for use by ACWD is jeopardized by saline intrusion. The Hayward fault, aligned generally in a north-south direction, acts as a relatively impermeable barrier to prevent saline intrusion into the east side of the ground water basin.

The portion of the Niles Cone Ground Water Basin west of the Hayward Fault is composed of a forebay and three primary aquifers. As overdraft conditions worsened, saline water intruding along the upper aquifer entered into the lower aquifers from deeper well pumping. However, ACWD has an active program to reclaim the portion of the ground water

basin that was historically degraded by saline water.

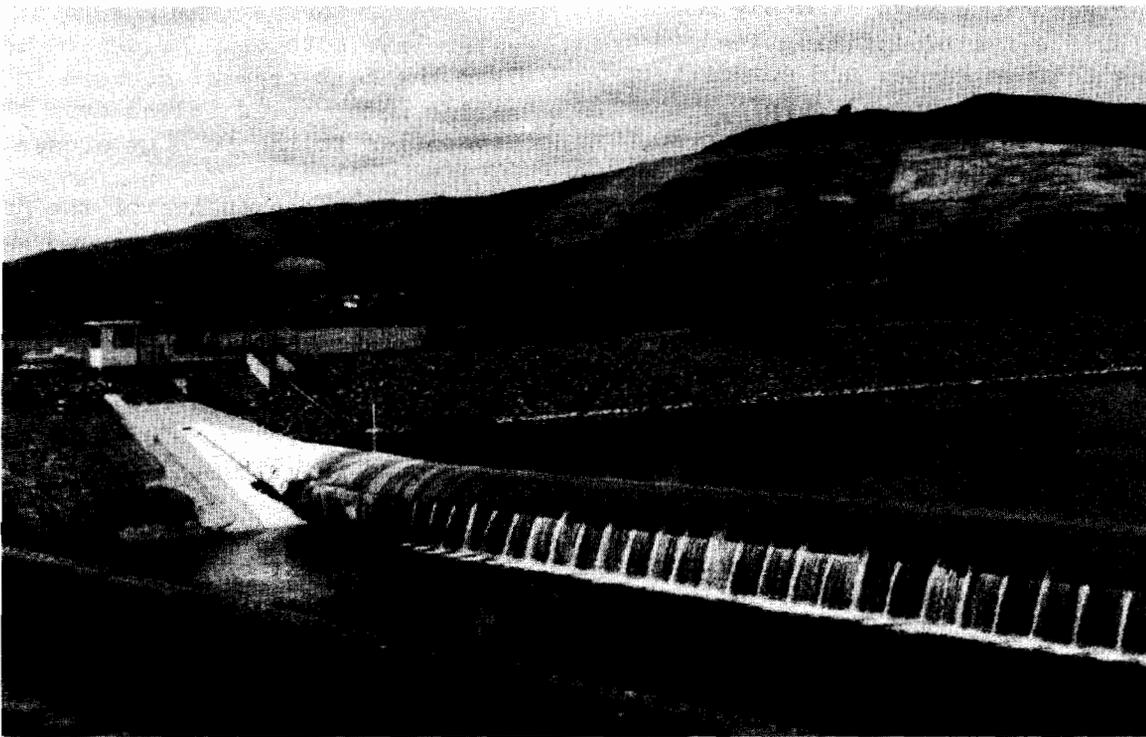
ACWD uses all its captured local surface flows for ground water recharge. ACWD diverts the natural runoff of Alameda Creek into adjacent recharge ponds in the Fremont area. ACWD also has a water rights permit to appropriate surplus waters of Arroyo Del Valle, a tributary to Alameda Creek. The Arroyo del Valle supplies are developed by the multipurpose Lake Del Valle, which also provides flood control, recreation, and offstream storage for the SWP. ACWD's share of the Lake Del Valle supply is released on demand through natural channels to the District's recharge facilities.

ACWD has a contract with the State for delivery of water imported via the South Bay Aqueduct of the SWP. A portion of the SWP supply is treated by the District and delivered directly to urban customers. The remainder of the SWP supply is released down Alameda

Creek to ACWD's ground water recharge facilities. In 1983, only 3,157 acre-feet of SWP entitlement water were delivered to the District. All 1983 needs for ground water recharge were met by local water supplies due to the exceptionally wet 1982-83 winter.

An ACWD contract with the San Francisco Water Department provides for delivery of treated water imported from the Tuolumne River via the Hetch Hetchy Aqueduct. This supply accounted for about 25 percent of the District's deliveries in 1980. A small amount of water from the San Francisco Water Department's Alameda System (Calaveras and San Antonio Reservoirs) is also released into Alameda Creek for ground water recharge.

In addition to ACWD's well fields, there are about 140 private ground water wells in the District. These wells serve mainly agricultural and industrial users. In 1980, water from private wells supplied about 20 percent of the total use within ACWD.



Near the Fremont BART Station, ACWD's Fabridam No. 1 diverts water from Alameda Creek to Shinn Pit, an adjacent ground water recharge facility.

The present irrigated acreage in ACWD is approximately 4,300 acres, or about 7 percent of the total acreage of the District. About one-third of the irrigated acreage is double-cropped. Truck farming accounts for two-thirds of the irrigated acreage, with cauliflower and lettuce predominant.

Kern County Water Agency

Kern County Water Agency (KCWA) was established in 1961 by a special act of the Legislature, with ratification by Kern County voters. Its primary purpose is to acquire water supplies for Kern County. The Agency is governed by an elected seven-member Board of Directors.

Kern County's climate is characterized by long, hot summers and mild winters. The average annual rainfall is about 6 inches. The Kern River is the only major stream within the KCWA boundaries, and Lake Isabella is the only major conservation storage facility on the Kern River. The population of KCWA increased from less than 300,000 in 1960 to about 400,000 in 1983.

The historical growth of irrigated agriculture in this arid region has depended, in part, on the concurrent development of water supplies. About 1860, the first local canals were constructed and began diverting water from the Kern River. Before that time, commercial agriculture was generally limited to dry-farm grain production and livestock grazing. Initially, the canal system was developed on the higher portion of the Kern River alluvial fan, which is well-drained and relatively salt-free. The canal system was expanded through the turn of the century, with corresponding increases in irrigated agriculture.

Shortly after 1900, local farm operators began to pump ground water to irrigate lands outside the area served by the canal system. As pumping increased, the high water tables in

adjacent saline low-lying lands were lowered. This allowed reclamation of these lands, and further increases in ground water pumping to irrigate them.

As early as 1920, it was evident from the continuing decline in ground water levels that water would have to be imported to sustain the expanding agriculture industry. The first import project was completed almost 30 years later. The CVP's Friant-Kern Canal began delivering water from storage on the San Joaquin River to the east side of the San Joaquin Valley in 1949. The second import project was the SWP's California Aqueduct, which first delivered water to KCWA in 1968. The availability of SWP water permitted agricultural expansion to occur in water districts along the west side of the valley that have no other water sources. The SWP also provided water to other KCWA member units that were water-deficient. In a normal year, about 1 million acre-feet of SWP water are delivered to the KCWA. About 90 percent of this is classified as agricultural water.

Currently, there are about 950,000 acres of irrigated agriculture in the San Joaquin Valley portion of Kern County. Over 600,000 acres of this farmland are situated in KCWA member units that receive water from the SWP. The current general proportions of crops grown in the service areas of the KCWA member units that receive SWP water are estimated as follows:

<u>Crop</u>	<u>Percent of Area</u>
Cotton	40
Other field crops	28
Orchards and vineyards	22
Truck Crops	10
Total	100

The Agency's sphere of influence encompasses all of Kern County. This 8,064-square-mile area includes the southern end of the San Joaquin Valley

and extends across the Sierra Nevada and Tehachapi Mountains into the Mojave Desert. KCWA provides wholesale agricultural and urban water to its member water districts. Not all of the water districts in the county are member units of KCWA, however. Antelope Valley-East Kern Water Agency and Devil's Den Water District have autonomous contracts for SWP water. KCWA provides firm water service to 16 member units: Berrenda Mesa WD, Lost Hills WD, Belridge WSD, Semitropic WSD, Buttonwillow Improvement District of Semitropic WSD, Pond Poso Improvement District of Semitropic WSD, Cawelo Improvement District No. 4 of KCWA, Rosedale-Rio Bravo WSD, Buena Vista WSD, Kern Delta WD, Henry Miller WD West Kern WD, Wheeler Ridge-Maricopa WSD, Tehachapi-Cummings CWD and Tejon-Castac WD. Fourteen of the member units are located in the San Joaquin Valley and two are in the Tehachapi Mountains.

The Cross Valley Canal (CVC), extending from the California Aqueduct to Bakersfield, was completed in 1975. The CVC is a joint-use facility funded by six Kern County districts and several Tulare County entities, but is administered and operated by KCWA. Five of the six Kern County districts are member units of the KCWA.

Other sources of water supply to Kern County districts not part of KCWA include the CVP, which imports water to Kern County via the Friant-Kern Canal and via the California Aqueduct through a wheeling agreement with the State. CVP water wheeled through the Aqueduct is used by Arvin-Edison WSD. In exchange, nine CVP contractors take an average of about 270,000 acre-feet per year from the Friant-Kern Canal. Also, local surface water is obtained from the Kern River, with small amounts available from minor streams; an average of about 800,000 acre-feet of water is available from local surface sources each year. Ground water is used extensively within the Agency's member

units; however, current data indicate that overdraft (ground water withdrawals exceeding recharge) is about 200,000 acre-feet per year. Annual ground water pumping fluctuates from about 760,000 to about 2,000,000 acre-feet, with an average of about 800,000 acre-feet.

KCWA's Improvement District No. 4 wholesales treated water to three urban water purveyors in the Bakersfield area: California Water Service Company, which also operates systems within the City of Bakersfield; East Niles Community Services District; and North of the River MWD. Another member unit, West Kern WD, retails urban water in its service area. Tehachapi-Cummings CWD wholesales urban water to purveyors in its service area and retails agricultural water directly to users. Tejon-Castac WD does not yet take any SWP water. The remaining member units receive agricultural water only, which they retail directly to users or percolate to ground water.

The only firm source of water to KCWA is the SWP, but it occasionally purchases Kern River and CVP supplies for ground water recharge. KCWA's Improvement District No. 4 also regularly exchanges its SWP water for Kern River water to use in its water purification plant in Bakersfield. In addition to saving CVC pumping costs, such exchanges provide a better quality water supply to the treatment facilities. Kern River water has low mineral and organic content and costs less to treat than does SWP water.

The valley portion of KCWA is located in the Tulare Lake Basin, which has no outflow to the sea. In recent years, some flood flows have been exported via the Kern River Intertie to the California Aqueduct in order to minimize flood damages. The Intertie was completed in 1976, and was first put into operation in 1978. A total of about 339,000 acre-feet of flood water was diverted into the Aqueduct through

1982. An additional 798,000 acre-feet were diverted between December 1982 and February 1984, when the Intertie was in almost continuous operation. Diversions into the Aqueduct from the Intertie are generally used to meet downstream entitlement demands in the San Joaquin Valley and Southern California. In 1978 and 1983, however, temporary pumps were installed on check structures to permit deliveries from Aqueduct turnouts north of the Intertie. These pump-back deliveries amounted to about 18,000 acre-feet in 1978, and about 250,000 acre-feet in 1983.

Napa County Flood Control and Water Conservation District

The Napa County Flood Control and Water Conservation District (NCFC&WCD) has the same boundaries as Napa County. Its land area is about 758 square miles, characterized by the mountainous terrain and narrow valleys of the inner Coastal Range. Most development and water use occur in the 84 square miles of the Napa Valley. The valley has warm, dry summers and cool, moist winters, with an average annual rainfall that ranges from 23 inches at Napa to 32 inches at St. Helena. The valley is drained by the Napa River and its tributaries, including Conn and Milliken Creeks.

NCFC&WCD was established in 1951 by special act of the Legislature to, among other things, develop local water supplies, import water supplies, and work with the State in obtaining water supplies. The District contains numerous water service agencies within its boundaries, but only the City of Napa (Napa) and American Canyon County Water District (American Canyon) currently contract for SWP water. However, through a wheeling agreement with Napa, the town of Yountville is now receiving SWP water and in about December 1984 the city of Calistoga will begin receiving SWP water.

The population of NCFC&WCD increased from less than 50,000 in 1950 to over

100,000 in 1983. Approximately 65 percent of the District's population lives within the boundaries of the four water service agencies that will be receiving SWP water.

NCFC&WCD has a contract with the State for delivery of SWP water to the local retailers in the valley. The District also has an interim contract with the Solano County Flood Control and Water Conservation District to take up to 12,500 acre-feet per year of Solano Project water from Lake Berryessa for use in the valley. This contract will expire when Phase II of the North Bay Aqueduct is completed to the Delta (currently scheduled for 1987). Another interim agreement allows NCFC&WCD to divert additional water from Lake Berryessa to Napa Valley. This agreement involves about 6,000 acre-feet of water reserved under water rights granted for the Putah Creek area, but which is not yet being used. However, a third agreement (June 1981) limits the combined total of the previous two agreements to 7,500 acre-feet in any one year. Water diverted from Lake Berryessa under both interim agreements is being delivered via the Putah South Canal of the federal Solano Project and Phase I of the North Bay Aqueduct. NCFC&WCD has no other sources of supply or distribution.

Three of the four current and future SWP water users in Napa Valley also obtain supplies from sources other than NCFC&WCD. In 1980, Napa derived about 60 percent of its water supply from NCFC&WCD, with the remainder from local surface supplies. Napa's surface water is supplied from Lakes Milliken and Hennessey. The Lake Milliken supply has been fully used, but, due to quality problems, the Lake Hennessey supply has been used only as necessary. Napa has recently completed a new water treatment plant and now will be able to use the Lake Hennessey supply more fully.

Calistoga currently derives about one-fourth of its supply from ground water and the remainder from Kimball Reservoir.

In the past, Yountville has received water indirectly from Rector Reservoir, which is operated by the Department of Veterans Affairs for the veterans' home, but recently the Department of Public Health ruled that improvements must be made to the water treatment plant for that source. Rather than improve the treatment plant, the Department of Veterans Affairs has activated an old contract whereby Napa provides an inexpensive supply of

water. Both Yountville and the veterans' home are now being served by Napa, although Napa wants the Department of Veterans Affairs to take the steps necessary to again use Rector Reservoir water. Yountville will probably continue to receive water from Napa through a wheeling agreement.

The present and projected population, urban water demands, and water supplies available for urban use in Napa Valley are summarized in Table 29. The SWP supply shown is the full contracted-for entitlement, which requires completion of Phase II of the North Bay Aqueduct.

TABLE 29: PRESENT AND PROJECTED POPULATION, URBAN WATER DEMANDS, AND URBAN WATER SUPPLIES FOR NAPA VALLEY.

Item	Year			
	1980	1990	2000	2010
Population^(a)				
Napa	50,400	49,000	53,400	57,200
American Canyon	5,900	9,400	9,500	9,700
Calistoga	3,900	7,000	8,200	9,000
Yountville	1,500	1,500	1,700	1,700
Remainder of Valley	36,000	37,900	38,900	40,100
Total	97,700	104,800	111,700	117,700
Urban Water Demand (Acre-Feet)^(b)				
SWP Retailers	14,100	14,200	15,500	16,600
Remainder of Valley	8,600	8,500	8,700	9,000
Total	22,700	22,700	24,200	25,600
Major Urban Water Supplies (Acre-Feet)				
Local Reservoirs	16,000	16,000	16,000	16,000
Local Springs, Wells, Etc.	2,300	2,300	2,300	2,300
Interim Agreements, Solano Project and Putah Creek	7,500	--	--	--
SWP, Full Entitlements	--	6,700	13,000	18,800
Total	25,800	25,000	31,300	37,100

a) Based on 1980 census and projections by Association of Bay Area Governments.
 b) Based on data from EIR for North Bay Aqueduct, Phase II.

Solano County Flood Control and Water Conservation District

The Solano County Flood Control and Water Conservation District (SCFC&WCD) includes all of Solano County plus the campus of the University of California at Davis in Yolo County. The land area of SCFC&WCD is about 828 square miles, with gently sloping valley lands on the east giving way to the Coast Range on the west. The Sacramento River flows along the District's east boundary, and Putah Creek, along the north boundary. The south boundary is formed by the upper bays of the San Francisco Bay estuary. SCFC&WCD has warm, dry summers and cool, moist winters, with the climate along the bays somewhat more moderate than that of the inland area. The average annual rainfall generally ranges from 16 to 25 inches, with larger amounts in the higher elevations of the Coast Range.

SCFC&WCD was established in 1951 by special act of the Legislature to control and conserve surface water supplies and to contract with other entities for water supplies. There are approximately 15 urban and agricultural water service agencies within the District's boundaries, but when the North Bay Aqueduct is completed in 1987, the District's delivery of SWP water will be limited to five urban retailers: the cities of Vallejo, Benicia, Fairfield, Suisun City, and Vacaville.

SCFC&WCD's population increased from about 105,000 in 1950 to 258,000 in 1983. About 88 percent of the District's population lives within the boundaries of the five water service agencies that will be receiving SWP water.

SCFC&WCD presently has one main source of water. It contracts with the USBR for Solano Project water and wholesales it to several urban and agricultural water agencies, including the five cities that will be receiving SWP water. SCFC&WCD is responsible for the

operation and maintenance of the Solano Project, but subcontracts these duties to Solano Irrigation District (SID), which is the major agricultural water agency in the County.

The five urban water service agencies that will be receiving SWP water from SCFC&WCD also have other sources of supply as follows:

<u>Percent of 1980 Supply From</u>			
<u>Retailer</u>	<u>SCFC&WCD</u>	<u>Ground Water</u>	<u>Local Surface</u>
Vallejo	15	--	85
Benicia	90	--	10
Fairfield	100	--	--
Suisun City	65	35	--
Vacaville	20	80	--

All 1980 SCFC&WCD supplies were from the federal Solano Project, for which the cities, except Benicia, have long-term contracts with the District. Benicia has an interim contract, pending completion of the North Bay Aqueduct. In addition to its SCFC&WCD contract amount, Fairfield has an agreement with SID to exchange treated waste water for an equal amount of SID's Solano Project water. Currently, about 3,000 acre-feet per year are exchanged under the agreement. Suisun City has been purchasing additional Solano Project water from SID.

Vallejo's surface supplies include Lakes Curry, Madigan, Frey, and Chabot, and deliveries from the Delta via the Cache Slough Conduit. Benicia's surface supplies are derived from Lake Herman.

The present and projected population, water demands, and supplies available for urban use by the five urban SCFC&WCD retailers that will receive SWP water are shown in Table 30. The SWP supply is the full contracted-for entitlement, which requires transportation and storage facilities in addition to those currently in operation.

TABLE 30: PRESENT AND PROJECTED POPULATION, URBAN WATER DEMANDS, AND URBAN WATER SUPPLIES FOR SOLANO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT.

Item	Year			
	1980	1990	2000	2010
Population ^(a)				
Vallejo	90,900	107,600	120,500	133,100
Benicia	16,200	26,900	30,500	35,500
Fairfield	46,300	62,400	71,800	79,900
Suisun City	12,500	13,500	16,100	18,900
Vacaville	40,700	83,900	121,200	158,900
Remainder of District	28,600	48,100	68,600	88,600
District Total	<u>235,200</u>	<u>342,400</u>	<u>428,700</u>	<u>514,900</u>
Urban Water Demand (Acre-Feet) ^(b)				
SWP Retailers	49,300	66,400	80,900	95,300
Remainder of District	5,600	9,100	13,000	16,900
Total	<u>54,900</u>	<u>75,500</u>	<u>93,900</u>	<u>112,200</u>
Major Urban Water Supplies (Acre-Feet)				
Solano Project	31,100	31,100	31,100	31,100
Waste Water Exchange ^(c)	3,000	3,000	3,000	3,000
Interim Solano Project	12,000	--	--	--
Local Surface Water	18,000	18,000	18,000	18,000
Ground Water	6,800	6,800	6,800	6,800
SWP, Full Entitlement	500	42,000	42,000	42,000
Total	<u>71,400</u>	<u>100,900</u>	<u>100,900</u>	<u>100,900</u>

- a) Based on 1980 census and projections of Association of Bay Area Governments. More recent projections indicate a somewhat slower population growth rate.
- b) Based on data from EIR for North Bay Aqueduct, Phase II.
- c) The contract covers exchanges up to 6,000 acre-feet, but an area of use has not been identified for more than 3,000 acre-feet.

The Metropolitan Water District of Southern California

The Metropolitan Water District of Southern California (MWDSC) covers over 5,100 square miles of the coastal plain in Southern California, including portions of the counties of Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura. Major streams in the MWDSC service area include the Santa Clara, Los Angeles, Rio Hondo, San Gabriel, Santa Ana, Santa Margarita, San Dieguito, San Diego, and Sweetwater Rivers. The climate is characterized by warm, dry summers and mild winters, with average annual rainfall ranging from 10 inches in San Diego to 13 inches in San Bernardino to about 15 inches in Los Angeles and Oxnard.

The population of MWDSC's service area has increased from less than 8 million in 1960 to about 12.6 million in 1983, slightly more than half the population of the State. The assessed valuation in 1983 was almost \$380 billion.

MWDSC was established in 1928 by special act of the Legislature and local public vote. Its purposes are to develop and sell water at wholesale for municipal and industrial use. It may sell surplus water for other beneficial purposes, including agriculture.

There are 27 member agencies in MWDSC, consisting of 14 cities, 12 municipal water districts, and one county water authority. The member agencies are listed in Table 31.

MWDSC is governed by a Board of Directors consisting of at least one director from each member agency, with additional directors in proportion to the assessed valuation of the agencies. The directors serve without pay from MWDSC. There were 54 directors in 1983.

MWDSC wholesales water to the member agencies, who, in turn, either retail

the water directly to the customers, or wholesale it to other public agencies and private water companies. There are about 200 of these subagencies in the MWDSC service area. Table 31 also shows the current major sources of water supply of each of the MWDSC member agencies' service areas.

The MWDSC service area has five main sources of water: natural ground water; captured local surface flows; the Colorado River Aqueduct; the Los Angeles Aqueduct; and the California Aqueduct. Reclaimed water is also used in MWDSC's service area. The sources available to MWDSC are the Colorado River and SWP supplies.

MWDSC owns and operates the Colorado River Aqueduct, which went into operation in 1941 and transports Colorado River water almost 250 miles to its terminus near Riverside. MWDSC and several other Southern California water agencies contract with the federal government for water supplies from the Colorado River. Prior to executing the Colorado River contracts, the California agencies agreed among themselves on priorities for available water. Under this agreement (the Seven Party Agreement), MWDSC had a fourth priority for 550,000 acre-feet per year and lower priorities for an additional 662,000 acre-feet, for a total of 1,212,000 acre-feet per year. This supply was severely affected by the 1964 United States Supreme Court decree in Arizona v. California and the supplemental decree rendered in 1979.

The 1964 decree limited California's apportionments to Colorado River water to the first four priorities, unless there is surplus flow (over 7.5 million acre-feet per year for lower basin use) or unless water apportioned to another state will not be needed or used by that state. The impact of the decision will be fully felt later in this decade when the Central Arizona Project is completed and in operation. At that time, MWDSC will be limited to its 550,000-

**TABLE 31: CURRENT MAJOR SOURCES OF SUPPLY IN
MWDC MEMBER AGENCIES' SERVICE AREAS**

Member Agency	Percent of Supply From				Total Annual Supply 1979-1980 ^(b) (acre-feet)
	MWDC ^(a)	Local Surface Water	Ground Water	Los Angeles Aqueduct	
Cities					
Anaheim	35	--	65	--	58,100
Beverly Hills	100	--	--	--	13,300
Burbank	95	--	5	--	22,000
Compton	30	--	70	--	8,500
Fullerton	50	--	50	--	31,200
Glendale	90	--	10	--	25,500
Long Beach	55	--	45	--	67,500
Los Angeles	5	--	15	80	568,400
Pasadena	55	7	38	--	33,300
San Fernando	--	--	100	--	3,300
San Marino ^(c)	--	--	100	--	4,800
Santa Ana	30	--	70	--	39,400
Santa Monica	55	--	45	--	16,900
Torrance	75	--	25	--	22,100
Municipal Water Districts					
Calleguas ^(d)	78	--	22	--	95,200
Central Basin ^(d)	28	--	72	--	218,400
Chino Basin ^(d)	10	11	79	--	172,400
Coastal ^(d)	100	--	--	--	36,900
Eastern ^(e)	29	3	68	--	116,300
Foothill ^(d)	59	2	39	--	13,900
Las Virgenes	100	--	--	--	9,100
Orange County ^(d)	75	--	25	--	345,000
Three Valleys ^(d)	44	--	56	--	88,400
Upper San Gabriel Valley ^(d)	5	--	95	--	185,900
West Basin ^(d)	75	--	25	--	173,900
Western of Riverside County ^(e)	25	--	75	--	195,200
San Diego County Water Authority ^(d)	90	10	--	--	<u>442,900</u>
Total					3,007,800

- a) Includes direct deliveries and in-lieu ground water replenishment.
- b) Percentages by source are current averages and cannot be applied specifically to the 1979-80 totals.
- c) Contracts with California American Water Company for water service.
- d) Wholesales water to other public agencies and/or private water companies.
- e) Wholesales and retails water.

acre-foot entitlement in the fourth priority as a firm supply, as provided by operating criteria promulgated by the Secretary of the Interior.

MWDSC's second source of water is the SWP. MWDSC has a contract with the State for delivery of water from the Delta via the California Aqueduct to

four points near the northern and eastern boundaries of MWDSC's service area. Deliveries began in 1972. Entitlements build up to a maximum of 2,011,500 acre-feet in 1990, although actual deliveries are not expected to reach this amount until after the turn of the century.



MWDSC's Joseph Jensen Filtration Plant near San Fernando treats SWP water delivered from Castaic Lake via MWDSC's Foothill Feeder.

Tulare Lake Basin Water Storage District

The Tulare Lake Basin Water Storage District (TLBWS) is located in the trough of the San Joaquin Valley, with 98 percent of its acreage in southeastern Kings County and 2 percent in southwestern Tulare County. The land area of the District encompasses about 189,000 acres in the Tulare Lakebed. TLBWS lands are virtually level at elevations 170 to 200 feet above sea level. Nearly all land in TLBWS is farmed, except for land left fallow in the normal course of crop rotation.

Summers are relatively hot and dry, with daily temperatures above 100 degrees Fahrenheit occurring frequently in July and August. Winters are mild and semiarid, with some frost. Annual precipitation ranges from about 3 to 15 inches per year. Ground or tule fogs are common during the winter months, and occasionally persist for days or weeks.

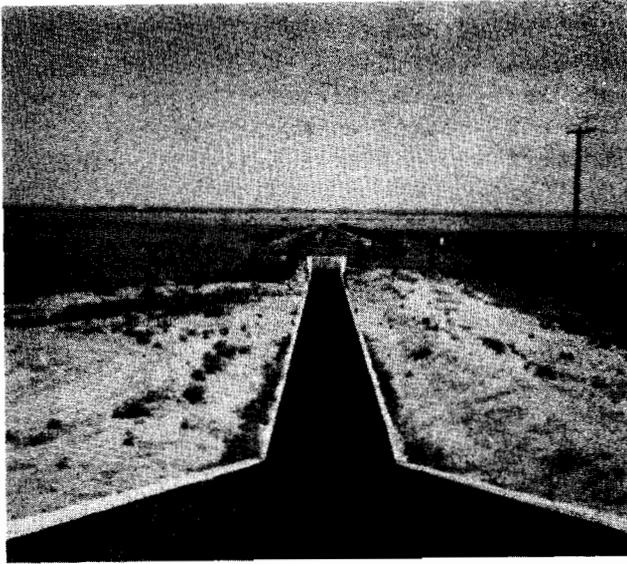
Major streams in the TLBWS area are the Kings River, entering the District from the north; the Kaweah and Tule Rivers, entering from the east; and the Kern River, entering from the south. The only minor stream of significance is Deer Creek. The Tulare Lakebed is the natural terminal for the Kaweah, Tule, and Kern Rivers and Deer Creek. Excess Kings River flows are first diverted north into the San Joaquin River system, with the remaining excess flows then being discharged into Tulare Lake. The basin is considered to be closed because it has no outlet to the sea. Historically, extreme flood flows would occasionally spill over the low northern rim of the Basin and flow to the ocean via the San Joaquin River and San Francisco Bay. However, agricultural development and flood control projects have essentially eliminated this possibility, and the last time water flowed out of the Basin naturally was 1878.

In recent years, some flood flows have been exported from the Basin via the Kern River Intertie with the California Aqueduct and through four pumping stations to the North Fork of the Kings River. The Intertie diversion between December 3, 1982 and February 10, 1984 totaled nearly 798,000 acre-feet. During November and December 1983 and January 1984, a total of approximately 76,000 acre-feet was pumped from Tulare Lake to the North Fork of the Kings River for disposal into the San Joaquin River. In addition, excess water from the Kings River is diverted into San Francisco Bay via Fresno Slough and the San Joaquin River. To the extent that capacity is not available in Fresno Slough, the remaining excess is spilled into Tulare Lake. All other water that is imported or produced in the basin stays in the basin until it is consumptively used through evapotranspiration of growing crops, or evaporates.

The existing canal system for the distribution of irrigation water supplies within TLBWS is, for the most part, privately owned by a number of mutual water companies and individual landowners and farm operators. Some publicly owned facilities are available for use by landowners within their respective districts.

The TLBWS owns conveyance laterals from the California Aqueduct to the exterior boundaries of the irrigated portion of the District. However, the District itself does not have an internal distribution system and is not involved in the distribution or administration of water within its boundaries.

The existing distribution system is, with a few exceptions, set up for farming in "sections" of approximately 640 acres each. Distribution from main canals to individual fields is provided largely by smaller privately owned canals.



Tulare Lake Basin Water Storage District Turnout TLB A conveys up to 350 cfs northeast from the California Aqueduct.

TLBWS D was organized in 1926 to acquire, improve, and operate the necessary works for the storage and distribution of water, and to contract with other entities for water supplies. The District obtains funds through assessments on land and charges for the use of water. The District is governed by an 11-member Board of Directors elected at large by vote of landowners. Its headquarters is located in Corcoran.

Although not a District function, approximately 80 percent of TLBWS D lands have access to a system for collection and disposal of subsurface agricultural drainage water by the Tulare Lake Drainage District. It is expected that about one-third of the TLBWS D lands will ultimately be drained.

The TLBWS D service area has three main sources of water: water rights in local streams (principally the Kings River), ground water, and imported SWP supplies. Occasionally, residual flood waters impounded in the Tulare Lakebed are also available.

The use of each source of water varies considerably from year to year, depending on hydrologic conditions. Since most ground water is pumped by individual users who do not measure extractions, it is difficult to quantify this use. However, quantities can be calculated, based on estimated crop use and other measured supplies.

With the exception of a few isolated privately owned wells of marginal quality, no ground water of satisfactory quality has been developed under the southwestern two-thirds of TLBWS D. In the northern one-third of the District there is good quality ground water, but it is at such great depths that little is pumped. Consequently, the principal ground water supply is imported from private well fields east of the District. TLBWS D neither owns nor operates any of these wells. Current ground water replenishment takes place directly through the natural recharge process and indirectly through use of SWP water in lieu of ground water pumping.

The supplies from river runoff vary widely from year to year, with very small supplies in dry years and excess supplies during flood years. Surface water has been obtained for TLBWS D's service area from seven separate water rights on the Kings River and from minor rights on the Kern, Kaweah, and Tule Rivers and Deer Creek. Five of the seven water rights to the Kings River are held by mutual water companies: The Tulare Lake Canal Company, the Southeast Lake Water Company, the Corcoran Irrigation Company, the Peoples Ditch Company, and the Last Chance Water Ditch Company. The remaining two water rights are held by public districts -- TLBWS D itself and the Cohn Central Consolidated Reclamation District No. 761. The TLBWS D has the lowest priority right to Kings River flows and so receives no flow in dry years. The District also has rights on the Tule River. The Kaweah and Kern Rivers rarely reach the District, except during very wet years.

The Kern, Kings, Kaweah, and Tule Rivers are controlled to a considerable extent by dams and reservoirs that were constructed primarily for flood control. In some years, flood flows exceed the reservoirs' capacities and various portions of the TLBWS service area are inundated. During those years when winter flooding occurs (about one year out of three), the flood water is impounded in diked cells in the lake-bed. About half of this supply is used for irrigation of adjacent lands and half of it evaporates. This water is free, and may be used by any consumer with the physical capability (conveyance facilities) of doing so. Due to abnormally high runoff from streams tributary to Tulare Lake in 1982-83, 82,000 acres usually farmed were inundated by approximately 850,000 acre-feet of flood water in July 1983.

TLBWS contracts with the State for delivery of water imported from the Delta via the California Aqueduct. The entire amount of the imported SWP supply is delivered directly to the agricult-

ural water users. In 1978, Tulare Lake interests purchased the Hacienda Ranch, and in 1981 the District acquired the SWP entitlement water contracted through the Hacienda Water District.

The present and projected firm supplies available to TLBWS are summarized in Table 32. The SWP supply is the full contracted-for entitlement, which requires construction of SWP facilities in addition to those currently in operation.

DWR's estimate of present and projected applied agricultural water demand for the TLBWS is 357,000 acre-feet per year. This estimate is based on a mean applied water requirement of 2.1 acre-feet per acre, which is nearly equal to the evapo-transpiration requirement for typical crops grown in the District. This figure is based on the cropping pattern for 1980, a net total of 170,000 acres. It would not change substantially unless drastic changes were made in the crops grown.

TABLE 32: PRESENT AND PROJECTED WATER SUPPLIES AVAILABLE TO TULARE LAKE BASIN WATER STORAGE DISTRICT

Source	Acre-Feet Per Year			
	1980	1990	2000	2010
Ground Water ^(a)	75,000	75,000	75,000	75,000
Local Surface Supplies ^(b)	151,000	151,000	151,000	151,000
SWP, Full Entitlement ^(c)	71,700	118,500	118,500	118,500
Total	297,100	344,500	344,500	344,500

- a) Estimated safe yield from DWR Bulletin 119-11, "Feasibility of Serving the Tulare Lake Basin Water Storage District from the State Water Project", May 1965.
- b) From "Report on Irrigation, Drainage and Flooding in the Tulare Lake Basin," September 1981.
- c) Includes entitlement supplies from Hacienda Water District, which was merged with TLBWS in 1981.

APPENDIX B
DATA AND COMPUTATIONS USED IN
DETERMINING WATER CHARGES FOR 1985

APPENDIX B

DATA AND COMPUTATIONS USED
IN DETERMINING WATER CHARGES FOR 1985

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APPENDIX B
DATA AND COMPUTATIONS USED IN
DETERMINING WATER CHARGES FOR 1985

Each year, DWR 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 performs yearly 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 1985 and is based on established data, both known and projected, on the SWP as of June 30, 1984. 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 report.

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 either for the conservation and development of water supply, or for the

conveyance of such supply to SWP service areas, are included in charges to water contractors. The Standard Provisions classify these facilities as "Project conservation facilities" and "Project transportation facilities." Following is a list of the principal facilities in each classification.

Project Conservation Facilities

- o Frenchman Dam and Lake;
- o Grizzly Valley Dam and Lake Davis;
- o Antelope Dam and Lake;
- o Oroville Dam and Lake;
- o Oroville Power Facilities;
- o Delta Facilities;
- o Additional Conservation Facilities;
- o A portion of the California Aqueduct from the Delta to Dos Amigos Pumping Plant;
- o San Luis Dam, Reservoir, and Pumping-Generating Plant.

Project Transportation Facilities

- o Grizzly Valley Pipeline;
- o North Bay Aqueduct;
- o South Bay Aqueduct (including Del Valle Dam and Lake Del Valle);
- o 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;
- o Off-Aqueduct Power Facilities (Reid Gardner Unit No.4, Bottle Rock Powerplant, South Geysers Powerplant).

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LEGEND

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hypothetical rates, if received for all actual water delivered to date plus estimates of entitlement delivery during the project repayment period, will produce a sum at the end of the project repayment period equivalent to those total charges required under a water supply contract, with interest at the project interest rate.

The Standard Provisions provide for two basic annual charges for project water:

- o 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;
- o 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 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:

- o Conservation and Transportation capital cost components, which will return to the State all reimbursable capital costs;
- o Conservation and Transportation minimum OMP&R components, which will return to the State all reimbursable operating costs that do not depend on water quantities actually delivered to the contractors;
- o an Off-Aqueduct component that will return to the State all costs associated with Off-Aqueduct power facilities;
- o a Transportation variable OMP&R component, which will return to the State all reimbursable operating costs that depend on, and vary with, water quantities actually delivered to the contractors.

The Transportation Charges do not include certain credits from contractor payments under supplemental agreements including the following:

- o payments for State construction of requested delivery structures that exceed actual construction costs of such structures;
- o 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 Charges for prior years through 1983 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" ad-

FIGURE B-2: COMPOSITION OF EACH COMPONENT OF TRANSPORTATION AND CONSERVATION CHARGE

<p>CAPITAL COSTS</p> <ol style="list-style-type: none"> 1. Design, right of way, and construction costs, except Off-Aqueduct power plant costs 2. O&M costs for a newly constructed reach prior to initial operation of the reach or facility 3. Activation costs 4. Planning costs for future SWP water supply facilities 5. Power costs allocated to initial filling of reservoirs 6. Credits for a portion of Hyatt-Thermalito power generation 7. Capitalized O&M costs (major repair work, etc.) 			
<p>MINIMUM OMP&R COSTS</p> <table style="width: 100%; border: none;"> <tr> <td style="vertical-align: top; width: 50%; padding-right: 20px;"> <ol style="list-style-type: none"> 1. Direct O&M costs <ol style="list-style-type: none"> a. Headquarters b. Field Divisions c. Insurance and FERC payments 2. General O&M costs <ol style="list-style-type: none"> a. Power planning for future facilities b. Contractor Accounting Office c. Financial and contract administration d. Water rights 3. Power costs related to pumping water to refill Aqueduct reservoirs (storage changes) 4. Power costs related to pumping of losses </td> <td style="vertical-align: top; width: 50%;"> <ol style="list-style-type: none"> 5. Other power costs <ol style="list-style-type: none"> a. Station service b. Transmission service costs related to "backbone" transmission facilities 6. Replacement deposits for SWP control centers 7. Off-Aqueduct power plant costs - bond service, bond cover costs (25% of bond service), bond reserves, transmission costs to provide service to "backbone", and O&M - less power sales allocated to Off-Aqueduct power plants 8. Credits for a portion of Hyatt-Thermalito power generation 9. Value of power used and generated by conservation facility power plants other than Hyatt-Thermalito </td> </tr> </table>		<ol style="list-style-type: none"> 1. Direct O&M costs <ol style="list-style-type: none"> a. Headquarters b. Field Divisions c. Insurance and FERC payments 2. General O&M costs <ol style="list-style-type: none"> a. Power planning for future facilities b. Contractor Accounting Office c. Financial and contract administration d. Water rights 3. Power costs related to pumping water to refill Aqueduct reservoirs (storage changes) 4. Power costs related to pumping of losses 	<ol style="list-style-type: none"> 5. Other power costs <ol style="list-style-type: none"> a. Station service b. Transmission service costs related to "backbone" transmission facilities 6. Replacement deposits for SWP control centers 7. Off-Aqueduct power plant costs - bond service, bond cover costs (25% of bond service), bond reserves, transmission costs to provide service to "backbone", and O&M - less power sales allocated to Off-Aqueduct power plants 8. Credits for a portion of Hyatt-Thermalito power generation 9. Value of power used and generated by conservation facility power plants other than Hyatt-Thermalito
<ol style="list-style-type: none"> 1. Direct O&M costs <ol style="list-style-type: none"> a. Headquarters b. Field Divisions c. Insurance and FERC payments 2. General O&M costs <ol style="list-style-type: none"> a. Power planning for future facilities b. Contractor Accounting Office c. Financial and contract administration d. Water rights 3. Power costs related to pumping water to refill Aqueduct reservoirs (storage changes) 4. Power costs related to pumping of losses 	<ol style="list-style-type: none"> 5. Other power costs <ol style="list-style-type: none"> a. Station service b. Transmission service costs related to "backbone" transmission facilities 6. Replacement deposits for SWP control centers 7. Off-Aqueduct power plant costs - bond service, bond cover costs (25% of bond service), bond reserves, transmission costs to provide service to "backbone", and O&M - less power sales allocated to Off-Aqueduct power plants 8. Credits for a portion of Hyatt-Thermalito power generation 9. Value of power used and generated by conservation facility power plants other than Hyatt-Thermalito 		
<p>TRANSPORTATION VARIABLE OMP&R COSTS</p> <ol style="list-style-type: none"> 1. Power purchase costs <ol style="list-style-type: none"> a. Capacity b. Energy c. Transmission costs to provide service to "backbone" transmission line d. Pine Flat bond service, O&M, and transmission costs allocated to Aqueduct pumping plants 2. Devil Canyon, Warner, 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 reflected in the Delta Water Rate) 4. Replacement deposits for pumping plants and power plants 5. Credits at Castaic Powerplant for peaking payments from Los Angeles Department of Water and Power 6. Credits from sale of excess SWP system power 			

adjustment are deducted from or added to the redetermined amounts of the Transportation Charge to be paid by respective contractors during 1985. 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 Charge are account-

ed 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 1985.

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.
- 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 in support of such statements 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. These payments are generally based on 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:

- o 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.
- o The minimum OMP&R component of the Transportation Charge and the operating component of the Delta Water 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.
- o The variable OMP&R component of the Transportation Charge is paid in varying monthly amounts, due the 15th of the second month following actual water delivery, on the basis of a unit charge per acre-foot established about July 1 of the preceding year. This unit charge is 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-5, following the text in this Appendix, shows repayment reaches that are the basis 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 on the proportionate maximum use of that reach by respective contractors under planned conditions of full development.

The derivation of ratios that represent the proportionate maximum use of each aqueduct reach by the respective contractors was described in Bulletin 132-70. Such factors are still valid -- except for the reaches of the California Aqueduct from the Delta to the Coastal Branch, for reaches of the South Bay Aqueduct, and for the Coastal Branch.

Revised ratios for the first reach of the California Aqueduct and for the South Bay Aqueduct are described in Bulletin 132-72 and reflect certain contract amendments executed early in 1972 regarding South Bay Aqueduct use (Bulletin 132-73, pages 33-35).

Bulletin 132-83 presented revised ratios for reaches in the Coastal Branch and in the California Aqueduct from the Delta to the Coastal Branch. These revisions reflect a contract amendment with Santa Barbara County Flood Control and Water Conservation District that reduced maximum annual entitlement from 57,700 acre-feet to 45,486 acre-feet.

Table B-1 presents the reach ratios currently applicable to reimbursable capital costs.

Table B-2 presents corresponding ratios for reimbursable minimum OMP&R costs. Requested excess capacity is omitted when deriving ratios in Table B-1 (because the capital costs for the excess capacity are paid on an incre-

mental-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:

- o 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.)
- o Credits for capacity and energy produced at aqueduct power recovery plants (treated as negative costs).
- o 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 on a schedule determined in 1970. Sinking fund payments for 1980 through 1983 and amounts projected from 1984 through 2035 are based on a revised replacement schedule. This schedule was updated for the 1983 water charges. DWR plans to update this 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 1984 through 2035 are based on contractor requests for future water deliveries. The Table B-5A quantities also include nonproject 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:

- o Made available to contractors at down-aqueduct delivery structures ("Deliveries -- Water Supply").

- o Required to initially fill down-aqueduct reaches and reservoirs, or for repayment of preconsolidation water used during construction ("Initial Fill Water").
- o Delivered to down-aqueduct recreation developments or used for fish and wildlife mitigation or enhancement ("Deliveries -- Recreation").
- o Lost through evaporation and seepage from all down-aqueduct reaches ("Operational Losses").
- o 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):

- o Net annual water amounts stored and projected to be stored in San Luis Reservoir.
- o 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 costs of the reservoir is transferred to the transportation variable OMP&R costs 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 the derivation of the costs that are allocated by the procedures described in the preceding section. 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-3. 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 redeterminations in this appendix reflect prices prevailing on December 31, 1983; future cost escalation will be reflected in subsequent bulletins.

Table B-7 presents a reconciliation of estimated total capital costs of each Project conservation facility and each Project transportation facility.

Table B-8 shows costs incurred and projected to be incurred by the State

in connection with each contractor's turnouts. Costs incurred by the State for both State- and contractor-constructed delivery structures are paid directly by the contractors for which the structures are built. (The State incurs design, review, and construction inspection costs in connection with contractor-constructed turnouts.)

Table B-9 lists costs 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:

- o additional costs incurred by the State for requested excess capacity;
- o advances, by water contractors, of funds for such costs;
- o credits for advances in excess of costs, which were applied to the respective contractors' installations 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 originally 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.

FIGURE B-3: 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 terminus 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 Powerplants and Switchyards.
- b) Percentage shown consists of 48.0 percent recreation and 26.8 percent flood control.
- c) Percentage shown consists of 44.9 percent recreation and 33.1 percent flood control.

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:

- o all direct labor charges for field operation and maintenance personnel, including associated indirect costs;
- o a distributed share of general operating costs that cannot be identified solely with one facility or aqueduct reach;
- o electric power transmission and station service costs allocable to aqueduct pumping and power recovery plants;
- o all costs for equipment, materials, and supplies and for replacement of electronic control systems;
- o 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);
- o credits, which offset those costs in (2) above, for deliveries drawn from reservoir storage;
- o escalation of projected operating costs at 6 percent per year through 1986.

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:

- o 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.
- o 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.
- o 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.
- o 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 that are included in 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

FIGURE B-4: CRITERIA FOR AMORTIZATION SCHEDULES

Contractor	Amortization of Allocated Capital Costs in 50 Equal Annual Installments, With Initial Payment Due in:								
	1963	1964	1965	1966	1968	1970	1973	a	b
Alameda County FC&WCD, Zone 7	● c								
Alameda County WD	●								
Antelope Valley-East Kern WA	●								
Castaic Lake WA.....		●							
County of Butte									●
County of Kings					●				
City of Yuba City									●
Coachella Valley WD		●							
Crestline-Lake Arrowhead WA		●							
Desert WA	● d								
Devil's Den WD								●	
Dudley Ridge WD								●	
Empire West Side ID.....								●	
Kern County WA: Ag use								●	
M&I use			●						
Littlerock Creek ID		●							
Mojave WA		●							
Napa County FC&WCD				●					
Oak Flat WD								●	
Palmdale WD		●							
Plumas County FC&WCD.....						●			
San Bernardino Valley MWD	●								
San Gabriel Valley MWD	● d								
San Geronio Pass WA	● d								
San Luis Obispo County FC&WCD		● e							
Santa Barbara County FC&WCD		● e							
Santa Clara Valley WD	●								
Solano County FC&WCD							●		
The Metropolitan WD-SC	●								
Tulare Lake Basin WSD.....								●	
Ventura County FCD		●							

- a Amortization of allocated capital costs on basis of equivalent unit rate applied to annual entitlements (Table B-4) within project repayment period.
- b Payments on Delta Water Charge only.
- c Principal payments on each annual capital cost prior to 1971 delayed until calendar year 1972, except payments for 1963.
- d Deferred and added to 1964 payment with accrued interest.
- e Exception: all principal and interest payments for costs of "Coastal Stub" are assumed deferred until 1976.

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 1985. Empire West Side Irrigation District and Devil's Den Water District also prepaid capital costs (see Table B-14 footnotes).

Both Table B-14 and Table C of the six contracts for Project water service below Devil Canyon and Castaic Powerplants include the capital costs reimbursable under the Devil Canyon-Castaic Contract.

Table B-15 summarizes the capital cost components of the Transportation Charge for each contractor for each year of the Project repayment period, based on the amortization schedules shown in Figure B-4. 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 Powerplants 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 Powerplants include the portion of operating costs payable under the Devil Canyon-Castaic Contract.

Under operating agreements with Kern County Water Agency concerning the early installation of units by Berrenda Mesa Water District in Las Perillas and Badger Hill Pumping Plants (see Bulletin 132-71, page 7), the Agency is billed for any additional operating costs caused by early installation of the units. Under this requirement, the following minimum OMP&R costs of Reach 31A are assigned directly to the Agency, with the remaining reach costs allocated by application of the proportionate-use ratios:

<u>Year</u>	<u>Direct Charge</u>	<u>Year</u>	<u>Direct Charge</u>
1969	\$ 46,511	1981	\$ 73,245
1970	46,302	1982	79,917
1971	139,682	1983	82,945
1972	109,782	1984	98,277
1973	71,716	1985	106,383
1974	98,851	1986	114,604
1975	125,003	1987	119,712
1976	137,531	1988	119,284
1977	120,168	1989	118,960
1978	152,760	1990	119,325
1979	118,799	1991	119,979
1980	144,511	Total.....	\$2,464,247

Table B-16B projects the annual costs of Off-Aqueduct Power Facilities allocated to each water contractor. These costs include bond service, deposits for reserves, operation and maintenance costs, fuel costs, and taxes and insurance. The General Bond Resolution, adopted October 1, 1979, requires that sufficient revenues be collected each year to cover all of these costs plus 25 percent of the annual bond service costs. Any revenues collected and not needed for bond service or bond reserves at the end of the year are refunded to the contractors in the following year. The

following tabulation shows the total annual Off-Aqueduct costs and an amount equal to 25 percent of the bond service costs for each year:

<u>YEAR</u>	<u>TOTAL ANNUAL COST</u>	<u>25% of BOND SERVICE</u>
1983	\$ 30,629,268	\$ 3,720,654
1984	80,486,702	8,947,745
1985	114,623,981	11,992,742
1986	125,722,170	12,609,015
1987	152,329,731	14,879,800
1988	156,131,850	15,247,418
1989	157,122,759	15,243,380
1990	151,877,218	15,244,331
1991	152,858,632	15,238,393
1992	151,834,159	15,235,718
1993	152,831,156	15,232,899
1994	151,801,859	15,229,259
1995	148,764,068	15,225,503
1996	147,732,633	15,221,435
1997	148,731,112	15,218,912
1998	144,616,971	15,213,817
1999	141,746,651	15,209,355
2000	136,864,646	15,205,845
2001	133,999,896	15,201,587
2002	129,127,019	15,200,125
2003	126,273,252	15,197,959
2004	121,422,380	15,202,401
2005	118,592,547	15,205,433
2006	113,745,328	15,211,477
2007	110,952,726	15,220,318
2008	106,046,047	15,212,599
2009	103,154,822	15,205,043
2010	98,253,461	15,198,795
2011	95,379,958	15,193,849
2012	90,851,925	15,262,502
2013	66,828,006	5,911,442
2014	61,215,453	5,927,418
2015	23,580,898	1,580,481
2016	9,189,262	607,600

The annual costs of 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 Statement of Charges is based on 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 on April

revisions in water delivery schedules for annual entitlement. A further adjustment is made the following year based on 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.

<u>Pumping Plant</u>	<u>kWh per acre-foot^(a)</u>	
	<u>At Plant</u>	<u>Cumulative From Delta</u>
Cache Slough	256	256
Cordelia	617 ^(b)	873
South Bay	797	797
Del Valle	72	869
Banks Delta	296	296
Dos Amigos	138	434
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
Las Perillas	77	511
Badger Hill	200	711

a) Includes transmission losses

b) Interim facility: 515 kWh/acre-foot

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:

- o An annual charge per acre-foot of projected water deliveries to all contractors served from or through each reach is determined so as to return to the State the projected variable OMP&R costs to be incurred for each reach.

- o 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 water quantities 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:

Year	Agency ^(a)	Pumping Plant	
		Dos Amigos	Las Perillas and Badger Hill
1972	KCWA	\$ 9,553	\$ 24,700
	TLBWSD	10	---
1973	KCWA	---	6,016
1974	KCWA	---	7,140
1975	KCWA	494	6,397
1976	KCWA	---	1,981
1978	KCWA	41,832	3,772
	DRWD	2,086	---
	Kings	43	---
	AVEK	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
 AVEK = 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 as shown in Table B-17 and the delivery quantities for each contractor from each reach as shown in Table B-5A, plus any costs for "extra peaking service". These estimated components, subsequently adjusted for prior overpayments or underpayments, are set forth in Table F of the respective water supply contracts.

Table B-19 summarizes the Annual Transportation Charges for each contractor (the sums of the corresponding amounts shown in Tables B-15, B-16A, B-16B and B-18.) These estimated payments, subsequently adjusted for prior overpayments or underpayments, are set forth in Table G of the respective water supply contracts. Both Table B-19 and Table G for the six contractors down-aqueduct from Devil Canyon and Castaic Powerplants include debt service and operating cost payments due under the Devil Canyon-Castaic Contract.

Delta Water Charges

Table B-20A shows the calculation of the Delta Water Rate for the "initial" conservation facilities applicable in 1985, 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 1985 water charges.

One contract has not yet been amended (Solano County Flood Control and Water Conservation District). The Delta Water Rate for this contractor is also shown in Table B-20A. Future charges to this contractor, projected in Table B-21, are based on rates determined under original provisions of the water supply contract.

Table B-20B shows the portion of the 1985 Delta Water Rates 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 thirty 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 1983, except for the drought year of 1977.

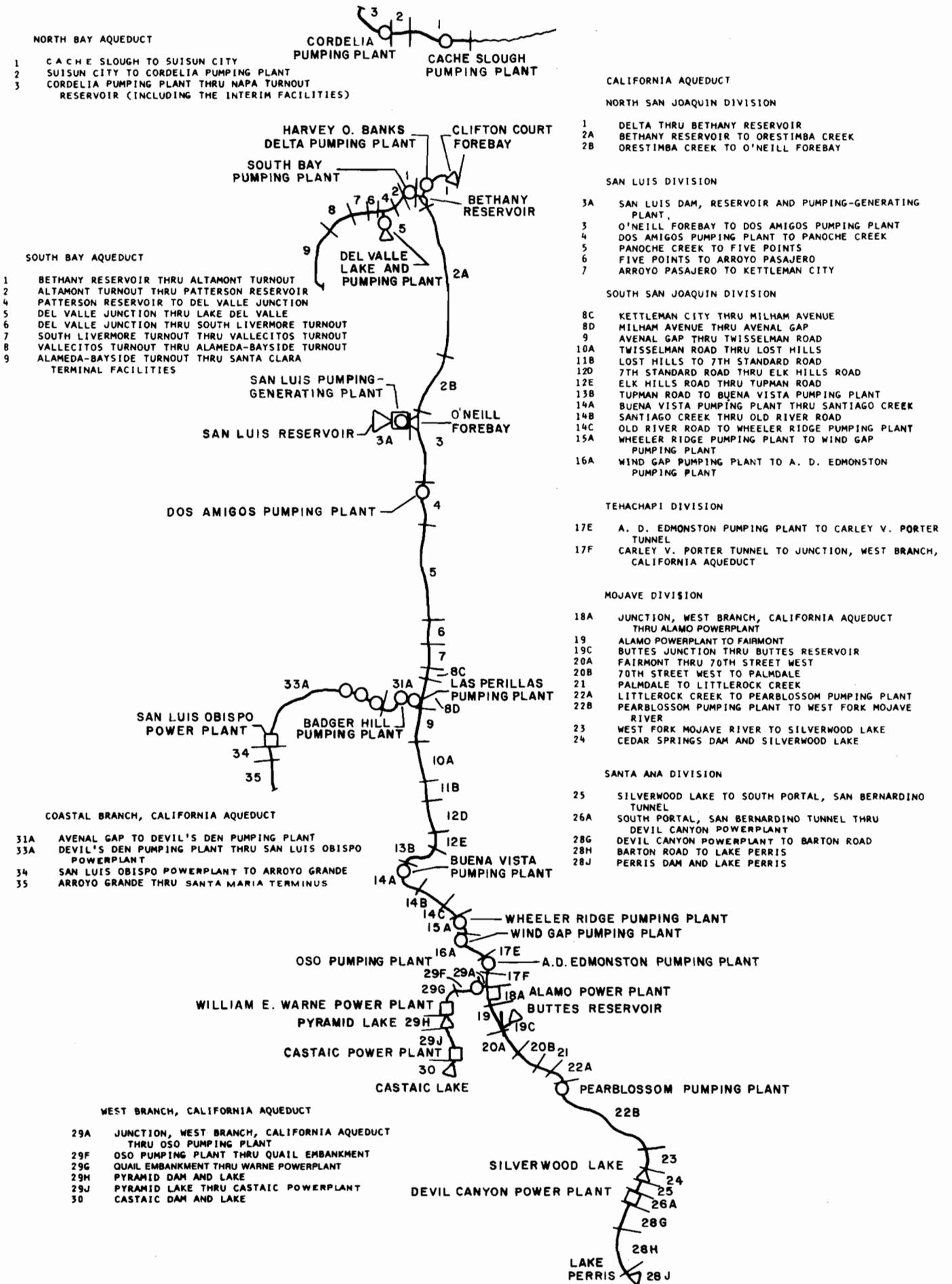
Table B-25 shows the quantities of surplus water delivered to long-term contractors during the period of May 1, 1973 through December 31, 1983.

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-5: REPAYMENT REACHES AND DESCRIPTIONS

PROJECT TRANSPORTATION FACILITIES



- NORTH BAY AQUEDUCT**
- 1 CACHE SLOUGH TO SUISUN CITY
 - 2 SUISUN CITY TO CORDELIA PUMPING PLANT
 - 3 CORDELIA PUMPING PLANT THRU NAPA TURNOUT RESERVOIR (INCLUDING THE INTERIM FACILITIES)

- CALIFORNIA AQUEDUCT**
- NORTH SAN JOAQUIN DIVISION**
- 1 DELTA THRU BETHANY RESERVOIR
 - 2A BETHANY RESERVOIR TO ORESTIMBA CREEK
 - 2B ORESTIMBA CREEK TO O'NEILL FOREBAY

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

- 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 PANOCHÉ CREEK
 - 5 PANOCHÉ 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

- 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

- 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

- 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

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	Cache Slough to Suisun City	.39808876	.60191124					1.00000000
2	Suisun City to Cordelia Pumping Plant	.39808861	.60191139					1.00000000
3	Cordelia Pumping Plant thru Napa Turnout Reservoir (Including the interim facilities)	1.00000000						1.00000000
South Bay Aqueduct								
1	Bethany Reservoir thru Altamont Turnout			.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 Litterlock Creek			.02318952		.02754717	.00696651	.04543034	
22A	Litterlock 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.								
28C	Devil Canyon Powerplant to Barton Road								
28H	Barton Road to Lake Perris								
28I	Perris Dam and Lake Perris								
29A	Junction, West Branch, Calif. Aqueduct thru Oso Pumping Plant				.02736564				
29F	Oso Pumping Plant thru Quail Embankment				.02736563				
29C	Quail Embankment thru Wame Powerplant				.02736564				
29H	Pyramid Dam and Lake				.02646380				
29I	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 Terminal	.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			

CALIFORNIA AREA									
Reach No.	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District	San Geronimo 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	Cache Slough to Suisun City	.39808876	.60191124					1.00000000
2	Suisun City to Cordelia Pumping Plant	.39808861	.60191139					1.00000000
3	Cordelia Pumping Plant thru Napa Turnout Reservoir (Including the interim facilities)	1.00000000						1.00000000
South Bay Aqueduct								
1	Bethany Reservoir thru Altamont Turnout			.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	.05355117
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			
29C	Quail Embankment thru Warner Powerplant				.02736564			
29H	Pyramid Dam and Lake				.02646380			
29I	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 Terminal	.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	.01788865	.00092879	.00266296	.02868253	.32080926	.00094875		.03671048
7	.00395753	.01789003	.00092896	.00266264	.02868156	.32086471	.00094872		.03671701
8C	.00390372	.01764648	.00091632	.00263593	.02836374	.31651560	.00093819		.036621709
8D	.00398843	.01802948		.00268958	.02895220	.32337797			.01795137
9					.03173493	.32315570			
10A					.03225002	.31237848			
11B					.03553316	.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			

CALIFORNIA AREA

Reach No.	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District	San Geronimo 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

Calendar Year	NORTH BAY AQUEDUCT		SOUTH BAY AQUEDUCT	CALIFORNIA					
	Reach 1	Reach 3	Reach 1	Reach 1	Reach 4	Reach 14A	Reach 15A	Reach 16A	Reach 17E
	Cache Slough Pumping Plant	Cordelia Pumping Plant (b)	South Bay and Del Valle Pumping Plants (c)	Harvey O. Banks Delta Pumping Plant	Dos Amigos Pumping Plant	Buena Vista Pumping Plant	Wheeler Ridge Pumping Plant	Wind Gap Pumping Plant	A.D. Edmonston Pumping Plant
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
1962	0	0	38,130	0	0	0	0	0	0
1963	0	0	58,871	0	0	0	0	0	0
1964	0	0	75,239	0	0	0	0	0	0
1965	0	0	146,297	0	0	0	0	0	0
1966	0	0	198,643	0	0	0	0	0	0
1967	0	0	229,629	26,982	0	0	0	0	0
1968	0	7,128	342,761	1,324,777	239,505	0	0	0	0
1969	0	8,557	279,751	855,304	143,403	0	0	0	0
1970	0	13,666	448,383	368,508	217,820	2,940	0	0	0
1971	0	10,626	422,057	597,946	229,306	156,540	23,021	18,577	29,067
1972	0	14,430	623,564	1,110,833	575,291	348,668	170,689	187,825	1,263,087
1973	0	14,453	485,534	918,234	493,776	511,904	514,487	883,725	3,139,297
1974	0	17,508	510,873	997,269	560,461	556,968	595,585	1,048,196	3,700,573
1975	0	14,801	382,106	1,353,916	561,089	650,781	707,038	1,394,918	4,853,538
1976	0	20,867	589,007	916,728	596,426	701,061	687,677	1,414,902	4,917,776
1977	0	22,640	541,803	653,304	191,906	170,689	173,496	337,890	1,130,422
1978	0	21,701	569,046	4,138,817	839,257	1,094,676	1,056,850	1,993,335	7,061,284
1979	0	16,249	621,602	3,421,367	1,019,385	849,644	832,056	1,669,651	5,751,042
1980	0	19,961	523,756	2,433,229	1,170,549	1,026,306	1,017,111	2,067,697	6,864,121
1981	0	21,711	607,892	2,331,253	1,305,953	1,289,103	1,264,814	2,547,394	8,980,956
1982	0	12,150	989,274	3,575,221	1,870,031	1,952,829	1,900,777	3,920,107	14,180,844
1983	0	3,052	195,326	1,866,446	413,310	430,891	408,519	693,114	2,144,867
1984	0	28,407	2,624,932	11,057,118	4,588,241	3,087,347	2,900,302	5,211,904	15,267,926
1985	0	26,030	2,390,694	12,085,092	6,244,994	6,480,914	6,675,434	13,438,670	44,725,742
1986	0	28,017	2,139,952	15,163,251	6,683,840	7,385,877	7,924,243	16,204,650	54,224,295
1987	45,654	37,005	2,167,012	15,135,160	7,126,999	7,955,663	8,544,217	17,516,393	58,681,302
1988	49,887	39,135	2,315,472	15,613,464	7,135,450	7,689,745	8,277,999	17,051,151	57,476,690
1989	54,087	43,339	2,372,295	16,728,359	7,254,124	7,972,713	8,523,093	17,431,912	57,566,453
1990	72,921	81,082	2,668,544	19,231,021	8,916,140	10,193,287	11,182,124	23,062,011	76,858,449
1991	80,534	88,576	2,788,235	20,138,589	9,363,117	10,547,972	11,598,335	23,947,481	79,879,877
1992	90,806	96,049	2,900,256	20,947,312	9,423,876	10,530,436	11,566,387	23,876,448	79,719,283
1993	102,927	104,413	2,848,538	21,108,759	9,842,260	11,110,819	12,264,616	25,360,615	85,100,196
1994	115,679	113,235	2,947,305	21,847,209	10,043,748	11,301,137	12,486,598	25,856,828	86,873,668
1995	149,257	123,970	3,053,177	22,407,972	10,440,096	11,782,708	13,043,912	27,067,456	91,045,361
1996	169,319	133,022	3,109,478	23,288,492	10,612,398	12,001,472	13,287,415	27,533,476	92,668,882
1997	180,048	143,773	3,202,358	23,572,280	11,057,697	12,369,379	13,694,300	28,447,037	95,394,282
1998	185,435	151,411	3,189,476	23,542,997	11,335,088	12,600,227	13,937,411	29,122,894	97,297,241
1999	198,777	165,070	3,304,193	24,788,496	11,985,415	13,246,646	14,680,500	30,760,935	102,325,833
2000	206,250	174,604	3,303,296	24,783,456	12,125,905	13,371,950	14,836,132	31,218,201	103,139,169
2001	220,586	190,091	3,438,789	26,024,956	12,681,769	14,010,814	15,529,333	32,637,134	107,769,807
2002	231,740	205,240	3,578,727	27,246,212	13,536,145	15,142,630	16,841,292	35,413,511	116,754,926
2003	235,973	215,194	3,598,767	27,375,168	13,430,039	15,000,103	16,650,628	34,844,053	114,773,462
2004	243,391	228,325	3,671,315	27,939,673	13,630,906	15,289,057	16,964,509	35,352,997	116,406,248
2005	249,495	238,957	3,699,797	28,052,785	13,778,274	15,561,662	17,276,440	35,867,489	118,064,059
2006	258,654	249,924	3,766,917	28,563,444	14,080,361	16,023,440	17,805,691	36,867,816	121,322,569
2007	266,893	264,755	3,842,005	29,720,501	14,498,441	16,428,732	18,399,399	38,277,504	126,134,260
2008	281,348	285,136	4,008,260	31,031,318	15,149,098	17,372,195	19,357,742	40,293,016	132,947,842
2009	278,539	286,787	3,908,412	30,289,190	14,758,007	16,868,663	18,781,510	39,073,179	128,728,328
2010	291,983	306,477	4,056,524	31,746,775	15,430,152	17,769,522	19,819,289	41,273,560	136,182,725
2011	299,223	318,538	4,076,464	31,836,876	15,499,460	17,855,897	19,916,904	41,479,828	136,859,661
2012	315,402	342,002	4,254,107	36,107,483	16,428,732	19,141,092	21,410,032	44,650,997	147,637,293
2013	315,595	345,162	4,160,095	32,965,441	15,982,761	18,535,890	20,710,665	43,166,503	142,501,302
2014	337,024	373,292	4,363,640	33,340,493	16,919,246	19,798,757	22,167,466	46,257,759	152,971,443
2015	367,078	411,255	4,668,253	37,361,686	18,165,360	21,435,741	24,041,370	50,230,672	166,465,648
2016	383,387	434,385	4,798,244	38,370,989	18,536,984	21,869,866	24,520,373	51,240,063	169,865,947
2017	399,759	457,742	4,927,303	38,654,475	18,966,955	22,643,945	25,412,155	53,133,182	176,314,280
2018	414,271	479,518	5,029,933	41,093,670	19,368,669	23,424,088	26,320,958	55,066,796	182,905,245
2019	420,419	493,891	5,053,730	42,481,009	19,274,808	23,499,597	26,403,762	55,148,871	183,498,879
2020	428,911	505,001	5,045,117	41,561,713	19,183,772	23,515,305	26,426,110	55,103,346	183,551,302
2021	431,146	508,726	5,061,386	40,751,230	19,380,056	23,873,759	26,883,910	56,217,427	187,577,453
2022	427,692	504,650	5,020,834	39,952,122	18,700,651	23,337,215	26,283,712	54,797,509	183,744,034
2023	429,316	506,567	5,039,905	41,869,814	18,619,860	23,698,067	26,715,150	55,334,651	186,611,473
2024	425,064	501,549	4,989,982	41,389,158	17,941,606	23,127,527	26,040,483	53,531,348	181,573,446
2025	427,940	504,943	5,023,744	40,377,876	18,325,396	23,752,333	26,787,206	54,726,197	186,981,197
2026	426,725	503,510	5,009,485	41,890,965	18,051,185	23,287,510	26,227,754	53,306,087	182,838,224
2027	429,419	506,689	5,041,114	41,883,421	18,398,794	23,851,509	26,901,198	54,463,000	187,757,836
2028	425,331	501,865	4,993,119	40,187,228	18,067,901	23,255,359	26,307,406	53,222,021	183,431,691
2029	427,974	504,983	5,024,147	40,394,482	18,371,058	23,645,367	26,756,015	54,427,114	187,654,629
2030	427,975	504,985	5,024,159	41,685,491	18,398,853	23,258,624	26,269,449	53,679,250	184,774,114
2031	431,430	509,061	5,064,713	41,491,134	18,250,193	23,700,559	26,858,762	55,186,305	189,608,653
2032	425,865	502,495	4,999,393	40,697,959	17,628,033	22,846,247	25,852,082	53,402,585	183,241,530
2033	432,128	509,884	5,072,907	42,118,693	18,058,772	23,324,726	26,416,851	54,939,455	187,734,372
2034	418,465	493,763	4,912,518	36,073,708	17,355,380	22,211,153	25,131,418	52,549,081	179,242,487
2035	441,422	520,852	5,182,023	47,163,664	18,601,346	23,779,336	26,947,888	56,749,214	193,599,934

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)

dollars)

AQUEDUCT								GRAND TOTAL	Calendar Year
Reach 18A	Reach 22B	Reach 26A	Reach 29A	Reach 29G	Reach 29J	Reach 31A	Reach 33A		
Alamo Powerplant	Pear-blossom Pumping Plant	Devil Canyon Powerplant	Oso Pumping Plant	William E. Warne (Pyramid) Powerplant	Castaic Powerplant	Las Perillas and Badger Hill Pumping Plants	Devil's Den Sawtooth and Polonio PP's and San Luis Obispo Pwp.		
(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
0	0	0	0	0	0	0	0	38,130	1962
0	0	0	0	0	0	0	0	58,871	1963
0	0	0	0	0	0	0	0	75,239	1964
0	0	0	0	0	0	0	0	146,297	1965
0	0	0	0	0	0	0	0	198,643	1966
0	0	0	0	0	0	6,517	0	263,128	1967
0	0	0	0	0	0	120,278	0	2,034,449	1968
0	0	0	0	0	0	79,620	0	1,366,635	1969
0	0	0	0	0	0	137,449	0	1,188,766	1970
0	64,807	0	1,696	0	0	171,389	0	1,725,032	1971
0	103,584	-3,112	180,005	0	-385,696	240,651	0	4,645,065	1972
0	615,309	-931,697	274,450	0	-1,193,216	128,730	0	5,854,986	1973
0	616,327	-939,072	324,440	0	-1,823,391	120,445	0	7,156,363	1974
0	914,440	-1,101,445	457,487	0	-2,835,302	101,109	0	7,156,363	1975
0	318,880	-1,520,412	314,669	0	-2,512,021	151,211	0	7,192,331	1976
0	1,783,155	-1,216,060	53,119	0	-1,233,043	85,538	0	1,230,584	1977
0	1,807,731	-3,335,069	158,795	0	-2,642,118	208,639	0	11,983,906	1978
0	1,846,133	-3,508,195	205,129	0	-3,211,549	183,228	0	10,378,974	1979
0	2,022,070	-2,417,354	396,626	0	-4,065,927	178,894	0	10,637,476	1980
0	3,167,794	-3,537,234	594,911	-973,609	-3,476,126	291,129	0	14,463,385	1981
0	358,835	-5,726,438	355,285	-1,874,856	-2,790,485	25,222	0	24,468,098	1982
0	4,067,195	-6,738,125	103,727	-172,350	-1,426,500	720,811	0	120,775,402	1983
-977,573	5,117,657	-10,011,087	3,857,240	-9,220,100	-15,892,190	847,149	0	41,320,935	1984
-7,213,220	10,374,611	-24,640,450	2,892,671	-7,583,575	-13,524,700	760,513	0	65,788,666	1985
-7,464,032	10,655,648	-25,005,625	3,373,662	-8,737,700	-15,409,950	769,433	0	70,819,975	1986
-7,434,000	10,467,938	-24,817,825	3,266,852	-8,503,600	-14,973,275	770,337	0	75,390,841	1987
-7,367,875	10,353,341	-24,823,800	3,325,975	-8,673,875	-15,742,900	695,122	0	111,983,906	1988
-9,316,352	16,087,061	-33,096,075	3,379,134	-8,179,400	-14,155,175	763,487	0	107,648,259	1989
-9,371,172	16,365,740	-33,603,700	3,664,984	-8,790,200	-15,127,650	1,151,762	0	112,722,480	1991
-9,455,480	16,966,205	-34,125,675	3,352,394	-7,977,500	-13,692,150	1,162,579	0	115,981,226	1992
-9,888,460	17,589,665	-35,436,100	3,801,587	-8,958,800	-15,346,200	1,170,567	0	120,775,402	1993
-9,705,271	17,941,048	-35,636,075	3,853,489	-9,030,350	-15,432,900	1,180,175	0	124,755,523	1994
-6,629,126	10,649,624	-19,835,950	7,671,084	-15,998,950	-29,347,575	1,209,127	0	126,832,143	1995
-6,349,712	10,214,583	-19,353,075	8,052,772	-16,335,375	-30,543,350	1,218,033	0	129,707,830	1996
-6,286,923	10,262,896	-19,122,425	8,363,381	-15,965,675	-31,097,500	1,240,937	0	135,455,845	1997
-6,322,608	10,262,494	-19,502,625	8,660,724	-16,298,200	-32,051,350	1,235,944	0	137,346,559	1998
-6,445,665	10,830,861	-19,088,900	9,108,486	-16,097,050	-32,394,450	1,280,398	0	148,649,545	1999
-6,461,191	10,824,853	-19,310,775	9,230,218	-16,624,500	-32,754,200	1,280,051	0	149,343,419	2000
-6,247,902	10,821,948	-19,125,300	9,831,339	-16,510,725	-33,546,675	1,332,556	0	159,058,520	2001
-6,497,408	11,735,895	-19,213,675	10,643,950	-16,734,000	-34,948,075	1,386,782	0	175,324,251	2002
-6,008,190	10,858,496	-17,643,325	10,758,572	-16,686,650	-35,037,925	1,394,548	0	173,758,913	2003
-5,816,216	10,709,814	-17,098,600	11,113,656	-16,662,025	-35,263,650	1,422,661	0	178,132,061	2004
-5,763,303	10,690,888	-16,869,275	11,442,988	-16,734,000	-35,770,950	1,433,698	0	181,219,004	2005
-5,850,471	11,060,556	-16,842,650	11,692,254	-16,734,000	-36,045,850	1,459,707	0	187,678,362	2006
-5,946,098	11,282,191	-17,177,450	12,183,965	-16,734,000	-36,943,100	1,488,804	0	196,121,448	2007
-6,045,168	12,024,333	-17,237,950	12,713,174	-16,477,900	-37,138,275	1,553,229	0	210,119,398	2008
-6,142,075	11,894,395	-17,994,300	12,215,711	-16,685,850	-36,530,300	1,514,537	0	201,244,733	2009
-6,186,953	12,377,042	-17,945,325	12,954,030	-16,734,000	-37,460,200	1,571,931	0	215,453,532	2010
-6,187,974	12,380,107	-17,512,600	13,014,993	-16,734,000	-37,478,875	1,579,659	0	217,204,161	2011
-6,471,815	13,509,857	-18,503,050	13,903,110	-16,734,000	-38,520,375	1,648,497	0	239,119,361	2012
-6,276,300	12,712,846	-17,889,700	13,542,252	-16,734,000	-38,351,200	1,612,067	0	227,299,379	2013
-6,415,360	13,586,562	-18,203,625	14,466,588	-16,734,000	-39,295,975	1,690,942	0	245,624,252	2014
-6,735,226	15,260,351	-18,907,525	15,420,746	-16,734,000	-39,461,275	1,808,982	0	273,799,116	2015
-6,608,424	15,258,948	-18,930,100	15,793,529	-16,734,000	-39,450,850	1,859,354	0	281,208,695	2016
-6,763,011	15,995,095	-19,052,775	16,260,317	-16,734,000	-39,654,425	1,909,365	0	292,870,362	2017
-6,902,139	16,620,035	-19,415,700	16,806,748	-16,734,000	-40,194,800	1,949,135	0	306,232,427	2018
-6,833,494	16,423,630	-18,984,550	16,925,013	-16,734,000	-40,298,000	1,958,356	0	308,731,921	2019
-6,649,624	15,804,681	-18,351,400	17,185,831	-16,734,000	-40,930,650	1,955,019	0	307,600,434	2020
-7,206,001	17,305,471	-20,237,925	17,054,754	-16,734,000	-40,536,250	1,961,323	0	312,292,465	2021
-6,884,910	16,191,485	-18,910,100	17,029,129	-16,734,000	-40,748,100	1,945,609	0	304,657,532	2022
-2,621,325	16,863,915	-19,357,850	17,121,025	-16,734,000	-40,823,550	1,952,999	0	315,226,017	2023
-2,519,500	15,848,021	-18,760,725	16,871,073	-16,734,000	-40,604,550	1,933,654	0	305,554,136	2024
-2,680,175	17,064,694	-19,936,975	17,036,310	-16,734,000	-40,744,700	1,946,737	0	312,858,723	2025
-2,531,375	15,794,931	-18,396,450	16,983,034	-16,734,000	-40,722,350	1,941,211	0	307,876,446	2026
-2,697,950	17,044,636	-19,943,750	17,056,270	-16,734,000	-40,672,450	1,953,468	0	315,239,204	2027
-2,586,450	15,947,741	-18,644,725	16,568,755	-16,734,000	-40,688,850	1,934,869	0	306,189,261	2028
-2,714,975	16,904,541	-19,754,475	16,324,361	-16,734,000	-40,709,400	1,946,893	0	312,468,714	2029
-2,613,875	16,038,685	-18,679,500	16,185,323	-16,734,000	-40,628,950	1,946,898	0	309,183,481	2030
-2,758,850	17,134,716	-19,780,800	16,251,678	-16,734,000	-40,737,675	1,962,613	0	316,438,492	2031
-2,619,475	15,782,731	-18,654,225	15,844,959	-16,734,000	-40,620,125	1,937,301	0	304,383,355	2032
-2,726,175	16,716,049	-19,520,825	15,944,549	-16,734,000	-40,705,025	1,965,788	0	313,548,149	2033
-2,639,400	15,475,575	-18,877,775	15,109,874	-16,734,000	-40,647,925	1,903,636	0	291,977,958	2034
-2,814,650	17,552,334	-19,925,350	15,667,832	-16,734,000	-40,818,525	2,008,071	0	327,921,391	2035

- b) Power costs for the period 1968 through 1986 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)

Sheet 1 of 4

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA ^(b)				CENTRAL COASTAL AREA		
	Napa County FC & WCD ^(c)	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	950	950	26,000	29,600	88,000	143,600	4,500	8,198	12,698
1985	0	950	950	27,000	30,800	88,000	145,800	7,500	13,638	21,138
1986	5,045	950	5,995	28,000	32,100	88,000	148,100	10,000	18,210	28,210
1987	5,395	20,000	25,395	29,000	33,300	88,000	150,300	12,500	22,704	35,204
1988	5,745	27,000	32,745	30,000	34,500	88,000	152,500	15,500	28,222	43,722
1989	6,195	34,500	40,695	31,000	35,700	90,000	156,700	20,000	36,342	56,342
1990	6,745	42,000	48,745	32,000	36,900	92,000	160,900	25,000	45,486	70,486
1991	7,290	42,000	49,290	34,000	38,400	94,000	166,400	25,000	45,486	70,486
1992	7,840	42,000	49,840	36,000	39,900	96,000	171,900	25,000	45,486	70,486
1993	8,490	42,000	50,490	38,000	41,400	98,000	177,400	25,000	45,486	70,486
1994	9,135	42,000	51,135	40,000	42,000	100,000	182,000	25,000	45,486	70,486
1995	9,780	42,000	51,780	42,000	42,000	100,000	184,000	25,000	45,486	70,486
1996	10,425	42,000	52,425	44,000	42,000	100,000	186,000	25,000	45,486	70,486
1997	11,065	42,000	53,065	46,000	42,000	100,000	188,000	25,000	45,486	70,486
1998	11,710	42,000	53,710	46,000	42,000	100,000	188,000	25,000	45,486	70,486
1999	12,330	42,000	54,330	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2000	13,050	42,000	55,050	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2001	13,665	42,000	55,665	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2002	14,185	42,000	56,185	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2003	14,800	42,000	56,800	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2004	15,400	42,000	57,400	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2005	16,000	42,000	58,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2006	16,450	42,000	58,450	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2007	17,100	42,000	59,100	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2008	17,650	42,000	59,650	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2009	18,200	42,000	60,200	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2010	18,750	42,000	60,750	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2011	19,400	42,000	61,400	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2012	19,950	42,000	61,950	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2013	20,600	42,000	62,600	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2014	21,250	42,000	63,250	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	889,040	2,019,250	2,908,290	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, 1984.
- b) Entitlements for the South Bay area were supplied by nonproject water for the period June 1962 through November 1967. Actual delivery quantities of project water are shown for 1967.
- c) District's Table A quantities exclude amounts during the period 1968 through 1985 that are assumed to be supplied by nonproject water.

MENTS TO PROJECT WATER^(a)

(in acre-feet)

Sheet 2 of 4

Calendar Year	SAN JOAQUIN VALLEY AREA									
	Devil's Den	Dudley Ridge	Empire	Kern County Water Agency			County	Oak Flat	Tulare	Total
	Water	Water	West Side				of	Water	Lake Basin	
	District	District	Irrigation	M&I	Ag.	Total	Kings	District	Water Storage	
(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	92,900	1,079,100
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	6,957,406	77,741,825

TABLE B-4: ANNUAL ENTITLE-

(in acre-feet)

Sheet 3 of 4

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	1,122
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)

Sheet 4 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Geronio 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)	
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	2,884,187
1985	11,800	1,558,700	6,000	1,852,149	1,700	1,200	860	3,760	0	3,102,897
1986	12,900	1,659,300	8,000	1,971,190	2,100	1,200	890	4,190	0	3,296,885
1987	14,000	1,759,800	10,000	2,091,241	2,500	1,200	920	4,620	0	3,507,960
1988	15,100	1,860,400	13,000	2,212,782	2,900	1,200	960	5,060	0	3,705,609
1989	16,200	1,961,000	16,000	2,411,933	3,300	1,200	1,000	5,500	0	3,974,270
1990	17,300	2,011,500	20,000	2,487,900	3,800	1,200	1,040	6,040	0	4,129,071
1991	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,080	38,180	0	4,176,856
1992	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,120	38,220	0	4,182,946
1993	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,160	38,260	0	4,189,136
1994	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,200	38,300	0	4,194,421
1995	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,250	38,350	0	4,197,116
1996	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,300	38,400	0	4,199,811
1997	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,350	38,450	0	4,202,501
1998	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,400	38,500	0	4,203,196
1999	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,450	38,550	0	4,203,866
2000	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,510	38,610	0	4,204,646
2001	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,570	38,670	0	4,205,321
2002	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,630	38,730	0	4,205,901
2003	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,690	38,790	0	4,206,576
2004	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,750	38,850	0	4,207,236
2005	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,810	38,910	0	4,207,896
2006	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,880	38,980	0	4,208,416
2007	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,950	39,050	0	4,209,136
2008	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,020	39,120	0	4,209,756
2009	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,090	39,190	0	4,210,376
2010	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,160	39,260	0	4,210,996
2011	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,240	39,340	0	4,211,726
2012	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,320	39,420	0	4,212,356
2013	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,410	39,510	0	4,213,096
2014	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,500	39,600	0	4,213,836
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	236,423,114

TABLE B-5A ANNUAL WATER QUANTITIES DELIVERED

(in acre-feet)

Sheet 1 of 7

Calendar Year	Grizzly Valley Pipeline PC FC&WCD	NORTH BAY AQUEDUCT			TOTAL NORTH BAY AQUEDUCT	SOUTH BAY AQUEDUCT ^(d)						
		Reach 2	Direct Delta Diversion SC	Reach 3		Reach 1		Reach 2	Reach 4	Reach 5		Reach 6
		SC FC&WCD	FC&WCD ^(b)	NC FC&WCD ^(c)		ACWD	AC FC&WCD	AC FC&WCD	AC FC&WCD	ACWD	AC FC&WCD	AC FC&WCD
		(1)	(2)	(2A)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
1962	0	0	0	0	0	8,412	141	353	0	0	0	0
1963	0	0	0	0	0	10,914	814	917	0	0	0	0
1964	0	0	0	0	0	19,238	248	1,425	0	0	0	0
1965	0	0	0	0	0	15,280	637	1,830	138	0	0	0
1966	0	0	0	0	0	0	2,475	2,537	499	0	0	0
1967	0	0	0	0	0	0	1,527	2,391	862	0	0	0
1968	0	0	0	1,214	1,214	0	1,608	3,799	721	0	5	0
1969	0	0	0	2,687	2,687	0	1,165	3,459	1,851	0	160	0
1970	70	0	0	3,618	3,618	0	1,345	4,558	3,182	0	164	0
1971	64	0	0	2,521	2,521	0	546	1,908	2,403	0	160	0
1972	535	0	0	3,647	3,647	0	1,066	4,605	2,041	1,489	2,777	0
1973	679	0	0	3,792	3,792	0	430	1,123	1,193	0	229	0
1974	648	0	0	4,870	4,870	0	177	0	975	0	162	0
1975	405	0	0	6,840	6,840	0	137	1,783	1,864	0	120	714
1976	382	0	0	7,122	7,122	0	265	7,204	3,384	0	817	5,461
1977	303	0	0	8,226	8,226	0	210	4,491	2,213	0	524	5,206
1978	278	0	0	6,034	6,034	0	422	2,426	3,754	0	2,034	2,348
1979	329	0	0	6,561	6,561	0	197	4,283	5,567	0	3,937	5,341
1980	295	0	0	6,707	6,707	0	77	3,883	6,686	1,508	0	6,144
1981	355	0	0	9,001	9,001	0	1,250	4,648	5,273	5,752	1,157	7,262
1982	305	0	0	1,213	1,213	0	473	3,043	4,406	0	630	4,571
1983	262	0	0	2,287	2,287	0	179	2,712	1,714	0	50	111
1984	830	0	1,100	2,300	3,400	0	197	6,859	3,351	0	1,736	13,857
1985	860	0	1,250	2,548	3,798	0	197	6,955	3,794	0	2,004	14,050
1986	890	0	1,400	2,937	4,337	0	197	6,955	3,706	0	1,744	15,398
1987	920	12,200	3,258	17,008	17,008	0	197	6,955	4,053	0	1,917	15,878
1988	960	13,560	3,495	19,155	19,155	0	197	6,955	4,311	0	2,135	16,402
1989	1,000	14,620	3,895	22,315	22,315	0	197	6,955	4,493	0	2,318	17,037
1990	1,040	15,704	5,600	6,745	28,049	0	2,200	5,940	6,800	0	4,760	12,300
1991	1,080	16,982	5,600	7,290	29,872	0	2,200	6,200	7,100	0	5,060	13,440
1992	1,120	19,040	5,600	7,840	32,480	0	2,200	6,600	7,400	0	5,360	14,440
1993	1,160	21,340	5,600	8,490	35,430	0	2,200	7,000	7,700	0	5,660	15,440
1994	1,200	23,580	5,600	9,135	38,315	0	2,200	7,400	8,000	0	5,960	16,440
1995	1,250	29,900	5,600	9,780	45,280	0	2,200	7,800	8,300	0	6,260	17,440
1996	1,300	33,680	5,600	10,425	49,705	0	2,200	8,200	8,600	0	6,560	18,440
1997	1,350	34,360	5,600	11,065	51,025	0	2,200	8,600	8,900	0	6,860	19,440
1998	1,400	35,040	5,600	11,710	52,350	0	2,200	8,600	8,900	0	6,860	19,440
1999	1,450	35,720	5,600	12,330	53,650	0	2,200	8,600	8,900	0	6,860	19,440
2000	1,510	36,400	5,600	13,050	55,050	0	2,200	8,600	8,900	0	6,860	19,440
2001	1,570	36,400	5,600	13,665	55,655	0	2,200	8,600	8,900	0	6,860	19,440
2002	1,630	36,400	5,600	14,185	56,185	0	2,200	8,600	8,900	0	6,860	19,440
2003	1,690	36,400	5,600	14,800	56,800	0	2,200	8,600	8,900	0	6,860	19,440
2004	1,750	36,400	5,600	15,400	57,400	0	2,200	8,600	8,900	0	6,860	19,440
2005	1,810	36,400	5,600	16,000	58,000	0	2,200	8,600	8,900	0	6,860	19,440
2006	1,880	36,400	5,600	16,450	58,450	0	2,200	8,600	8,900	0	6,860	19,440
2007	1,950	36,400	5,600	17,100	59,100	0	2,200	8,600	8,900	0	6,860	19,440
2008	2,020	36,400	5,600	17,650	59,650	0	2,200	8,600	8,900	0	6,860	19,440
2009	2,090	36,400	5,600	18,200	60,200	0	2,200	8,600	8,900	0	6,860	19,440
2010	2,160	36,400	5,600	18,750	60,750	0	2,200	8,600	8,900	0	6,860	19,440
2011	2,240	36,400	5,600	19,400	61,400	0	2,200	8,600	8,900	0	6,860	19,440
2012	2,320	36,400	5,600	19,950	62,050	0	2,200	8,600	8,900	0	6,860	19,440
2013	2,410	36,400	5,600	20,600	62,900	0	2,200	8,600	8,900	0	6,860	19,440
2014	2,500	36,400	5,600	21,250	63,250	0	2,200	8,600	8,900	0	6,860	19,440
2015	2,600	36,400	5,600	21,900	63,900	0	2,200	8,600	8,900	0	6,860	19,440
2016	2,700	36,400	5,600	22,500	64,500	0	2,200	8,600	8,900	0	6,860	19,440
2017	2,700	36,400	5,600	23,100	65,100	0	2,200	8,600	8,900	0	6,860	19,440
2018	2,700	36,400	5,600	23,700	65,700	0	2,200	8,600	8,900	0	6,860	19,440
2019	2,700	36,400	5,600	24,300	66,300	0	2,200	8,600	8,900	0	6,860	19,440
2020	2,700	36,400	5,600	24,900	66,900	0	2,200	8,600	8,900	0	6,860	19,440
2021	2,700	36,400	5,600	25,000	67,000	0	2,200	8,600	8,900	0	6,860	19,440
2022	2,700	36,400	5,600	25,000	67,000	0	2,200	8,600	8,900	0	6,860	19,440
2023	2,700	36,400	5,600	25,000	67,000	0	2,200	8,600	8,900	0	6,860	19,440
2024	2,700	36,400	5,600	25,000	67,000	0	2,200	8,600	8,900	0	6,860	19,440
2025	2,700	36,400	5,600	25,000	67,000	0	2,200	8,600	8,900	0	6,860	19,440
2026	2,700	36,400	5,600	25,000	67,000	0	2,200	8,600	8,900	0	6,860	19,440
2027	2,700	36,400	5,600	25,000	67,000	0	2,200	8,600	8,900	0	6,860	19,440
2028	2,700	36,400	5,600	25,000	67,000	0	2,200	8,600	8,900	0	6,860	19,440
2029	2,700	36,400	5,600	25,000	67,000	0	2,200	8,600	8,900	0	6,860	19,440
2030	2,700	36,400	5,600	25,000	67,000	0	2,200	8,600	8,900	0	6,860	19,440
2031	2,700	36,400	5,600	25,000	67,000	0	2,200	8,600	8,900	0	6,860	19,440
2032	2,700	36,400	5,600	25,000	67,000	0	2,200	8,600	8,900	0	6,860	19,440
2033	2,700	36,400	5,600	25,000	67,000	0	2,200	8,600	8,900	0	6,860	19,440
2034	2,700	36,400	5,600	25,000	67,000	0	2,200	8,600	8,900	0	6,860	19,440
2035	2,700	36,400	5,600	25,000	67,000	0	2,200	8,600	8,900	0	6,860	19,440

- a) Includes entitlement water, surplus water delivered prior to May 1, 1973, and nonproject water.
- b) Quantities projected to be delivered from the Delta through the District's facilities.

FROM EACH AQUEDUCT REACH TO EACH CONTRACTOR ^(a)

(in acre-feet)

Sheet 2 of 7

Calendar Year	SOUTH BAY AQUEDUCT ^(d) (continued)			TOTAL SOUTH BAY AQUEDUCT	CALIFORNIA AQUEDUCT						
	Reach 7	Reach 8	Reach 9		NORTH SAN JOAQUIN DIVISION Reach 2A	SOUTH SAN JOAQUIN DIVISION			SOUTH SAN JOAQUIN DIVISION		
						Reach 8C			Reach 8D		
	ACWD	ACWD	SCVWD		OFWD	TLBWS	EWSID	CK	KCWA (Ag.)	DRWD	CK
(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	
1962	0	0	0	8,906	0	0	0	0	0	0	0
1963	0	0	0	12,645	0	0	0	0	0	0	0
1964	0	0	0	20,911	0	0	0	0	0	0	0
1965	1,127	0	15,014	34,026	0	0	0	0	0	0	0
1966	14,864	0	34,538	54,913	0	0	0	0	0	0	0
1967	12,882	0	39,101	56,763	0	0	0	0	0	0	0
1968	24,817	0	70,105	101,055	3,084	25,100	1,978	900	0	26,360	0
1969	813	0	62,264	69,712	3,016	7,081	56	100	0	33,390	0
1970	0	0	80,311	89,560	5,911	0	3,942	0	0	40,407	0
1971	5,961	0	87,606	98,584	7,212	80,906	5,990	3,700	0	41,053	0
1972	26,182	0	100,266	138,426	8,166	144,843	5,795	1,400	0	42,443	0
1973	2,521	0	88,582	94,078	3,214	26,317	3,000	1,500	1,500	22,057	0
1974	0	4	88,000	89,318	3,471	32,603	3,000	1,500	0	33,390	0
1975	393	593	88,000	93,604	3,576	41,536	3,000	1,500	0	40,555	0
1976	13,774	7,526	88,000	126,431	4,112	26,595	3,000	1,600	0	41,421	0
1977	11,284	7,556	76,220	107,704	4,472	12,984	3,738	1,530	0	11,153	0
1978	854	5,009	95,727	112,574	3,906	3,934	454	2,070	0	51,747	0
1979	3,430	7,444	91,991	122,190	6,149	74,758	1,739	2,000	0	38,544	0
1980	2,824	6,702	88,000	115,824	5,700	35,140	894	2,200	0	41,000	0
1981	7,595	8,570	88,000	129,507	4,300	50,888	5,859	2,300	0	41,000	0
1982	1,776	4,540	87,261	106,700	3,838	4,405	361	1,536	0	41,000	214
1983	0	3,157	86,733	94,656	3,822	1,001	0	3,550	0	42,700	0
1984	20,825	8,775	88,000	143,600	4,800	9,263	6,000	3,100	0	45,100	0
1985	22,025	8,775	88,000	145,800	4,900	72,200	3,000	3,400	0	47,200	0
1986	23,325	8,775	88,000	148,100	5,100	71,700	3,000	3,700	0	49,300	0
1987	24,525	8,775	88,000	150,300	5,200	71,400	3,000	4,000	0	51,400	0
1988	25,725	8,775	88,000	152,500	5,400	53,000	3,000	4,000	0	53,500	0
1989	26,925	8,775	90,000	156,700	5,600	57,200	3,000	4,000	0	55,600	0
1990	28,100	8,800	92,000	160,900	5,700	61,600	3,000	4,000	0	57,700	0
1991	29,600	8,800	94,000	166,400	5,700	61,600	3,000	4,000	0	57,700	0
1992	31,100	8,800	96,000	171,900	5,700	61,600	3,000	4,000	0	57,700	0
1993	32,600	8,800	98,000	177,400	5,700	61,600	3,000	4,000	0	57,700	0
1994	33,200	8,800	100,000	182,000	5,700	61,600	3,000	4,000	0	57,700	0
1995	33,200	8,800	100,000	184,000	5,700	61,600	3,000	4,000	0	57,700	0
1996	33,200	8,800	100,000	186,000	5,700	61,600	3,000	4,000	0	57,700	0
1997	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
1998	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
1999	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2000	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2001	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2002	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2003	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2004	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2005	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2006	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2007	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2008	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2009	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2010	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2011	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2012	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2013	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2014	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2015	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2016	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2017	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2018	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2019	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2020	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2021	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2022	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2023	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2024	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2025	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2026	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2027	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2028	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2029	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2030	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2031	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2032	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2033	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2034	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0
2035	33,200	8,800	100,000	188,000	5,700	61,600	3,000	4,000	0	57,700	0

- c) For the period 1968 through 1986, deliveries are nonproject water pumped through an interim facility.
- d) For the period June 1962 through November 1967, deliveries were supplied by nonproject water.

TABLE B-5A ANNUAL WATER QUANTITIES DELIVERED

(in acre-feet)

Sheet 3 of 7

Calendar Year	CALIFORNIA AQUEDUCT (continued)										
	SOUTH SAN JOAQUIN DIVISION (continued)										
	Reach 8D	Reach 9		Reach 10A			Reach 11B			Reach 12E	
	(continued) TLBWSD	KCWA (Ag.)	TLBWSD	KCWA (M&I)	KCWA (Ag.)	TLBWSD	KCWA (M&I)	KCWA (Ag.)	KCWA (M&I) ^e	KCWA (M&I)	KCWA (Agr.)
(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(30A)	(31)	(32)	
1962	0	0	0	0	0	0	0	0	0	0	
1963	0	0	0	0	0	0	0	0	0	0	
1964	0	0	0	0	0	0	0	0	0	0	
1965	0	0	0	0	0	0	0	0	0	0	
1966	0	0	0	0	0	0	0	0	0	0	
1967	0	0	0	0	0	0	0	0	0	0	
1968	0	30,951	0	0	0	0	24,776	0	0	0	
1969	0	24,489	0	0	0	2,842	64,682	0	0	0	
1970	3,408	46,114	1,855	0	158	4,315	72,279	0	0	9,279	
1971	41,579	58,356	0	0	9,973	0	63,773	0	0	28,056	
1972	113,550	75,464	0	0	5,876	0	72,358	0	0	62,342	
1973	24,147	54,583	0	0	22,948	0	67,544	0	0	13,082	
1974	39,686	63,814	0	10,019	22,719	0	87,476	0	2,651	4,248	
1975	44,722	50,021	0	2,791	72,121	0	85,675	0	0	10,787	
1976	32,216	53,465	0	74	50,444	0	85,067	0	37,519	20,555	
1977	5,097	24,668	0	201	34,451	0	29,603	0	20,280	1,737	
1978	8,119	72,231	0	0	161,889	0	88,753	0	47,133	15,011	
1979	80,363	74,524	0	285	153,245	0	108,379	0	50,740	61,567	
1980	40,304	79,946	0	3,780	131,836	0	103,207	0	32,039	22,252	
1981	32,550	76,508	0	341	133,500	0	104,395	0	59,917	58,470	
1982	14,146	76,877	0	4,700	164,832	0	99,081	0	36,139	75,587	
1983	5	86,790	0	0	146,493	0	94,117	0	0	10,950	
1984	7,000	89,125	0	8,000	147,590	0	119,709	13,450	74,520	68,600	
1985	46,300	82,500	0	1,500	98,038	0	121,744	15,000	78,030	61,281	
1986	46,800	65,500	0	10,300	138,798	0	125,900	15,000	75,100	80,827	
1987	47,100	68,300	0	9,250	152,908	0	129,667	15,000	82,750	88,337	
1988	54,900	73,800	0	11,275	202,133	0	132,167	15,000	87,725	97,525	
1989	55,000	99,200	0	9,250	178,637	0	140,500	15,000	83,450	93,200	
1990	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
1991	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
1992	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
1993	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
1994	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
1995	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
1996	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
1997	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
1998	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
1999	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2000	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2001	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2002	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2003	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2004	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2005	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2006	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2007	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2008	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2009	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2010	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2011	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2012	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2013	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2014	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2015	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2016	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2017	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2018	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2019	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2020	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2021	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2022	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2023	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2024	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2025	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2026	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2027	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2028	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2029	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2030	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2031	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2032	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2033	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2034	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	
2035	56,900	105,500	0	9,250	205,260	0	145,200	15,000	85,850	96,800	

e) Water deliveries under Amendment No. 18 of the water supply contract with Kern County Water Agency.

FROM EACH AQUEDUCT REACH TO EACH CONTRACTOR ^(a)

(in acre-feet)

Sheet 4 of 7

Calendar Year	CALIFORNIA AQUEDUCT (continued)												TEHACHAPI DIVISION
	SOUTH SAN JOAQUIN DIVISION (continued)												
	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	6,685	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	26,413	37,426	1,400	17,907	0	
1984	0	22,688	710	21,100	0	53,900	0	36,500	61,900	1,400	47,800	0	
1985	2,495	24,937	8,500	36,800	0	101,300	0	46,200	58,800	2,600	33,300	0	
1986	1,700	27,125	8,500	36,800	0	100,600	0	44,250	54,000	2,800	37,000	0	
1987	1,800	29,563	7,500	46,175	0	87,250	0	62,900	54,500	2,800	38,700	0	
1988	2,850	31,875	4,250	38,000	0	114,700	0	38,000	46,000	2,800	28,800	0	
1989	0	27,140	7,500	46,890	0	96,700	0	62,223	58,160	13,000	49,450	0	
1990	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
1991	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
1992	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
1993	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
1994	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
1995	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
1996	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
1997	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
1998	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
1999	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2000	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2001	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2002	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2003	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2004	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2005	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2006	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2007	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2008	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2009	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2010	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2011	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2012	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2013	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2014	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2015	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2016	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2017	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2018	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2019	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2020	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2021	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2022	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2023	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2024	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2025	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2026	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2027	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2028	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2029	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2030	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2031	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2032	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2033	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2034	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	
2035	0	27,140	7,500	46,100	0	89,800	0	59,400	60,000	15,000	51,600	2,000	

TABLE B-5A: ANNUAL WATER QUANTITIES DELIVERED

(in acre-feet)

Sheet 5 of 7

Calendar Year	CALIFORNIA AQUEDUCT C(continued)										
	MOJAVE DIVISION										
	Reach 18A	Reach 19	Reach 20A	Reach 20B		Reach 21	Reach 22 A	Reach 22 B			
	AVEKWA	AVEKWA	AVEKWA	PWD	AVEKWA	LCID	AVEKWA	MWD-SC ^(f)	CVWD ^(f)	DWA ^(f)	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	18	11,799	9,175	0	0	0	450	-40,768	15,768	25,000	0
1985	36	10,739	9,563	0	0	0	495	-43,989	16,989	27,000	0
1986	54	10,588	9,959	850	0	0	530	-47,210	18,210	29,000	0
1987	72	10,483	10,319	4,750	0	0	560	-50,931	19,431	31,500	0
1988	120	10,947	10,647	5,700	0	0	590	-54,652	20,652	34,000	0
1989	120	10,947	10,647	6,750	0	0	590	-58,373	21,873	36,500	0
1990	120	11,127	11,135	8,000	0	0	618	-61,200	23,100	38,100	50,800
1991	120	11,375	11,847	8,800	0	1,800	658	-61,200	23,100	38,100	50,800
1992	120	11,623	12,559	9,600	0	1,900	698	-61,200	23,100	38,100	50,800
1993	120	11,871	13,271	10,400	0	2,000	738	-61,200	23,100	38,100	50,800
1994	120	12,119	13,983	11,200	0	2,100	778	-61,200	23,100	38,100	50,800
1995	120	12,366	14,697	12,000	0	2,200	817	-61,200	23,100	38,100	50,800
1996	120	12,713	15,695	12,600	0	2,300	872	-61,200	23,100	38,100	50,800
1997	120	13,060	16,693	13,200	0	2,300	927	-61,200	23,100	38,100	50,800
1998	120	13,407	17,691	13,800	0	2,300	982	-61,200	23,100	38,100	50,800
1999	120	13,754	18,689	14,400	0	2,300	1,037	-61,200	23,100	38,100	50,800
2000	120	14,101	19,685	15,000	0	2,300	1,094	-61,200	23,100	38,100	50,800
2001	120	14,622	21,181	15,200	0	2,300	1,177	-61,200	23,100	38,100	50,800
2002	120	15,143	22,677	15,400	0	2,300	1,268	-61,200	23,100	38,100	50,800
2003	120	15,664	24,173	15,600	0	2,300	1,343	-61,200	23,100	38,100	50,800
2004	120	16,185	25,669	15,800	0	2,300	1,426	-61,200	23,100	38,100	50,800
2005	120	16,704	27,166	16,050	0	2,300	1,510	-61,200	23,100	38,100	50,800
2006	120	17,324	28,947	16,300	0	2,300	1,609	-61,200	23,100	38,100	50,800
2007	120	17,944	30,728	16,550	0	2,300	1,708	-61,200	23,100	38,100	50,800
2008	120	18,564	32,509	16,800	0	2,300	1,807	-61,200	23,100	38,100	50,800
2009	120	19,184	34,290	17,050	0	2,300	1,906	-61,200	23,100	38,100	50,800
2010	120	19,802	36,073	17,300	0	2,300	2,005	-61,200	23,100	38,100	50,800
2011	120	20,546	38,211	17,300	0	2,300	2,124	-61,200	23,100	38,100	50,800
2012	120	21,290	40,349	17,300	0	2,300	2,243	-61,200	23,100	38,100	50,800
2013	120	22,034	42,487	17,300	0	2,300	2,362	-61,200	23,100	38,100	50,800
2014	120	22,778	44,625	17,300	0	2,300	2,481	-61,200	23,100	38,100	50,800
2015	120	23,520	46,761	17,300	0	2,300	2,599	-61,200	23,100	38,100	50,800
2016	120	24,387	49,255	17,300	0	2,300	2,738	-61,200	23,100	38,100	50,800
2017	120	25,254	51,749	17,300	0	2,300	2,877	-61,200	23,100	38,100	50,800
2018	120	26,121	54,243	17,300	0	2,300	3,016	-61,200	23,100	38,100	50,800
2019	120	26,988	56,737	17,300	0	2,300	3,155	-61,200	23,100	38,100	50,800
2020	120	27,857	59,231	17,300	0	2,300	3,292	-61,200	23,100	38,100	50,800
2021	120	28,848	62,081	17,300	0	2,300	3,450	-61,200	23,100	38,100	50,800
2022	120	29,839	64,931	17,300	0	2,300	3,608	-61,200	23,100	38,100	50,800
2023	120	30,830	67,781	17,300	0	2,300	3,766	-61,200	23,100	38,100	50,800
2024	120	31,821	70,631	17,300	0	2,300	3,924	-61,200	23,100	38,100	50,800
2025	120	32,814	73,482	17,300	0	2,300	4,084	-61,200	23,100	38,100	50,800
2026	120	34,019	76,689	17,300	0	2,300	4,262	-61,200	23,100	38,100	50,800
2027	120	35,044	79,896	17,300	0	2,300	4,440	-61,200	23,100	38,100	50,800
2028	120	36,159	83,103	17,300	0	2,300	4,618	-61,200	23,100	38,100	50,800
2029	120	37,274	86,310	17,300	0	2,300	4,796	-61,200	23,100	38,100	50,800
2030	120	38,391	89,515	17,300	0	2,300	4,974	-61,200	23,100	38,100	50,800
2031	120	39,729	93,363	17,300	0	2,300	5,188	-61,200	23,100	38,100	50,800
2032	120	39,729	93,363	17,300	0	2,300	5,188	-61,200	23,100	38,100	50,800
2033	120	39,729	93,363	17,300	0	2,300	5,188	-61,200	23,100	38,100	50,800
2034	120	39,729	93,363	17,300	0	2,300	5,188	-61,200	23,100	38,100	50,800
2035	120	39,729	93,363	17,300	0	2,300	5,188	-61,200	23,100	38,100	50,800

f) 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)

Sheet 6 of 7

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	1,485	144,038	7,200	12,400	0	0	10,700	49,200
1985	0	1,640	251,500	9,000	7,500	0	0	36,700	4,800
1986	0	1,840	509,900	9,600	9,800	0	0	19,400	272,500
1987	0	2,120	505,400	9,900	12,500	0	0	20,900	272,500
1988	0	2,320	501,300	10,800	13,800	0	0	21,800	272,500
1989	0	2,530	488,500	10,800	14,800	10,800	0	22,600	272,500
1990	0	2,750	570,500	60,000	18,500	11,800	0	27,000	272,500
1991	0	2,870	597,500	42,600	18,780	12,900	0	28,000	272,500
1992	0	2,990	624,500	42,600	19,060	14,000	0	29,000	272,500
1993	0	3,110	651,500	42,600	19,340	15,100	0	30,000	272,500
1994	0	3,230	678,500	42,600	19,620	16,200	0	31,000	272,500
1995	0	3,350	705,500	42,600	19,900	17,300	0	0	272,500
1996	0	3,470	732,500	42,600	20,180	17,300	0	0	272,500
1997	0	3,590	759,500	42,600	20,460	17,300	0	0	272,500
1998	0	3,710	786,500	42,600	20,740	17,300	0	0	272,500
1999	0	3,830	813,500	42,600	21,020	17,300	0	0	272,500
2000	0	3,950	840,500	42,600	21,300	17,300	0	0	272,500
2001	0	4,070	867,500	42,600	21,580	17,300	0	0	272,500
2002	0	4,190	894,500	42,600	21,860	17,300	0	0	272,500
2003	0	4,310	921,500	42,600	22,140	17,300	0	0	272,500
2004	0	4,430	948,500	42,600	22,420	17,300	0	0	272,500
2005	0	4,550	975,500	42,600	22,700	17,300	0	0	272,500
2006	0	4,670	1,002,500	42,600	22,980	17,300	0	0	272,500
2007	0	4,790	1,029,500	42,600	23,260	17,300	0	0	272,500
2008	0	4,910	1,056,500	42,600	23,540	17,300	0	0	272,500
2009	0	5,030	1,083,500	42,600	23,820	17,300	0	0	272,500
2010	0	5,150	1,110,500	42,600	24,100	17,300	0	0	272,500
2011	0	5,280	1,137,500	42,600	24,380	17,300	0	0	272,500
2012	0	5,410	1,164,500	42,600	24,660	17,300	0	0	272,500
2013	0	5,540	1,191,500	42,600	24,940	17,300	0	0	272,500
2014	0	5,670	1,218,500	42,600	25,220	17,300	0	0	272,500
2015	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500
2016	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500
2017	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500
2018	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500
2019	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500
2020	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500
2021	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500
2022	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500
2023	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500
2024	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500
2025	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500
2026	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500
2027	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500
2028	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500
2029	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500
2030	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500
2031	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500
2032	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500
2033	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500
2034	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500
2035	0	5,800	1,245,500	42,600	25,500	17,300	0	0	272,500

TABLE B-5A: ANNUAL WATER QUANTITIES DELIVERED FROM EACH AQUEDUCT REACH TO EACH CONTRACTOR^(a)

(in acre-feet)

Sheet 7 of 7

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	VCFCO	MWD-SC	VCFCO	CLWA			KCWA (Ag.)	DDWD	
(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	88,474	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	9,514	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	205,000	0	11,800	89,638	12,700	0	0	0	0	1,411,828
1985	0	0	295,000	0	13,000	141,200	12,700	0	0	0	0	1,744,673
1986	0	0	507,000	0	14,500	144,000	12,700	0	0	0	0	2,527,021
1987	0	0	523,100	0	19,000	146,100	12,700	0	0	0	0	2,609,904
1988	0	0	530,000	750	25,000	147,700	12,700	0	0	0	0	2,667,374
1989	0	0	530,000	1,500	25,000	132,000	12,700	0	0	0	0	2,713,480
1990	0	250	510,000	2,250	25,000	132,000	12,700	0	0	0	0	2,937,350
1991	0	500	514,000	3,000	25,000	132,000	12,700	10,000	5,000	10,000	45,486	3,028,536
1992	0	750	518,000	3,750	25,000	132,000	12,700	10,000	5,000	10,000	45,486	3,064,936
1993	0	1,000	522,000	4,500	25,000	132,000	12,700	10,000	5,000	10,000	45,486	3,101,336
1994	0	1,250	526,000	6,000	25,000	132,000	12,700	10,000	5,000	10,000	45,486	3,138,486
1995	0	1,500	1,146,000	7,500	25,000	132,000	12,700	10,000	5,000	10,000	45,486	3,175,636
1996	0	2,000	1,170,600	9,750	25,000	132,000	12,700	10,000	5,000	10,000	45,486	3,205,506
1997	0	2,500	1,195,200	12,000	25,000	132,000	12,700	10,000	5,000	10,000	45,486	3,235,276
1998	0	3,250	1,219,800	15,000	25,000	132,000	12,700	10,000	5,000	10,000	45,486	3,286,046
1999	0	4,000	1,244,400	15,000	25,000	132,000	12,700	10,000	5,000	10,000	45,486	3,353,816
2000	0	5,000	1,269,000	15,000	25,000	132,000	12,700	10,000	5,000	10,000	45,486	3,381,836
2001	0	5,000	1,292,000	15,000	26,700	132,000	12,700	10,000	5,000	10,000	45,486	3,409,676
2002	0	5,000	1,315,000	15,000	28,400	132,000	12,700	10,000	5,000	10,000	45,486	3,437,524
2003	0	5,000	1,338,000	15,000	30,100	132,000	12,700	10,000	5,000	10,000	45,486	3,465,356
2004	0	5,000	1,361,000	15,000	31,800	132,000	12,700	10,000	5,000	10,000	45,486	3,493,196
2005	0	5,000	1,384,000	15,000	33,500	132,000	12,700	10,000	5,000	10,000	45,486	3,521,086
2006	0	5,000	1,398,600	15,000	33,500	132,000	12,700	10,000	5,000	10,000	45,486	3,546,316
2007	0	5,000	1,413,200	15,000	33,500	132,000	12,700	10,000	5,000	10,000	45,486	3,571,546
2008	0	5,000	1,427,800	15,000	33,500	132,000	12,700	10,000	5,000	10,000	45,486	3,596,776
2009	0	5,000	1,442,400	15,000	33,500	132,000	12,700	10,000	5,000	10,000	45,486	3,622,006
2010	0	5,000	1,457,000	15,000	33,500	132,000	12,700	10,000	5,000	10,000	45,486	3,647,236
2011	0	5,000	1,469,800	15,000	35,100	132,000	12,700	10,000	5,000	10,000	45,486	3,670,347
2012	0	5,000	1,482,600	15,000	36,700	132,000	12,700	10,000	5,000	10,000	45,486	3,693,458
2013	0	5,000	1,495,400	15,000	38,300	132,000	12,700	10,000	5,000	10,000	45,486	3,716,569
2014	0	5,000	1,508,200	15,000	39,900	132,000	12,700	10,000	5,000	10,000	45,486	3,739,680
2015	0	5,000	1,521,000	15,000	41,500	132,000	12,700	10,000	5,000	10,000	45,486	3,762,788
2016	0	5,000	1,533,200	15,000	41,500	132,000	12,700	10,000	5,000	10,000	45,486	3,782,706
2017	0	5,000	1,545,400	15,000	41,500	132,000	12,700	10,000	5,000	10,000	45,486	3,802,626
2018	0	5,000	1,557,600	15,000	41,500	132,000	12,700	10,000	5,000	10,000	45,486	3,822,546
2019	0	5,000	1,569,800	15,000	41,500	132,000	12,700	10,000	5,000	10,000	45,486	3,842,466
2020	0	5,000	1,582,000	15,000	41,500	132,000	12,700	10,000	5,000	10,000	45,486	3,862,386
2021	0	5,000	1,586,200	15,000	41,500	132,000	12,700	10,000	5,000	10,000	45,486	3,870,585
2022	0	5,000	1,590,400	15,000	41,500	132,000	12,700	10,000	5,000	10,000	45,486	3,878,784
2023	0	5,000	1,594,700	15,000	41,500	132,000	12,700	10,000	5,000	10,000	45,486	3,887,983
2024	0	5,000	1,594,700	15,000	41,500	132,000	12,700	10,000	5,000	10,000	45,486	3,891,082
2025	0	5,000	1,594,700	15,000	41,500	132,000	12,700	10,000	5,000	10,000	45,486	3,895,086
2026	0	5,000	1,594,700	15,000	41,500	132,000	12,700	10,000	5,000	10,000	45,486	3,899,676
2027	0	5,000	1,594,700	15,000	41,500	132,000	12,700	10,000	5,000	10,000	45,486	3,904,086
2028	0	5,000	1,594,700	15,000	41,500	132,000	12,700	10,000	5,000	10,000	45,486	3,908,586
2029	0	5,000	1,594,700	15,000	41,500	132,000	12,700	10,000	5,000	10,000	45,486	3,913,086
2030	0	5,000	1,594,700	15,000	41,500	132,000	12,700	10,000	5,000	10,000	45,486	3,917,586
2031	0	5,000	1,594,700	15,000	41,500	132,000	12,700	10,000	5,000	10,000	45,486	3,922,986
2032	0	5,000	1,594,700	15,000	41,500	132,000	12,700	10,000	5,000	10,000	45,486	3,922,986
2033	0	5,000	1,594,700	15,000	41,500	132,000	12,700	10,000	5,000	10,000	45,486	3,922,986
2034	0	5,000	1,594,700	15,000	41,500	132,000	12,700	10,000	5,000	10,000	45,486	3,922,986
2035	0	5,000	1,594,700	15,000	41,500	132,000	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)

Sheet 1 of 4

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA ^(d)				CENTRAL COASTAL AREA		
	(b)	(c)	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
	Napa County FC & WCD	Solano County FC & WCD								
(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	2,300	1,100	3,400	26,000	29,600	88,000	143,600	0	0	0
1985	2,548	1,250	3,798	27,000	30,800	88,000	145,800	0	0	0
1986	2,937	1,400	4,337	28,000	32,100	88,000	148,100	0	0	0
1987	3,258	13,750	17,008	29,000	33,300	88,000	150,300	0	0	0
1988	3,495	15,660	19,155	30,000	34,500	88,000	152,500	0	0	0
1989	3,895	18,420	22,315	31,000	35,700	90,000	156,700	0	0	0
1990	6,745	21,304	28,049	32,000	36,900	92,000	160,900	0	0	0
1991	7,290	22,582	29,872	34,000	38,400	94,000	166,400	25,000	45,486	70,486
1992	7,840	24,640	32,480	36,000	39,900	96,000	171,900	25,000	45,486	70,486
1993	8,490	26,940	35,430	38,000	41,400	98,000	177,400	25,000	45,486	70,486
1994	9,135	29,180	38,315	40,000	42,000	100,000	182,000	25,000	45,486	70,486
1995	9,780	35,500	45,280	42,000	42,000	100,000	184,000	25,000	45,486	70,486
1996	10,425	39,280	49,705	44,000	42,000	100,000	186,000	25,000	45,486	70,486
1997	11,065	39,960	51,025	46,000	42,000	100,000	188,000	25,000	45,486	70,486
1998	11,710	40,640	52,350	46,000	42,000	100,000	188,000	25,000	45,486	70,486
1999	12,330	41,320	53,650	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2000	13,050	42,000	55,050	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2001	13,665	42,000	55,665	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2002	14,185	42,000	56,185	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2003	14,800	42,000	56,800	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2004	15,400	42,000	57,400	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2005	16,000	42,000	58,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2006	16,450	42,000	58,450	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2007	17,100	42,000	59,100	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2008	17,650	42,000	59,650	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2009	18,200	42,000	60,200	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2010	18,750	42,000	60,750	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2011	19,400	42,000	61,400	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2012	19,950	42,000	61,950	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2013	20,600	42,000	62,600	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2014	21,250	42,000	63,250	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	961,433	1,884,926	2,846,359	2,408,577	2,361,391	6,565,719	11,335,687	1,125,000	2,046,870	3,171,870

a) Includes entitlement water, surplus water delivered prior to May 1, 1973, and nonproject water.

DELIVERED TO EACH CONTRACTOR^(a)

(in acre-feet)

Sheet 2 of 4

Calendar Year	SAN JOAQUIN VALLEY AREA									
	Devil's Den	Dudley Ridge	Empire	Kern County Water Agency			County	Oak Flat	Tulare	Total
	Water	Water	West Side				of	Water	Lake Basin	
	District	District	Irrigation	M&I	Ag.	Total	Kings	District	Water Storage	
(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	4,637	589,870	594,507	3,550	3,822	1,006	658,444
1984	12,700	45,100	6,000	102,050	758,550	860,600	3,100	4,800	16,263	948,563
1985	12,700	47,200	3,000	108,900	806,100	915,000	3,400	4,900	118,500	1,104,700
1986	12,700	49,300	3,000	113,400	854,800	968,200	3,700	5,100	118,500	1,160,500
1987	12,700	51,400	3,000	119,100	904,400	1,023,500	4,000	5,200	118,500	1,218,300
1988	12,700	53,500	3,000	123,900	950,700	1,074,600	4,000	5,400	107,900	1,261,100
1989	12,700	55,600	3,000	128,200	984,100	1,112,300	4,000	5,600	112,200	1,305,400
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	844,920	3,542,705	198,806	7,314,701	58,829,060	66,143,761	233,900	364,149	7,099,858	78,428,099

- b) For the period 1968 through 1986, deliveries are nonproject water pumped through an interim facility.
- c) Includes quantities projected to be delivered from the Delta through the District's facilities.
- d) For the period June 1962 through November 1967, deliveries were supplied by nonproject water.

TABLE B-5B: ANNUAL WATER QUANTITIES

(in acre-feet)

Sheet 3 of 4

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	21,442	11,800	15,768	1,485	25,000	0	0	0	7,200	12,400
1985	20,833	13,000	16,989	1,640	27,000	0	0	0	9,000	7,500
1986	21,131	14,500	18,210	1,840	29,000	0	0	850	9,600	9,800
1987	21,434	19,000	19,431	2,120	31,500	0	0	4,750	9,900	12,500
1988	22,304	25,000	20,652	2,320	34,000	0	0	5,700	10,800	13,800
1989	22,304	25,000	21,873	2,530	36,500	0	0	6,750	10,800	14,800
1990	23,000	25,000	23,100	2,750	38,100	0	50,800	8,000	60,000	18,500
1991	24,000	25,000	23,100	2,870	38,100	1,800	50,800	8,800	42,600	18,780
1992	25,000	25,000	23,100	2,990	38,100	1,900	50,800	9,600	42,600	19,060
1993	26,000	25,000	23,100	3,110	38,100	2,000	50,800	10,400	42,600	19,340
1994	27,000	25,000	23,100	3,230	38,100	2,100	50,800	11,200	42,600	19,620
1995	28,000	25,000	23,100	3,350	38,100	2,200	50,800	12,000	42,600	19,900
1996	29,400	25,000	23,100	3,470	38,100	2,300	50,800	12,600	42,600	20,200
1997	30,800	25,000	23,100	3,590	38,100	2,300	50,800	13,200	42,600	20,500
1998	32,200	25,000	23,100	3,710	38,100	2,300	50,800	13,800	42,600	20,800
1999	33,600	25,000	23,100	3,830	38,100	2,300	50,800	14,400	42,600	21,100
2000	35,000	25,000	23,100	3,950	38,100	2,300	50,800	15,000	42,600	21,400
2001	37,100	26,700	23,100	4,070	38,100	2,300	50,800	15,200	42,600	21,720
2002	39,208	28,400	23,100	4,190	38,100	2,300	50,800	15,400	42,600	22,040
2003	41,300	30,100	23,100	4,310	38,100	2,300	50,800	15,600	42,600	22,360
2004	43,400	31,800	23,100	4,430	38,100	2,300	50,800	15,800	42,600	22,680
2005	45,500	33,500	23,100	4,550	38,100	2,300	50,800	16,050	42,600	23,000
2006	48,000	33,500	23,100	4,670	38,100	2,300	50,800	16,300	42,600	23,360
2007	50,500	33,500	23,100	4,790	38,100	2,300	50,800	16,550	42,600	23,720
2008	53,000	33,500	23,100	4,910	38,100	2,300	50,800	16,800	42,600	24,080
2009	55,500	33,500	23,100	5,030	38,100	2,300	50,800	17,050	42,600	24,440
2010	58,000	33,500	23,100	5,150	38,100	2,300	50,800	17,300	42,600	24,800
2011	61,001	35,100	23,100	5,280	38,100	2,300	50,800	17,300	42,600	25,180
2012	64,002	36,700	23,100	5,410	38,100	2,300	50,800	17,300	42,600	25,560
2013	67,003	38,300	23,100	5,540	38,100	2,300	50,800	17,300	42,600	25,940
2014	70,004	39,900	23,100	5,670	38,100	2,300	50,800	17,300	42,600	26,320
2015	73,000	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	26,700
2016	76,500	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	27,120
2017	80,000	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	27,540
2018	83,500	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	27,960
2019	87,000	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	28,380
2020	90,500	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	28,800
2021	94,499	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	28,800
2022	98,498	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	28,800
2023	102,497	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	28,800
2024	106,496	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	28,800
2025	110,495	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	28,800
2026	115,090	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	28,800
2027	119,500	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	28,800
2028	124,000	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	28,800
2029	128,500	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	28,800
2030	133,000	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	28,800
2031	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	28,800
2032	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	28,800
2033	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	28,800
2034	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	28,800
2035	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	42,600	28,800
TOTAL	3,880,094	1,748,770	1,273,332	250,343	2,087,900	106,088	2,359,449	741,600	4,410,074	1,270,927

DELIVERED TO EACH CONTRACTOR^(a)

(in acre-feet)

Sheet 4 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Geronimo 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	70	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	368,170	0	463,265	1,000	1,200	830	3,030	0	1,561,858
1985	0	544,011	0	639,973	1,200	1,200	860	3,260	0	1,897,531
1986	0	1,261,590	0	1,366,521	1,400	1,200	890	3,490	0	2,682,948
1987	0	1,270,969	0	1,391,604	1,500	1,200	920	3,620	0	2,780,832
1988	0	1,270,948	750	1,406,274	1,800	1,200	960	3,960	0	2,842,989
1989	10,800	1,255,227	1,500	1,408,084	2,000	1,200	1,000	4,200	0	2,896,699
1990	11,800	1,318,800	2,500	1,582,350	2,000	1,200	1,040	4,240	0	3,130,539
1991	12,900	1,350,800	3,500	1,603,050	2,120	27,500	1,080	30,700	0	3,255,508
1992	14,000	1,382,800	4,500	1,639,450	2,240	27,500	1,120	30,860	0	3,300,176
1993	15,100	1,414,800	5,500	1,675,850	2,360	27,500	1,160	31,020	0	3,345,186
1994	16,200	1,446,800	7,250	1,713,000	2,480	27,500	1,200	31,180	0	3,389,981
1995	17,300	1,478,800	9,000	1,750,150	2,600	27,500	1,250	31,350	0	3,436,266
1996	17,300	1,503,400	11,750	1,780,020	2,880	27,500	1,300	31,680	0	3,472,891
1997	17,300	1,528,000	14,500	1,809,790	3,160	27,500	1,350	32,010	0	3,506,311
1998	17,300	1,552,600	18,250	1,860,560	3,440	27,500	1,400	32,340	0	3,558,736
1999	17,300	1,577,200	19,000	1,928,330	3,720	27,500	1,450	32,670	0	3,628,136
2000	17,300	1,601,800	20,000	1,956,350	4,000	27,500	1,510	33,010	0	3,657,896
2001	17,300	1,625,200	20,000	1,984,190	5,120	27,500	1,570	34,190	0	3,687,531
2002	17,300	1,648,600	20,000	2,012,038	6,240	27,500	1,630	35,370	0	3,717,079
2003	17,300	1,672,000	20,000	2,039,870	7,360	27,500	1,690	36,550	0	3,746,706
2004	17,300	1,695,400	20,000	2,067,710	8,480	27,500	1,750	37,730	0	3,776,326
2005	17,300	1,718,800	20,000	2,095,600	9,600	27,500	1,810	38,910	0	3,805,996
2006	17,300	1,740,800	20,000	2,120,830	9,600	27,500	1,880	38,980	0	3,831,746
2007	17,300	1,762,800	20,000	2,146,060	9,600	27,500	1,950	39,050	0	3,857,696
2008	17,300	1,784,800	20,000	2,171,290	9,600	27,500	2,020	39,120	0	3,883,546
2009	17,300	1,806,800	20,000	2,196,520	9,600	27,500	2,090	39,190	0	3,909,396
2010	17,300	1,828,800	20,000	2,221,750	9,600	27,500	2,160	39,260	0	3,935,246
2011	17,300	1,846,800	20,000	2,244,861	9,600	27,500	2,240	39,340	0	3,959,087
2012	17,300	1,864,800	20,000	2,267,972	9,600	27,500	2,320	39,420	0	3,982,828
2013	17,300	1,882,800	20,000	2,291,083	9,600	27,500	2,410	39,510	0	4,006,679
2014	17,300	1,900,800	20,000	2,314,194	9,600	27,500	2,500	39,600	0	4,030,530
2015	17,300	1,918,800	20,000	2,337,300	9,600	27,500	2,600	39,700	0	4,054,386
2016	17,300	1,934,800	20,000	2,357,220	9,600	27,500	2,700	39,800	0	4,075,006
2017	17,300	1,950,800	20,000	2,377,140	9,600	27,500	2,700	39,800	0	4,095,526
2018	17,300	1,966,800	20,000	2,397,060	9,600	27,500	2,700	39,800	0	4,116,046
2019	17,300	1,982,800	20,000	2,416,980	9,600	27,500	2,700	39,800	0	4,136,566
2020	17,300	1,998,800	20,000	2,436,900	9,600	27,500	2,700	39,800	0	4,157,086
2021	17,300	2,003,000	20,000	2,445,099	9,600	27,500	2,700	39,800	0	4,165,385
2022	17,300	2,007,200	20,000	2,453,298	9,600	27,500	2,700	39,800	0	4,173,584
2023	17,300	2,011,500	20,000	2,461,597	9,600	27,500	2,700	39,800	0	4,181,883
2024	17,300	2,011,500	20,000	2,465,596	9,600	27,500	2,700	39,800	0	4,185,882
2025	17,300	2,011,500	20,000	2,469,600	9,600	27,500	2,700	39,800	0	4,189,886
2026	17,300	2,011,500	20,000	2,474,190	9,600	27,500	2,700	39,800	0	4,194,476
2027	17,300	2,011,500	20,000	2,478,600	9,600	27,500	2,700	39,800	0	4,198,886
2028	17,300	2,011,500	20,000	2,483,100	9,600	27,500	2,700	39,800	0	4,203,386
2029	17,300	2,011,500	20,000	2,487,600	9,600	27,500	2,700	39,800	0	4,207,886
2030	17,300	2,011,500	20,000	2,492,100	9,600	27,500	2,700	39,800	0	4,212,386
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	790,100	94,009,575	818,000	113,746,252	364,700	1,249,972	108,820	1,723,492	0	211,251,759

TABLE B-6 ANNUAL WATER QUANTITIES CONVEYED THRU EACH PUMPING

(in acre-feet)

Sheet 1 of 8

Calendar Year	NORTH BAY AQUEDUCT							SOUTH BAY AQUEDUCT					
	CACHE SLOUGH PUMPING PLANT			CORDELIA PUMPING PLANT				SOUTH BAY PUMPING PLANT					
	Operational Losses	Water Supply Delivery	Total	Initial Fill Water	Opera- tional Losses	Water Supply Delivery (b)	Total	Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries		Total
											Water Supply (c)	Recre- ation	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
1962	0	0	0	0	0	0	0	9	272	0	8,906	0	9,187
1963	0	0	0	0	0	0	0	71	185	0	12,645	0	12,901
1964	0	0	0	0	0	0	0	171	152	0	20,911	0	21,234
1965	0	0	0	0	0	0	0	93	729	0	34,026	0	34,848
1966	0	0	0	0	0	0	0	0	1,746	0	54,913	0	56,659
1967	0	0	0	0	0	0	0	0	1,677	0	56,763	0	58,440
1968	0	0	0	24	-10	1,214	1,228	0	1,847	0	101,055	0	102,902
1969	0	0	0	0	2	2,687	2,689	3,449	2,668	0	69,712	0	75,829
1970	0	0	0	0	18	3,618	3,636	16,279	1,086	-5,355	89,560	0	101,570
1971	0	0	0	0	4	2,521	2,525	0	1,815	8,854	98,584	0	109,253
1972	0	0	0	-10	3,647	3,637	0	0	3,557	2,273	138,426	0	144,256
1973	0	0	0	0	1	3,792	3,793	0	-33	-1,510	94,078	0	92,535
1974	0	0	0	0	10	4,870	4,880	0	1,287	-10,056	89,318	0	80,549
1975	0	0	0	0	10	6,840	6,850	0	320	8,550	93,604	0	102,474
1976	0	0	0	0	4	7,122	7,126	0	2,431	1,391	126,431	141	130,394
1977	0	0	0	0	2	8,226	8,228	0	2,866	2,685	107,704	112	113,367
1978	0	0	0	0	-6	6,034	6,028	0	2,165	-11,249	112,574	126	103,616
1979	0	0	0	0	1	6,561	6,562	0	2,401	1,069	122,190	89	125,749
1980	0	0	0	0	-3	6,707	6,704	0	1,758	-6,563	115,824	123	111,142
1981	0	0	0	0	8	9,001	9,009	0	2,627	13,742	129,507	121	145,997
1982	0	0	0	0	-8	1,213	1,205	0	2,344	-23,928	106,700	129	85,245
1983	0	0	0	0	-12	2,287	2,275	0	2,151	-22,886	94,656	132	74,053
1984	0	0	0	0	0	2,300	2,300	0	3,781	-11,127	143,600	400	136,654
1985	0	0	0	0	0	2,548	2,548	0	3,745	0	145,800	400	149,945
1986	0	0	0	0	0	2,937	2,937	0	3,745	0	148,100	400	152,245
1987	350	15,458	15,808	0	0	3,258	3,258	0	3,742	0	150,300	400	154,442
1988	350	17,055	17,405	0	0	3,495	3,495	0	3,687	0	152,500	400	156,587
1989	350	18,515	18,865	0	0	3,895	3,895	0	3,669	0	156,700	400	160,769
1990	350	22,449	22,799	0	0	6,745	6,745	0	3,630	0	160,900	400	164,930
1991	350	24,272	24,622	0	0	7,290	7,290	0	3,560	0	166,400	400	170,360
1992	350	26,880	27,230	0	0	7,840	7,840	0	3,496	0	171,900	400	175,796
1993	350	29,830	30,180	0	0	8,490	8,490	0	3,511	0	177,400	400	181,311
1994	350	32,715	33,065	0	0	9,135	9,135	0	3,455	0	182,000	400	185,855
1995	350	39,680	40,030	0	0	9,780	9,780	0	3,422	0	184,000	400	187,822
1996	350	44,105	44,455	0	0	10,425	10,425	0	3,388	0	186,000	400	189,788
1997	350	45,425	45,775	0	0	11,065	11,065	0	3,354	0	188,000	400	191,754
1998	350	46,750	47,100	0	0	11,710	11,710	0	3,354	0	188,000	400	191,754
1999	350	48,050	48,400	0	0	12,330	12,330	0	3,354	0	188,000	400	191,754
2000	350	49,450	49,800	0	0	13,050	13,050	0	3,354	0	188,000	400	191,754
2001	350	50,065	50,415	0	0	13,665	13,665	0	3,354	0	188,000	400	191,754
2002	350	50,585	50,935	0	0	14,185	14,185	0	3,354	0	188,000	400	191,754
2003	350	51,200	51,550	0	0	14,800	14,800	0	3,354	0	188,000	400	191,754
2004	350	51,800	52,150	0	0	15,400	15,400	0	3,354	0	188,000	400	191,754
2005	350	52,400	52,750	0	0	16,000	16,000	0	3,354	0	188,000	400	191,754
2006	350	52,850	53,200	0	0	16,450	16,450	0	3,354	0	188,000	400	191,754
2007	350	53,500	53,850	0	0	17,100	17,100	0	3,354	0	188,000	400	191,754
2008	350	54,050	54,400	0	0	17,650	17,650	0	3,354	0	188,000	400	191,754
2009	350	54,600	54,950	0	0	18,200	18,200	0	3,354	0	188,000	400	191,754
2010	350	55,150	55,500	0	0	18,750	18,750	0	3,354	0	188,000	400	191,754
2011	350	55,800	56,150	0	0	19,400	19,400	0	3,354	0	188,000	400	191,754
2012	350	56,350	56,700	0	0	19,950	19,950	0	3,354	0	188,000	400	191,754
2013	350	57,000	57,350	0	0	20,600	20,600	0	3,354	0	188,000	400	191,754
2014	350	57,650	58,000	0	0	21,250	21,250	0	3,354	0	188,000	400	191,754
2015	350	58,300	58,650	0	0	21,900	21,900	0	3,354	0	188,000	400	191,754
2016	350	58,900	59,250	0	0	22,500	22,500	0	3,354	0	188,000	400	191,754
2017	350	59,500	59,850	0	0	23,100	23,100	0	3,354	0	188,000	400	191,754
2018	350	60,100	60,450	0	0	23,700	23,700	0	3,354	0	188,000	400	191,754
2019	350	60,700	61,050	0	0	24,300	24,300	0	3,354	0	188,000	400	191,754
2020	350	61,300	61,650	0	0	24,900	24,900	0	3,354	0	188,000	400	191,754
2021	350	61,400	61,750	0	0	25,000	25,000	0	3,354	0	188,000	400	191,754
2022	350	61,400	61,750	0	0	25,000	25,000	0	3,354	0	188,000	400	191,754
2023	350	61,400	61,750	0	0	25,000	25,000	0	3,354	0	188,000	400	191,754
2024	350	61,400	61,750	0	0	25,000	25,000	0	3,354	0	188,000	400	191,754
2025	350	61,400	61,750	0	0	25,000	25,000	0	3,354	0	188,000	400	191,754
2026	350	61,400	61,750	0	0	25,000	25,000	0	3,354	0	188,000	400	191,754
2027	350	61,400	61,750	0	0	25,000	25,000	0	3,354	0	188,000	400	191,754
2028	350	61,400	61,750	0	0	25,000	25,000	0	3,354	0	188,000	400	191,754
2029	350	61,400	61,750	0	0	25,000	25,000	0	3,354	0	188,000	400	191,754
2030	350	61,400	61,750	0	0	25,000	25,000	0	3,354	0	188,000	400	191,754
2031	350	61,400	61,750	0	0	25,000	25,000	0	3,354	0	188,000	400	191,754
2032	350	61,400	61,750	0	0	25,000	25,000	0	3,354	0	188,000	400	191,754
2033	350	61,400	61,750	0	0	25,000	25,000	0	3,354	0	188,000	400	191,754
2034	350	61,400	61,750	0	0	25,000	25,000	0	3,354	0	188,000	400	191,754
2035	350	61,400	61,750	0	0	25,000	25,000	0	3,354	0	188,000	400	191,754

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)

Sheet 2 of 8

Calendar Year		CALIFORNIA AQUEDUCT														
		NORTH SAN JOAQUIN DIVISION								SAN LUIS DIVISION						
		HARVEY O. BANKS DELTA PUMPING PLANT								DOS AMIGOS PUMPING PLANT						
		Transportation Water								Deliveries						
		Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries		Total	Conser- vation Water	Total	Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries		Total	
(14)	(15)	(16)	Water Supply	Recre- ation	(19)	(20)	(21)	(22)	(23)	(24)	Water Supply	Recre- ation	(27)			
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1967	5,746	1,183	0	11,538	0	18,467	2,957	21,424	11,079	25,126	0	189,104	0	225,309		
1968	11,079	74,464	0	293,243	0	378,786	531,275	910,061	3,887	9,922	0	192,689	0	206,498		
1969	7,336	44,287	0	265,417	0	317,400	531,185	848,225	7,668	1,901	0	270,300	0	279,869		
1970	23,947	20,767	-5,355	365,771	0	405,130	-12,995	392,135	0	0	0	0	0	0		
1971	23,207	-10,754	8,854	651,665	8	672,980	7,708	680,688	23,207	-12,030	0	545,869	0	557,046		
1972	145,066	9,057	-4,285	1,033,432	6,489	1,189,759	48,300	1,238,059	145,066	-6,635	-6,558	886,840	6,481	1,025,194		
1973	214,941	-4,951	2,902	733,008	1,155	947,055	55,846	1,002,901	214,941	-6,778	1,329	635,716	1,147	846,355		
1974	247,894	-11,526	-32,510	873,302	2,118	1,079,278	54,683	1,133,961	247,894	-18,765	-15,295	780,513	2,108	998,455		
1975	110,149	-8,092	16,101	1,223,332	3,377	1,344,867	-102,625	1,242,242	110,149	-12,144	-693	1,126,152	3,358	1,226,822		
1976	67,834	5,443	-244,124	1,372,093	1,745	1,202,991	-442,348	760,643	67,834	-456	-152,171	1,241,550	1,581	1,158,338		
1977	0	39,897	-157,543	573,146	1,111	456,611	-13,507	443,104	0	26,359	-116,219	463,970	737	374,847		
1978	67,457	-36,898	35,129	1,451,842	1,177	1,518,707	752,075	2,270,782	67,457	1,905	79,308	1,335,362	680	1,484,712		
1979	17,397	60,958	-32,307	1,659,265	1,398	1,688,259	-112,053	1,594,658	17,397	33,884	-51,299	1,530,926	685	1,531,593		
1980	3,159	58,484	-275,538	1,529,187	2,131	1,317,423	186,601	1,504,024	3,159	34,391	-272,825	1,407,663	1,514	1,173,902		
1981	46,060	85,350	40,536	1,908,986	4,974	2,085,906	-931,878	1,154,028	46,060	36,962	23,359	1,775,179	4,348	1,885,908		
1982	5,979	45,662	90,901	1,748,828	4,646	1,896,016	337,775	2,233,791	5,979	33,526	108,407	1,638,290	4,205	1,790,407		
1983	6,071	47,022	-310,477	1,184,282	7,853	934,751	835,771	1,770,522	6,071	63,583	-101,155	1,085,804	7,475	1,061,778		
1984	0	78,083	-238,192	1,555,428	8,977	1,404,296	23,862	1,428,158	0	61,240	-227,065	1,407,028	7,380	1,248,583		
1985	0	79,521	303,140	1,890,473	8,977	2,282,111	-308,164	1,973,947	0	62,714	303,140	1,739,773	7,380	2,113,007		
1986	0	79,851	-57,871	2,675,121	9,093	2,706,194	95,313	2,801,507	0	63,044	-57,871	2,521,921	7,480	2,534,574		
1987	0	80,195	28,443	2,760,204	10,793	2,879,635	-78,968	2,800,667	0	63,391	28,443	2,604,704	9,180	2,705,718		
1988	0	80,084	-6,584	2,819,874	13,463	2,906,837	-1,975	2,904,862	0	63,335	-6,584	2,661,974	11,850	2,703,575		
1989	0	80,023	-6,054	2,870,184	13,793	2,957,946	157,289	3,115,235	0	63,292	-6,054	2,707,884	12,180	2,777,302		
1990	0	79,886	4,920	3,098,250	13,793	3,196,849	-48,819	3,148,030	0	63,194	4,920	2,931,650	12,180	3,011,944		
1991	0	80,275	-12,278	3,194,936	13,793	3,301,282	-60,113	3,241,169	0	63,653	-12,278	3,022,836	12,180	3,110,947		
1992	0	80,284	-46,616	3,236,836	13,793	3,284,297	62,035	3,346,332	0	63,726	-46,616	3,059,236	12,180	3,088,526		
1993	0	80,190	19,441	3,278,736	13,793	3,392,160	-37,686	3,354,474	0	63,617	19,441	3,095,636	12,180	3,190,874		
1994	0	80,095	2,917	3,320,486	13,793	3,417,291	24,714	3,442,005	0	63,578	2,917	3,132,786	12,180	3,211,461		
1995	0	79,847	8,355	3,359,636	13,793	3,461,631	-19,899	3,441,732	0	63,363	8,355	3,169,936	12,180	3,253,834		
1996	0	80,076	-4,061	3,391,506	13,793	3,481,314	73,338	3,554,652	0	63,626	-4,061	3,199,806	12,180	3,271,551		
1997	0	79,883	-14,179	3,423,276	13,793	3,502,773	27,962	3,530,735	0	63,467	-14,179	3,229,576	12,180	3,291,044		
1998	0	80,200	-589	3,474,046	13,793	3,567,450	-7,450	3,560,000	0	63,784	-589	3,280,346	12,180	3,355,721		
1999	0	80,007	2,630	3,541,816	13,793	3,638,246	25,079	3,663,325	0	63,591	2,630	3,348,116	12,180	3,426,517		
2000	0	80,130	-9,238	3,569,836	13,793	3,654,521	7,588	3,662,109	0	63,714	-9,238	3,376,136	12,180	3,442,792		
2001	0	79,849	-27,046	3,597,676	13,793	3,664,272	34,244	3,698,516	0	63,433	-27,046	3,403,976	12,180	3,452,543		
2002	0	79,854	33,185	3,625,524	13,793	3,752,356	-27,575	3,724,781	0	63,438	33,185	3,431,824	12,180	3,540,627		
2003	0	80,088	12,620	3,653,356	13,793	3,759,857	21,702	3,781,559	0	63,672	12,620	3,459,656	12,180	3,548,128		
2004	0	80,035	2,581	3,681,196	13,793	3,777,605	38,715	3,816,320	0	63,619	2,581	3,487,496	12,180	3,565,876		
2005	0	79,928	-10,518	3,709,086	13,793	3,792,289	10,986	3,803,275	0	63,512	-10,518	3,515,386	12,180	3,580,560		
2006	0	79,837	-13,237	3,734,316	13,793	3,814,709	-8,687	3,806,022	0	63,421	-13,237	3,540,616	12,180	3,602,980		
2007	0	79,841	5,922	3,759,546	13,793	3,859,102	26,593	3,885,695	0	63,425	5,922	3,565,846	12,180	3,647,373		
2008	0	79,717	7,504	3,784,776	13,793	3,885,790	8,547	3,894,337	0	63,301	7,504	3,591,076	12,180	3,674,061		
2009	0	79,751	-33,626	3,810,006	13,793	3,869,924	25,200	3,895,124	0	63,335	-33,626	3,616,306	12,180	3,658,195		
2010	0	79,660	-13,464	3,835,236	13,793	3,915,225	23,258	3,938,483	0	63,244	-13,464	3,641,536	12,180	3,703,496		
2011	0	79,509	-35,612	3,858,347	13,793	3,916,037	14,979	3,931,016	0	63,093	-35,612	3,664,647	12,180	3,704,308		
2012	0	79,603	19,963	3,881,458	13,793	3,924,817	283,696	4,278,513	0	63,187	19,963	3,687,758	12,180	3,783,088		
2013	0	79,611	-33,387	3,904,569	13,793	3,924,586	26,023	3,990,609	0	63,195	-33,387	3,710,869	12,180	3,752,857		
2014	0	79,499	1,059	3,927,680	13,793	4,022,031	-168,700	3,853,331	0	63,083	1,059	3,733,980	12,180	3,810,302		
2015	0	79,590	22,708	3,950,786	13,793	4,066,877	-21,750	4,045,127	0	63,174	22,708	3,757,086	12,180	3,855,148		
2016	0	79,601	-12,705	3,970,706	13,793	4,051,395	-6,779	4,044,616	0	63,185	-12,705	3,777,006	12,180	3,839,666		
2017	0	79,550	-5,431	3,990,626	13,793	4,078,538	-107,470	3,971,068	0	63,134	-5,431	3,796,926	12,180	3,866,809		
2018	0	79,450	-15,053	4,010,546	13,793	4,118,842	27,331	4,146,173	0	63,034	-15,053	3,816,846	12,180	3,907,113		
2019	0	79,436	-8,260	4,030,466	13,793	4,115,435	162,652	4,278,087	0	63,020	-8,260	3,836,766	12,180	3,970,706		
2020	0	79,280	-21,664	4,050,386	13,793	4,121,795	82,131	4,203,926	0	62,864	-21,664	3,856,686	12,180	3,910,066		
2021	0	79,276	22,049	4,054,385	13,793	4,169,503	-61,121	4,108,382	0	62,860	22,049	3,860,685	12,180	3,957,774		
2022	0	79,204	-10,125	4,058,384	13,793	4,141,256	-81,611	4,059,645	0	62,788	-10,125	3,864,684	12,180	3,929,527		
2023	0	79,314	19,074	4,062,383	13,793	4,174,564	64,713	4,239,277	0	62,898	19,074	3,868,683	12,180	3,962,835		
2024	0	79,265	-27,130	4,066,382	13,793	4,132,310	99,415	4,231,725	0	62,849	-27,130	3,872,682	12,180	3,920,581		
2025	0	79,303	26,347	4,070,386	13,793	4,189,829	-89,163	4,100,666	0	62,887	26,347	3,876,686	12,180	3,978,100		
2026	0	79,296	-26,756	4,074,976	13,793	4,141,309	128,926	4,270,235	0	62,880	-26,756	3,881,276	12,180	3,929,580		
2027	0	79,286	19,914	4,079,386	13,793	4,192,379	53,993	4,246,372	0	62,870	19,914	3,885,686	12,180	3,980,650		
2028	0	79,296	-19,557	4,083,886	13,793	4,157,418	-30,166	4,127,252	0	62,880	-19,557	3,890,186	12,180	3,945,689		
2029	0	79,244	17,990	4,088,386	13,793	4,199,413	-61,334	4,138,079	0	62,828	17,990	3,894,686	12,180	3,987,684		
2030	0	79,209	-22,347	4,092,886	13,793	4,163,541	122,529	4,286,070	0	62,793	-22,347	3,899,186	12,180	3,951,812		
2031	0	79,273														

TABLE B-6: ANNUAL WATER QUANTITIES CONVEYED THRU EACH PUMPING

(in acre-feet)

Sheet 3 of 8

Calendar Year		CALIFORNIA AQUEDUCT (Continued)										
		SOUTH SAN JOAQUIN DIVISION										
		BUENA VISTA PUMPING PLANT					WHEELER RIDGE PUMPING PLANT					
		Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries		Total	Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries	
Water Supply	Recre- ation				Water Supply	Recre- ation						
(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	
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	4,779	1,012	0	3	0	5,794	198	2	0	0	200	
1971	7,853	8,399	0	101,512	0	117,764	7,533	-112	0	3,552	0	10,973
1972	100,274	20,044	-6,558	223,626	6,481	343,867	100,274	12,765	-6,558	84,955	6,481	197,917
1973	204,638	35,695	1,329	311,096	1,147	553,905	204,638	21,543	1,329	229,685	1,147	458,342
1974	237,554	19,672	-15,295	388,949	2,108	632,988	237,554	11,843	-15,295	336,198	2,108	572,408
1975	103,352	26,342	-693	672,531	3,358	804,890	103,352	19,763	-693	621,706	3,358	747,486
1976	61,122	29,428	-152,171	785,055	1,581	725,015	61,122	18,552	-152,171	740,486	1,581	669,570
1977	0	25,173	-116,219	271,944	560	181,458	0	16,415	-116,219	246,349	560	147,105
1978	65,027	17,751	121,904	762,043	674	967,399	65,027	28,820	121,904	631,121	674	847,546
1979	12,302	46,157	-51,299	737,714	502	745,376	12,302	50,663	-51,299	625,561	502	637,729
1980	0	49,025	-134,009	778,059	1,262	694,337	0	48,825	-134,009	696,405	1,262	612,483
1981	0	38,942	23,359	1,077,322	4,112	1,143,735	0	51,600	23,359	998,307	4,112	1,077,378
1982	0	29,424	108,407	997,285	4,045	1,139,161	0	44,876	108,407	884,908	4,045	1,042,236
1983	0	40,205	-101,155	593,920	7,291	540,261	0	43,961	-101,155	487,915	7,291	438,012
1984	0	39,553	-227,065	686,575	7,180	506,243	0	35,923	-227,065	574,365	7,180	390,403
1985	0	41,027	303,140	927,473	7,180	1,278,820	0	37,397	303,140	734,673	7,180	1,082,390
1986	0	41,357	-57,871	1,650,471	7,280	1,641,237	0	37,727	-57,871	1,460,321	7,280	1,447,457
1987	0	41,704	28,443	1,691,429	8,980	1,770,556	0	38,074	28,443	1,487,604	8,980	1,563,101
1988	0	41,648	-6,584	1,678,824	11,650	1,725,538	0	38,018	-6,584	1,483,874	11,650	1,526,958
1989	0	41,605	-6,054	1,742,007	11,980	1,789,538	0	37,975	-6,054	1,528,694	11,980	1,572,595
1990	0	41,507	4,920	1,913,750	11,980	1,972,157	0	37,877	4,920	1,710,950	11,980	1,765,727
1991	0	41,416	12,278	1,934,450	11,980	2,000,124	0	37,786	12,278	1,731,650	11,980	1,793,694
1992	0	41,489	-46,616	1,970,850	11,980	1,977,703	0	37,859	-46,616	1,768,050	11,980	1,771,273
1993	0	41,380	19,441	2,007,250	11,980	2,080,051	0	37,750	19,441	1,804,450	11,980	1,873,621
1994	0	41,341	2,917	2,044,400	11,980	2,100,638	0	37,711	2,917	1,841,600	11,980	1,894,208
1995	0	41,126	8,355	2,081,550	11,980	2,143,011	0	37,496	8,355	1,878,750	11,980	1,936,581
1996	0	41,389	-4,061	2,111,420	11,980	2,160,728	0	37,759	-4,061	1,908,620	11,980	1,954,298
1997	0	41,230	-14,179	2,141,190	11,980	2,180,221	0	37,600	-14,179	1,938,390	11,980	1,973,791
1998	0	41,547	-589	2,191,960	11,980	2,244,898	0	37,917	-589	1,989,160	11,980	2,038,468
1999	0	41,354	2,630	2,259,730	11,980	2,315,694	0	37,724	2,630	2,056,930	11,980	2,109,264
2000	0	41,477	-9,238	2,287,750	11,980	2,331,969	0	37,847	-9,238	2,084,950	11,980	2,125,539
2001	0	41,196	-27,046	2,315,590	11,980	2,341,720	0	37,566	-27,046	2,112,790	11,980	2,135,290
2002	0	41,201	33,185	2,343,438	11,980	2,429,804	0	37,571	33,185	2,140,638	11,980	2,223,374
2003	0	41,435	12,620	2,371,270	11,980	2,437,305	0	37,805	12,620	2,168,470	11,980	2,230,875
2004	0	41,382	2,581	2,399,110	11,980	2,455,053	0	37,752	2,581	2,196,310	11,980	2,248,623
2005	0	41,275	-10,518	2,427,000	11,980	2,469,737	0	37,645	-10,518	2,224,200	11,980	2,263,307
2006	0	41,184	-13,237	2,452,230	11,980	2,492,157	0	37,554	-13,237	2,249,430	11,980	2,285,727
2007	0	41,188	5,922	2,477,460	11,980	2,536,550	0	37,558	5,922	2,274,660	11,980	2,330,120
2008	0	41,064	7,504	2,502,690	11,980	2,563,238	0	37,434	7,504	2,299,890	11,980	2,356,808
2009	0	41,098	-33,626	2,527,920	11,980	2,547,372	0	37,468	-33,626	2,325,120	11,980	2,340,942
2010	0	41,007	-13,464	2,553,150	11,980	2,592,673	0	37,377	-13,464	2,350,350	11,980	2,386,243
2011	0	40,856	-35,612	2,576,261	11,980	2,593,485	0	37,226	-35,612	2,373,461	11,980	2,387,055
2012	0	40,950	19,963	2,599,372	11,980	2,672,265	0	37,320	19,963	2,396,572	11,980	2,465,835
2013	0	40,958	-33,387	2,622,483	11,980	2,642,034	0	37,328	-33,387	2,419,683	11,980	2,435,604
2014	0	40,846	1,059	2,645,594	11,980	2,699,479	0	37,216	1,059	2,442,794	11,980	2,493,049
2015	0	40,937	22,708	2,668,700	11,980	2,744,325	0	37,307	22,708	2,465,900	11,980	2,537,895
2016	0	40,948	-12,705	2,688,620	11,980	2,728,843	0	37,318	-12,705	2,485,820	11,980	2,522,413
2017	0	40,897	-5,431	2,708,540	11,980	2,755,986	0	37,267	-5,431	2,505,740	11,980	2,549,556
2018	0	40,797	15,053	2,728,460	11,980	2,796,290	0	37,167	15,053	2,525,660	11,980	2,589,860
2019	0	40,783	-8,260	2,748,380	11,980	2,792,883	0	37,153	-8,260	2,545,580	11,980	2,586,453
2020	0	40,627	-21,664	2,768,300	11,980	2,799,243	0	36,997	-21,664	2,565,500	11,980	2,592,813
2021	0	40,623	22,049	2,772,299	11,980	2,846,951	0	36,993	22,049	2,569,499	11,980	2,640,521
2022	0	40,551	-10,125	2,776,298	11,980	2,818,704	0	36,921	-10,125	2,573,498	11,980	2,612,274
2023	0	40,661	19,074	2,780,297	11,980	2,852,012	0	37,031	19,074	2,577,497	11,980	2,645,582
2024	0	40,612	-27,130	2,784,296	11,980	2,809,758	0	36,982	-27,130	2,581,496	11,980	2,603,328
2025	0	40,650	26,347	2,788,300	11,980	2,867,277	0	37,020	26,347	2,585,500	11,980	2,660,847
2026	0	40,643	-26,756	2,792,890	11,980	2,818,757	0	37,013	-26,756	2,590,090	11,980	2,612,327
2027	0	40,633	19,914	2,797,300	11,980	2,869,827	0	37,003	19,914	2,594,500	11,980	2,663,397
2028	0	40,643	-19,557	2,801,800	11,980	2,834,866	0	37,013	-19,557	2,599,000	11,980	2,628,436
2029	0	40,591	17,990	2,806,300	11,980	2,876,861	0	36,961	17,990	2,603,500	11,980	2,670,431
2030	0	40,556	-22,347	2,810,800	11,980	2,840,989	0	36,926	-22,347	2,608,000	11,980	2,634,559
2031	0	40,620	23,352	2,816,200	11,980	2,892,152	0	36,990	23,352	2,613,400	11,980	2,685,722
2032	0	40,610	-26,395	2,816,200	11,980	2,842,395	0	36,980	-26,395	2,613,400	11,980	2,635,965
2033	0	40,587	11,486	2,816,200	11,980	2,880,253	0	36,957	11,486	2,613,400	11,980	2,673,823
2034	0	40,481	-18,670	2,816,200	11,980	2,849,991	0	36,851	-18,670	2,613,400	11,980	2,643,561
2035	0	40,619	44,763	2,816,200	11,980	2,913,562	0	36,989	44,763	2,613,400	11,980	2,707,132

AND POWER RECOVERY PLANT OF PROJECT TRANSPORTATION FACILITIES^(a)

(in acre-feet)

Sheet 4 of 8

Calendar Year	CALIFORNIA AQUEDUCT (continued)											
	SOUTH SAN JOAQUIN DIVISION (continued)						TEHACHAPI DIVISION					
	WIND GAP PUMPING PLANT						A. D. EDMONSTON PUMPING PLANT					
	Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries		Total	Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries		Total
				Water Supply	Recre- ation					Water Supply	Recre- ation	
(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	
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	7,366	-159	0	0	7,207	5,446	8	0	0	0	5,454	
1972	100,274	13,160	-6,558	78,891	6,481	192,248	100,274	16,067	-6,558	74,123	6,481	190,387
1973	204,638	32,414	1,329	209,769	1,147	449,297	204,638	34,051	1,329	207,808	1,147	448,973
1974	237,554	17,655	-15,295	318,198	2,108	560,220	237,554	18,181	-15,295	313,634	2,108	556,182
1975	103,352	25,326	-693	586,286	3,358	717,629	103,352	20,183	-693	573,219	3,358	699,419
1976	61,122	21,468	-152,171	700,935	1,581	632,935	61,122	21,096	-152,171	685,768	1,581	617,396
1977	0	15,698	-116,219	240,191	560	140,230	0	18,424	-116,219	236,086	560	138,851
1978	65,027	26,705	121,904	599,973	674	814,283	65,027	20,887	121,904	590,329	674	798,821
1979	12,302	50,580	-51,299	586,959	502	599,044	12,302	46,332	-51,299	568,338	502	576,175
1980	0	58,085	-134,009	658,588	1,262	583,926	0	52,967	-134,009	639,743	1,262	559,963
1981	0	48,844	23,359	959,274	4,112	1,035,589	0	40,602	23,359	938,482	4,112	1,006,555
1982	0	34,009	108,407	837,126	4,045	983,587	0	37,731	108,407	818,628	4,045	968,811
1983	0	34,698	-101,155	450,489	7,291	391,323	0	40,690	-101,155	431,182	7,291	378,008
1984	0	35,673	-227,065	512,465	7,180	328,253	0	34,123	-227,065	463,265	7,180	277,503
1985	0	37,147	303,140	675,873	7,180	1,023,340	0	35,597	303,140	639,973	7,180	985,890
1986	0	37,477	-57,871	1,406,321	7,280	1,393,207	0	35,927	-57,871	1,366,521	7,280	1,351,857
1987	0	37,824	28,443	1,433,104	8,980	1,508,351	0	36,274	28,443	1,391,604	8,980	1,465,301
1988	0	37,768	-6,584	1,437,874	11,650	1,480,708	0	36,218	-6,584	1,406,274	11,650	1,447,558
1989	0	37,725	-6,054	1,470,534	11,980	1,514,185	0	36,175	-6,054	1,408,084	11,980	1,450,185
1990	0	37,627	4,920	1,650,950	11,980	1,705,477	0	36,077	4,920	1,584,350	11,980	1,637,327
1991	0	37,536	12,278	1,671,650	11,980	1,733,444	0	35,986	12,278	1,605,050	11,980	1,665,294
1992	0	37,609	-46,616	1,708,050	11,980	1,711,023	0	36,059	-46,616	1,641,450	11,980	1,642,873
1993	0	37,500	19,441	1,744,450	11,980	1,813,371	0	35,950	19,441	1,677,850	11,980	1,745,221
1994	0	37,461	2,917	1,781,600	11,980	1,833,958	0	35,911	2,917	1,715,000	11,980	1,765,808
1995	0	37,246	8,355	1,818,750	11,980	1,876,331	0	35,696	8,355	1,752,150	11,980	1,808,181
1996	0	37,509	-4,061	1,848,620	11,980	1,894,048	0	35,959	-4,061	1,782,020	11,980	1,825,898
1997	0	37,350	-14,179	1,878,390	11,980	1,913,541	0	35,800	-14,179	1,811,790	11,980	1,845,391
1998	0	37,667	-589	1,929,160	11,980	1,978,218	0	36,117	-589	1,862,560	11,980	1,910,068
1999	0	37,474	2,630	1,996,930	11,980	2,049,014	0	35,924	2,630	1,930,330	11,980	1,980,864
2000	0	37,597	-9,238	2,024,950	11,980	2,065,289	0	36,047	-9,238	1,958,350	11,980	1,997,139
2001	0	37,316	-27,046	2,052,790	11,980	2,075,040	0	35,766	-27,046	1,986,190	11,980	2,006,890
2002	0	37,321	33,185	2,080,638	11,980	2,165,124	0	35,771	33,185	2,014,038	11,980	2,094,974
2003	0	37,555	12,620	2,108,470	11,980	2,170,625	0	36,005	12,620	2,041,870	11,980	2,102,475
2004	0	37,502	2,581	2,136,310	11,980	2,188,373	0	35,952	2,581	2,069,710	11,980	2,120,223
2005	0	37,395	-10,518	2,164,200	11,980	2,203,057	0	35,845	-10,518	2,097,600	11,980	2,134,907
2006	0	37,304	-13,237	2,189,430	11,980	2,225,477	0	35,754	-13,237	2,122,830	11,980	2,157,327
2007	0	37,308	5,922	2,214,660	11,980	2,269,870	0	35,758	5,922	2,148,060	11,980	2,201,720
2008	0	37,184	7,504	2,239,890	11,980	2,296,558	0	35,634	7,504	2,173,290	11,980	2,228,408
2009	0	37,218	-33,626	2,265,120	11,980	2,280,692	0	35,668	-33,626	2,198,520	11,980	2,212,542
2010	0	37,127	-13,464	2,290,350	11,980	2,325,993	0	35,577	-13,464	2,223,750	11,980	2,257,843
2011	0	36,976	-35,612	2,313,461	11,980	2,326,805	0	35,426	-35,612	2,246,861	11,980	2,258,655
2012	0	37,070	19,963	2,336,572	11,980	2,405,585	0	35,520	19,963	2,269,972	11,980	2,337,435
2013	0	37,078	-33,387	2,359,683	11,980	2,375,354	0	35,528	-33,387	2,293,083	11,980	2,307,204
2014	0	36,966	1,059	2,382,794	11,980	2,432,799	0	35,416	1,059	2,316,194	11,980	2,364,649
2015	0	37,057	22,708	2,405,900	11,980	2,477,645	0	35,507	22,708	2,339,300	11,980	2,409,495
2016	0	37,068	-12,705	2,425,820	11,980	2,462,163	0	35,518	-12,705	2,359,220	11,980	2,394,013
2017	0	37,017	-5,431	2,445,740	11,980	2,489,306	0	35,467	-5,431	2,379,140	11,980	2,421,156
2018	0	36,917	15,053	2,465,660	11,980	2,529,610	0	35,367	15,053	2,399,060	11,980	2,461,460
2019	0	36,903	-8,260	2,485,580	11,980	2,526,203	0	35,353	-8,260	2,418,980	11,980	2,458,053
2020	0	36,747	-21,664	2,505,500	11,980	2,532,563	0	35,197	-21,664	2,438,900	11,980	2,464,413
2021	0	36,743	22,049	2,509,499	11,980	2,580,271	0	35,193	22,049	2,442,899	11,980	2,512,121
2022	0	36,671	-10,125	2,513,498	11,980	2,552,174	0	35,121	-10,125	2,446,898	11,980	2,483,874
2023	0	36,781	19,077	2,517,497	11,980	2,585,332	0	35,231	19,077	2,450,897	11,980	2,517,182
2024	0	36,732	-27,130	2,521,496	11,980	2,543,078	0	35,182	-27,130	2,454,896	11,980	2,474,928
2025	0	36,770	26,347	2,525,500	11,980	2,600,597	0	35,220	26,347	2,458,900	11,980	2,532,447
2026	0	36,763	-26,756	2,530,090	11,980	2,552,077	0	35,213	-26,756	2,463,490	11,980	2,483,927
2027	0	36,753	19,914	2,534,500	11,980	2,603,147	0	35,203	19,914	2,467,900	11,980	2,534,997
2028	0	36,763	-19,557	2,539,000	11,980	2,568,186	0	35,213	-19,557	2,472,400	11,980	2,500,036
2029	0	36,711	17,990	2,543,500	11,980	2,610,181	0	35,161	17,990	2,476,900	11,980	2,542,031
2030	0	36,676	-22,347	2,548,000	11,980	2,574,309	0	35,126	-22,347	2,481,400	11,980	2,506,159
2031	0	36,740	23,352	2,553,400	11,980	2,625,472	0	35,190	23,352	2,486,800	11,980	2,557,322
2032	0	36,730	-26,395	2,553,400	11,980	2,575,715	0	35,180	-26,395	2,486,800	11,980	2,507,565
2033	0	36,707	11,486	2,553,400	11,980	2,613,573	0	35,157	11,486	2,486,800	11,980	2,545,423
2034	0	36,601	-18,670	2,553,400	11,980	2,583,311	0	35,051	-18,670	2,486,800	11,980	2,515,161
2035	0	36,739	44,763	2,553,400	11,980	2,646,882	0	35,189	44,763	2,486,800	11,980	2,578,732

TABLE B-6: ANNUAL WATER QUANTITIES CONVEYED THRU EACH PUMPING

(in acre-feet)

Sheet 5 of 8

CALIFORNIA AQUEDUCT (Continued)												
MOJAVE DIVISION												
Calendar Year	ALAMO POWERPLANT						PEARBLOSSOM 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	
(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)	(62)	(63)	
1962	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	21	0	0	0	0	21
1972	0	0	0	0	0	0	35,243	5,282	-153	1,794	0	42,166
1973	0	0	0	0	0	0	80,177	21,522	-2,700	52,201	72	151,272
1974	0	0	0	0	0	0	76,694	10,847	-11,149	102,839	44	179,275
1975	0	0	0	0	0	0	10,000	2,364	-8,397	190,351	70	194,388
1976	0	0	0	0	0	0	4,168	7,040	-16,055	236,713	152	232,018
1977	0	0	0	0	0	0	0	11,398	-17,534	102,326	580	96,770
1978	0	0	0	0	0	0	19,922	5,696	69,130	374,845	498	470,091
1979	0	0	0	0	0	0	12,302	6,836	-32,518	362,114	502	349,236
1980	0	0	0	0	0	0	0	16,200	6,159	401,214	781	424,354
1981	0	0	0	0	0	0	0	4,992	-36,278	574,573	933	544,220
1982	0	0	0	0	0	0	0	4,891	48,383	407,459	1,919	462,652
1983	0	0	0	0	0	0	0	11,745	-26,847	231,188	1,180	217,266
1984	0	21,304	-6,254	246,465	2,230	263,745	0	15,954	-6,254	225,023	1,430	236,153
1985	0	21,020	30,690	331,973	2,230	385,913	0	15,670	30,690	311,140	1,430	358,930
1986	0	21,155	-17,578	845,021	2,230	850,828	0	15,805	-17,578	823,040	1,430	822,697
1987	0	21,204	5,711	849,504	3,730	880,149	0	15,854	5,711	823,320	1,430	846,315
1988	0	21,222	-1,268	850,524	6,230	876,708	0	15,872	-1,268	822,520	1,430	838,554
1989	0	21,130	-10,101	851,584	6,230	868,843	0	15,780	-10,101	822,530	1,430	829,639
1990	0	21,047	17,892	1,044,850	6,230	1,090,019	0	15,697	17,892	1,013,850	1,430	1,048,869
1991	0	20,898	-8,981	1,060,550	6,230	1,078,697	0	15,548	-8,981	1,025,950	1,430	1,033,947
1992	0	21,073	-8,238	1,091,950	6,230	1,111,015	0	15,723	-8,238	1,055,450	1,430	1,064,365
1993	0	20,994	-3,710	1,123,350	6,230	1,146,864	0	15,644	-3,710	1,084,950	1,430	1,098,314
1994	0	20,890	-18,328	1,154,750	6,230	1,163,542	0	15,540	-18,328	1,114,450	1,430	1,113,092
1995	0	20,962	38,556	570,150	6,230	635,898	0	15,612	38,556	527,950	1,430	583,548
1996	0	20,972	3,273	572,670	6,230	603,145	0	15,622	3,273	528,370	1,430	548,695
1997	0	20,757	-6,284	575,090	6,230	595,793	0	15,407	-6,284	528,790	1,430	539,343
1998	0	21,137	-4,906	597,510	6,230	619,971	0	15,787	-4,906	549,210	1,430	561,521
1999	0	20,961	7,282	639,930	6,230	674,403	0	15,611	7,282	589,630	1,430	613,953
2000	0	21,180	6,443	642,350	6,230	676,203	0	15,830	6,443	590,050	1,430	613,753
2001	0	20,917	-21,416	645,490	6,230	651,221	0	15,567	-21,416	590,890	1,430	586,471
2002	0	21,087	4,521	648,638	6,230	680,476	0	15,737	4,521	591,730	1,430	613,418
2003	0	21,132	3,967	651,770	6,230	683,099	0	15,782	3,967	592,570	1,430	613,749
2004	0	21,138	8,295	654,910	6,230	690,573	0	15,788	8,295	593,410	1,430	618,923
2005	0	21,032	-992	658,100	6,230	684,370	0	15,682	-992	594,250	1,430	610,370
2006	0	20,955	-1,309	668,730	6,230	694,606	0	15,605	-1,309	602,130	1,430	617,856
2007	0	21,026	-6,676	679,360	6,230	699,940	0	15,676	-6,676	610,010	1,430	620,440
2008	0	20,982	230	689,990	6,230	717,432	0	15,632	230	617,890	1,430	635,182
2009	0	21,000	950	700,620	6,230	728,800	0	15,650	950	625,770	1,430	643,800
2010	0	21,001	-4,413	711,250	6,230	734,068	0	15,651	-4,413	633,650	1,430	646,318
2011	0	20,893	-12,912	719,961	6,230	734,172	0	15,543	-12,912	639,360	1,430	643,421
2012	0	20,865	11,696	728,672	6,230	767,463	0	15,515	11,696	645,070	1,430	673,711
2013	0	20,977	-20,060	737,383	6,230	744,530	0	15,627	-20,060	650,780	1,430	647,777
2014	0	20,904	-12,397	746,094	6,230	760,831	0	15,554	-12,397	656,490	1,430	661,077
2015	0	20,991	16,317	754,800	6,230	798,338	0	15,641	16,317	662,200	1,430	695,588
2016	0	21,019	-6,302	762,520	6,230	783,467	0	15,669	-6,302	666,420	1,430	677,217
2017	0	21,030	4,104	770,240	6,230	801,604	0	15,680	4,104	670,640	1,430	691,854
2018	0	20,981	12,731	777,960	6,230	817,902	0	15,631	12,731	674,860	1,430	704,652
2019	0	20,969	-3,005	785,680	6,230	809,874	0	15,619	-3,005	679,080	1,430	693,124
2020	0	20,767	-32,070	793,400	6,230	788,327	0	15,417	-32,070	683,300	1,430	668,077
2021	0	20,740	29,187	797,399	6,230	853,556	0	15,390	29,187	683,300	1,430	729,307
2022	0	20,717	-12,431	801,398	6,230	815,914	0	15,367	-12,431	683,300	1,430	687,666
2023	0	20,776	13,468	805,397	6,230	845,871	0	15,426	13,468	683,300	1,430	713,624
2024	0	20,734	-23,002	809,396	6,230	813,358	0	15,384	-23,002	683,300	1,430	677,112
2025	0	20,776	24,234	813,400	6,230	864,640	0	15,426	24,234	683,300	1,430	724,390
2026	0	20,772	-27,863	817,990	6,230	817,129	0	15,422	-27,863	683,300	1,430	672,289
2027	0	20,762	20,969	822,400	6,230	870,361	0	15,412	20,969	683,300	1,430	721,111
2028	0	20,779	-19,196	826,900	6,230	834,713	0	15,429	-19,196	683,300	1,430	680,963
2029	0	20,729	17,417	831,400	6,230	875,776	0	15,379	17,417	683,300	1,430	717,526
2030	0	20,699	-19,345	835,900	6,230	843,484	0	15,349	-19,345	683,300	1,430	680,734
2031	0	20,765	21,495	841,300	6,230	889,790	0	15,415	21,495	683,300	1,430	721,640
2032	0	20,760	-23,019	841,300	6,230	845,271	0	15,410	-23,019	683,300	1,430	677,121
2033	0	20,744	11,082	841,300	6,230	879,356	0	15,394	11,082	683,300	1,430	711,206
2034	0	20,674	-16,562	841,300	6,230	851,642	0	15,324	-16,562	683,300	1,430	683,492
2035	0	20,766	39,309	841,300	6,230	907,605	0	15,416	39,309	683,300	1,430	739,455

AND POWER RECOVERY PLANT OF PROJECT TRANSPORTATION FACILITIES^(a)

(in acre-feet)

Sheet 6 of 8

Calendar Year	CALIFORNIA AQUEDUCT (Continued)											
	SANTA ANA DIVISION						WEST BRANCH, CALIFORNIA AQUEDUCT					
	DEVIL CANYON POWERPLANT						OSD 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		
(64)	(65)	(66)	(67)	(68)	(69)	(70)	(71)	(72)	(73)	(74)	(75)	
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	2,444	133	0	0	0	2,577	
1972	0	0	0	1,275	0	63,883	6,557	-6,405	71,991	6,481	142,507	
1973	40,848	14,745	0	51,812	0	107,405	16,995	4,029	155,317	1,075	301,877	
1974	74,666	8,367	-4,925	102,198	0	180,306	12,702	-4,146	209,172	2,064	380,652	
1975	10,000	1,995	-6,719	189,526	0	194,802	23,008	7,704	374,306	3,288	501,658	
1976	4,168	5,180	-9,182	235,711	23	235,900	56,954	15,845	-136,116	420,708	1,429	358,820
1977	0	8,082	-5,235	101,137	469	104,453	0	4,407	-98,685	122,447	-20	28,149
1978	14,820	3,754	21,686	373,636	481	414,377	45,105	9,061	52,774	171,139	176	278,255
1979	12,302	5,620	-27,107	356,854	485	348,154	0	25,355	-18,781	145,598	0	152,172
1980	0	9,468	12,714	395,975	742	416,899	0	24,576	-140,168	165,931	481	50,820
1981	0	8,401	-23,448	569,088	807	554,848	0	15,254	59,637	283,264	3,179	361,334
1982	0	5,012	48,521	395,721	1,798	451,052	0	24,292	60,024	360,878	2,126	447,320
1983	0	8,597	5,188	230,277	1,078	245,140	0	23,601	-74,308	166,995	6,111	122,359
1984	0	8,565	-18,418	223,538	1,250	214,935	0	12,769	-220,811	216,800	4,950	13,708
1985	0	8,489	9,149	309,500	1,250	328,388	0	14,527	272,450	308,000	4,950	599,927
1986	0	8,461	-12,303	821,200	1,250	818,608	0	14,722	-40,293	521,500	5,050	500,979
1987	0	8,570	1,906	821,200	1,250	832,926	0	15,020	22,732	542,100	5,250	585,102
1988	0	8,535	-4,904	820,200	1,250	825,081	0	14,946	-5,316	555,750	5,420	570,800
1989	0	8,443	-4,730	820,000	1,250	824,963	0	14,995	4,047	556,500	5,750	581,292
1990	0	8,504	13,763	960,300	1,250	983,817	0	14,980	-12,972	537,500	5,750	545,258
1991	0	8,436	1,181	972,280	1,250	983,147	0	15,038	21,259	542,500	5,750	584,547
1992	0	8,475	-12,055	1,001,660	1,250	999,330	0	14,936	-38,378	547,500	5,750	529,808
1993	0	8,482	4,402	1,031,040	1,250	1,045,174	0	14,906	23,151	552,500	5,750	596,307
1994	0	8,322	-13,315	1,060,420	1,250	1,056,677	0	14,971	21,245	558,250	5,750	600,216
1995	0	8,349	20,931	473,800	1,250	504,330	0	14,684	-30,201	1,180,000	5,750	1,170,233
1996	0	8,465	3,601	474,100	1,250	487,416	0	14,937	-7,334	1,207,350	5,750	1,220,703
1997	0	8,314	-2,930	474,400	1,250	481,034	0	14,993	-7,895	1,234,700	5,750	1,247,548
1998	0	8,474	7,153	494,700	1,250	511,577	0	14,930	4,317	1,263,050	5,750	1,288,047
1999	0	8,360	-7,095	535,000	1,250	537,515	0	14,913	-4,652	1,288,400	5,750	1,304,411
2000	0	8,548	494	535,300	1,250	545,592	0	14,817	-15,681	1,314,000	5,750	1,318,886
2001	0	8,435	-4,295	536,020	1,250	541,410	0	14,799	-5,630	1,338,700	5,750	1,353,619
2002	0	8,459	-4,600	536,740	1,250	541,849	0	14,634	28,664	1,363,400	5,750	1,412,448
2003	0	8,532	403	537,460	1,250	547,645	0	14,823	8,653	1,388,100	5,750	1,417,326
2004	0	8,505	10,756	538,180	1,250	558,691	0	14,764	-5,714	1,412,800	5,750	1,427,600
2005	0	8,427	2,851	538,900	1,250	551,428	0	14,763	-9,526	1,437,500	5,750	1,448,487
2006	0	8,346	-3,684	546,660	1,250	552,572	0	14,749	-11,928	1,452,100	5,750	1,460,671
2007	0	8,364	-2,812	554,420	1,250	561,222	0	14,682	12,598	1,466,700	5,750	1,499,730
2008	0	8,386	-7,073	562,180	1,250	564,743	0	14,602	7,274	1,481,300	5,750	1,508,926
2009	0	8,505	11,913	569,940	1,250	591,608	0	14,618	-34,576	1,495,900	5,750	1,481,692
2010	0	8,432	2,355	577,700	1,250	589,737	0	14,526	-9,051	1,510,500	5,750	1,521,725
2011	0	8,259	-19,073	583,280	1,250	573,716	0	14,483	-22,700	1,524,900	5,750	1,522,433
2012	0	8,352	11,932	588,860	1,250	610,394	0	14,605	8,267	1,539,300	5,750	1,567,922
2013	0	8,443	-15,688	594,440	1,250	588,445	0	14,501	-13,327	1,553,700	5,750	1,560,624
2014	0	8,328	-11,349	600,020	1,250	598,249	0	14,462	13,456	1,568,100	5,750	1,601,768
2015	0	8,294	5,711	605,600	1,250	620,855	0	14,466	6,391	1,582,500	5,750	1,609,107
2016	0	8,415	3,941	609,820	1,250	623,426	0	14,449	-6,403	1,594,700	5,750	1,608,496
2017	0	8,383	4,061	614,040	1,250	627,734	0	14,387	-9,535	1,606,900	5,750	1,617,502
2018	0	8,367	12,582	618,260	1,250	640,459	0	14,336	2,322	1,619,100	5,750	1,641,508
2019	0	8,321	-7,268	622,480	1,250	624,783	0	14,334	-5,255	1,631,300	5,750	1,646,129
2020	0	8,191	-32,129	626,700	1,250	604,012	0	14,380	10,406	1,643,500	5,750	1,674,036
2021	0	8,163	33,868	626,700	1,250	669,981	0	14,403	-7,138	1,643,500	5,750	1,656,515
2022	0	8,141	-11,518	626,700	1,250	624,573	0	14,354	2,306	1,643,500	5,750	1,665,910
2023	0	8,204	3,644	626,700	1,250	639,798	0	14,405	5,606	1,643,500	5,750	1,669,261
2024	0	8,234	-15,894	626,700	1,250	620,290	0	14,398	-4,128	1,643,500	5,750	1,659,520
2025	0	8,197	23,967	626,700	1,250	660,114	0	14,394	2,113	1,643,500	5,750	1,665,757
2026	0	8,228	-29,005	626,700	1,250	607,173	0	14,391	1,107	1,643,500	5,750	1,664,748
2027	0	8,165	23,738	626,700	1,250	659,853	0	14,391	-1,055	1,643,500	5,750	1,662,586
2028	0	8,214	-20,571	626,700	1,250	615,593	0	14,384	-361	1,643,500	5,750	1,663,273
2029	0	8,143	17,594	626,700	1,250	653,687	0	14,382	573	1,643,500	5,750	1,664,205
2030	0	8,153	-19,155	626,700	1,250	616,948	0	14,377	-3,002	1,643,500	5,750	1,660,625
2031	0	8,207	18,974	626,700	1,250	655,131	0	14,375	1,857	1,643,500	5,750	1,665,482
2032	0	8,260	-19,813	626,700	1,250	616,397	0	14,370	-3,376	1,643,500	5,750	1,660,244
2033	0	8,175	8,317	626,700	1,250	644,442	0	14,363	404	1,643,500	5,750	1,664,017
2034	0	8,181	-12,542	626,700	1,250	623,589	0	14,327	-2,108	1,643,500	5,750	1,661,469
2035	0	8,224	23,733	626,700	1,250	659,907	0	14,373	5,454	1,643,500	5,750	1,669,077

TABLE B-6: ANNUAL WATER QUANTITIES CONVEYED THRU EACH PUMPING

(in acre-feet)

Sheet 7 of 8

Calendar Year	CALIFORNIA AQUEDUCT (Continued)											
	WEST BRANCH, CALIFORNIA AQUEDUCT (Continued)											
	WILLIAM E. WARNE POWERPLANT						CASTAIC 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		
(76)	(77)	(78)	(79)	(80)	(81)	(82)	(83)	(84)	(85)	(86)	(87)	
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	0	57,364	1,788	-6,162	71,938	6,481	131,409
1973	0	0	0	0	0	0	37,198	6,430	4,542	155,297	1,075	204,542
1974	0	0	0	0	0	0	82,364	1,772	-950	209,136	541	292,863
1975	0	0	0	0	0	0	90,460	5,002	-1,534	374,280	1,563	469,771
1976	0	0	0	0	0	0	55,990	-7,695	-132,036	420,684	1,429	338,372
1977	0	0	0	0	0	0	0	-1,485	-102,532	122,447	-20	18,410
1978	0	0	0	0	0	0	45,105	-2,264	129,523	171,139	176	343,679
1979	0	0	0	0	0	0	0	-2,339	-20,400	145,598	0	122,859
1980	0	0	0	0	0	0	0	991	-118,026	165,931	481	49,377
1981	0	0	0	0	0	0	0	-44,416	47,244	283,264	2,704	288,796
1982	0	24,420	60,024	360,878	2,126	447,448	0	-60,135	59,069	360,878	1,187	360,999
1983	0	20,780	-74,308	166,995	6,111	119,578	0	-33,418	-46,904	166,995	2,618	89,291
1984	0	10,859	-220,811	216,800	4,950	11,798	0	4,804	-220,811	216,800	2,330	3,123
1985	0	12,617	272,450	308,000	4,950	598,017	0	6,385	265,118	308,000	2,330	581,833
1986	0	12,812	-40,293	521,500	5,050	499,069	0	6,585	-40,293	521,500	2,430	490,222
1987	0	13,110	22,732	542,100	5,250	583,192	0	6,883	22,732	542,100	2,630	574,345
1988	0	13,036	-5,316	555,750	5,420	568,890	0	6,809	-5,316	555,750	2,800	560,043
1989	0	13,085	4,047	556,500	5,750	579,382	0	6,858	4,047	556,500	2,800	570,205
1990	0	13,070	-12,972	537,500	5,750	543,348	0	6,843	-12,972	537,250	2,800	533,921
1991	0	13,128	21,259	542,500	5,750	582,637	0	6,901	21,259	542,000	2,800	572,960
1992	0	13,026	-38,378	547,500	5,750	527,898	0	6,799	-38,378	546,750	2,800	517,971
1993	0	12,996	23,151	552,500	5,750	594,397	0	6,769	23,151	551,500	2,800	584,220
1994	0	13,061	21,245	558,250	5,750	598,306	0	6,834	21,245	557,000	2,800	587,879
1995	0	12,774	-30,201	1,180,000	5,750	1,168,323	0	6,547	-30,201	1,178,500	2,800	1,157,646
1996	0	13,027	-7,334	1,207,350	5,750	1,218,793	0	6,800	-7,334	1,205,350	2,800	1,207,616
1997	0	13,083	-7,895	1,234,700	5,750	1,245,638	0	6,856	-7,895	1,232,200	2,800	1,233,961
1998	0	13,020	4,317	1,263,050	5,750	1,286,137	0	6,793	4,317	1,259,800	2,800	1,273,710
1999	0	13,003	-4,652	1,288,400	5,750	1,302,501	0	6,776	-4,652	1,284,400	2,800	1,289,324
2000	0	12,907	-15,681	1,314,000	5,750	1,316,976	0	6,680	-15,681	1,309,000	2,800	1,302,799
2001	0	12,889	-5,630	1,338,700	5,750	1,351,709	0	6,662	-5,630	1,333,700	2,800	1,337,532
2002	0	12,724	28,664	1,363,400	5,750	1,410,538	0	6,497	28,664	1,358,400	2,800	1,396,361
2003	0	12,913	8,653	1,388,100	5,750	1,415,416	0	6,686	8,653	1,383,100	2,800	1,401,239
2004	0	12,854	-5,714	1,412,800	5,750	1,425,690	0	6,627	-5,714	1,407,800	2,800	1,411,513
2005	0	12,853	-9,526	1,437,500	5,750	1,446,577	0	6,626	-9,526	1,432,500	2,800	1,432,400
2006	0	12,839	-11,928	1,452,100	5,750	1,458,761	0	6,612	-11,928	1,447,100	2,800	1,444,584
2007	0	12,772	12,598	1,466,700	5,750	1,497,820	0	6,545	12,598	1,461,700	2,800	1,483,643
2008	0	12,692	7,274	1,481,300	5,750	1,507,016	0	6,465	7,274	1,476,300	2,800	1,492,839
2009	0	12,708	-34,576	1,495,900	5,750	1,479,782	0	6,481	-34,576	1,490,900	2,800	1,465,605
2010	0	12,616	-9,051	1,510,500	5,750	1,519,815	0	6,389	-9,051	1,505,500	2,800	1,505,638
2011	0	12,573	-22,700	1,524,900	5,750	1,520,523	0	6,346	-22,700	1,519,900	2,800	1,506,346
2012	0	12,695	8,267	1,539,300	5,750	1,566,012	0	6,468	8,267	1,534,300	2,800	1,551,835
2013	0	12,591	-13,327	1,553,700	5,750	1,558,714	0	6,364	-13,327	1,548,700	2,800	1,544,537
2014	0	12,552	13,456	1,568,100	5,750	1,599,858	0	6,325	13,456	1,563,100	2,800	1,585,681
2015	0	12,556	6,391	1,582,500	5,750	1,607,197	0	6,329	6,391	1,577,500	2,800	1,593,020
2016	0	12,539	-6,403	1,594,700	5,750	1,606,586	0	6,312	-6,403	1,589,700	2,800	1,592,409
2017	0	12,477	-9,535	1,606,900	5,750	1,615,592	0	6,250	-9,535	1,601,900	2,800	1,601,415
2018	0	12,426	2,322	1,619,100	5,750	1,639,598	0	6,199	2,322	1,614,100	2,800	1,625,421
2019	0	12,424	-5,255	1,631,300	5,750	1,644,219	0	6,197	-5,255	1,626,300	2,800	1,630,042
2020	0	12,470	10,406	1,643,500	5,750	1,672,126	0	6,243	10,406	1,638,500	2,800	1,657,949
2021	0	12,493	-7,138	1,643,500	5,750	1,654,605	0	6,266	-7,138	1,638,500	2,800	1,640,428
2022	0	12,444	2,306	1,643,500	5,750	1,664,000	0	6,217	2,306	1,638,500	2,800	1,649,823
2023	0	12,495	5,606	1,643,500	5,750	1,667,351	0	6,268	5,606	1,638,500	2,800	1,653,174
2024	0	12,488	-4,128	1,643,500	5,750	1,657,610	0	6,261	-4,128	1,638,500	2,800	1,643,433
2025	0	12,484	2,113	1,643,500	5,750	1,663,847	0	6,257	2,113	1,638,500	2,800	1,649,670
2026	0	12,481	1,107	1,643,500	5,750	1,662,838	0	6,254	1,107	1,638,500	2,800	1,648,661
2027	0	12,481	-1,055	1,643,500	5,750	1,660,676	0	6,254	-1,055	1,638,500	2,800	1,646,499
2028	0	12,474	-361	1,643,500	5,750	1,661,363	0	6,247	-361	1,638,500	2,800	1,647,186
2029	0	12,472	573	1,643,500	5,750	1,662,295	0	6,245	573	1,638,500	2,800	1,648,118
2030	0	12,467	-3,002	1,643,500	5,750	1,658,715	0	6,240	-3,002	1,638,500	2,800	1,644,538
2031	0	12,465	1,857	1,643,500	5,750	1,663,572	0	6,238	1,857	1,638,500	2,800	1,649,395
2032	0	12,460	-3,376	1,643,500	5,750	1,658,334	0	6,233	-3,376	1,638,500	2,800	1,644,157
2033	0	12,453	404	1,643,500	5,750	1,662,107	0	6,226	404	1,638,500	2,800	1,647,930
2034	0	12,417	-2,108	1,643,500	5,750	1,659,559	0	6,190	-2,108	1,638,500	2,800	1,645,382
2035	0	12,463	5,454	1,643,500	5,750	1,667,167	0	6,236	5,454	1,638,500	2,800	1,652,990

AND POWER RECOVERY PLANT OF PROJECT TRANSPORTATION FACILITIES ^(a)

(in acre-feet)

Sheet 8 of 8

CALIFORNIA AQUEDUCT (Continued)							
Calendar Year	COASTAL BRANCH, CALIFORNIA AQUEDUCT						
	LAS PERILLAS AND BADGER HILL PUMPING PLANTS				DEVI'L'S DEN, SAWTOOTH AND POLONIO PUMPING PLANTS AND SAN LUIS OBISPO POWERPLANT		
	Initial Fill Water	Opera- tional Losses	Water Supply Delivery	Total	Opera- tional Losses	Water Supply Delivery	Total
(88)	(89)	(90)	(91)	(92)	(93)	(94)	
1962	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0
1968	210	873	79,039	80,122	0	0	0
1969	0	1,042	62,064	63,106	0	0	0
1970	0	638	83,649	84,287	0	0	0
1971	0	3,455	110,971	114,426	0	0	0
1972	0	1,745	121,755	123,500	0	0	0
1973	0	5,479	78,645	84,124	0	0	0
1974	0	7,344	78,174	85,518	0	0	0
1975	0	5,819	85,216	91,035	0	0	0
1976	0	6,562	90,058	96,620	0	0	0
1977	0	5,777	40,579	46,356	0	0	0
1978	0	9,085	92,604	101,689	0	0	0
1979	0	10,896	123,155	134,051	0	0	0
1980	0	9,449	111,379	120,828	0	0	0
1981	0	13,232	109,754	122,986	0	0	0
1982	0	7,984	95,776	103,760	0	0	0
1983	0	5,710	100,518	106,228	0	0	0
1984	0	590	102,338	102,928	0	0	0
1985	0	590	153,900	154,490	0	0	0
1986	0	590	156,700	157,290	0	0	0
1987	0	590	158,800	159,390	0	0	0
1988	0	590	160,400	160,990	0	0	0
1989	0	590	144,700	145,290	0	0	0
1990	0	590	144,700	145,290	0	0	0
1991	0	1,140	215,186	216,326	550	70,486	71,036
1992	0	1,140	215,186	216,326	550	70,486	71,036
1993	0	1,140	215,186	216,326	550	70,486	71,036
1994	0	1,140	215,186	216,326	550	70,486	71,036
1995	0	1,140	215,186	216,326	550	70,486	71,036
1996	0	1,140	215,186	216,326	550	70,486	71,036
1997	0	1,140	215,186	216,326	550	70,486	71,036
1998	0	1,140	215,186	216,326	550	70,486	71,036
1999	0	1,140	215,186	216,326	550	70,486	71,036
2000	0	1,140	215,186	216,326	550	70,486	71,036
2001	0	1,140	215,186	216,326	550	70,486	71,036
2002	0	1,140	215,186	216,326	550	70,486	71,036
2003	0	1,140	215,186	216,326	550	70,486	71,036
2004	0	1,140	215,186	216,326	550	70,486	71,036
2005	0	1,140	215,186	216,326	550	70,486	71,036
2006	0	1,140	215,186	216,326	550	70,486	71,036
2007	0	1,140	215,186	216,326	550	70,486	71,036
2008	0	1,140	215,186	216,326	550	70,486	71,036
2009	0	1,140	215,186	216,326	550	70,486	71,036
2010	0	1,140	215,186	216,326	550	70,486	71,036
2011	0	1,140	215,186	216,326	550	70,486	71,036
2012	0	1,140	215,186	216,326	550	70,486	71,036
2013	0	1,140	215,186	216,326	550	70,486	71,036
2014	0	1,140	215,186	216,326	550	70,486	71,036
2015	0	1,140	215,186	216,326	550	70,486	71,036
2016	0	1,140	215,186	216,326	550	70,486	71,036
2017	0	1,140	215,186	216,326	550	70,486	71,036
2018	0	1,140	215,186	216,326	550	70,486	71,036
2019	0	1,140	215,186	216,326	550	70,486	71,036
2020	0	1,140	215,186	216,326	550	70,486	71,036
2021	0	1,140	215,186	216,326	550	70,486	71,036
2022	0	1,140	215,186	216,326	550	70,486	71,036
2023	0	1,140	215,186	216,326	550	70,486	71,036
2024	0	1,140	215,186	216,326	550	70,486	71,036
2025	0	1,140	215,186	216,326	550	70,486	71,036
2026	0	1,140	215,186	216,326	550	70,486	71,036
2027	0	1,140	215,186	216,326	550	70,486	71,036
2028	0	1,140	215,186	216,326	550	70,486	71,036
2029	0	1,140	215,186	216,326	550	70,486	71,036
2030	0	1,140	215,186	216,326	550	70,486	71,036
2031	0	1,140	215,186	216,326	550	70,486	71,036
2032	0	1,140	215,186	216,326	550	70,486	71,036
2033	0	1,140	215,186	216,326	550	70,486	71,036
2034	0	1,140	215,186	216,326	550	70,486	71,036
2035	0	1,140	215,186	216,326	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							Capital Cost Allocated to Other Purposes	Total State Water Project Capital Cost
	Misc. Income Credited to Construction (a)	Allowance for Future Price Escalation (b)	Costs of Construction of Water Structures (c)	Additional Costs of Requested Excess Capacity and Future Enlargement (d)	Capital Cost Component of Delta Water Charge (e)	Capital Cost Component of Transportation Water Charge (f)	Water Supply and Power Total (g)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CONSERVATION FACILITIES:									
Upper Feather Division									
Frenchman Dam and Lake	179	0	0	0	587	0	766	2,825	3,592
Grizzly Valley Dam and Lake Davis	65	0	0	0	25	0	90	6,001	6,091
Antelope Dam and Lake	1	0	0	0	0	0	1	5,226	5,227
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	245	0	0	0	612	0	857	14,806	15,663
Oroville Division									
Multipurpose Facilities	3,289	549	149	0	206,349	0	210,336	40,092	250,428
Specific Power Facilities	0	0	0	0	255,037	0	255,037	48,613	303,650
TOTAL, Oroville Division	3,289	549	149	0	461,386	0	465,373	88,705	554,078
California Aqueduct									
North San Joaquin Division	221	1,643	0	0	64,255	0	66,119	2,578	68,697
San Luis Division	435	57	0	0	95,147	0	95,639	4,162	99,801
TOTAL, California Aqueduct	656	1,700	0	0	159,402	0	161,758	6,740	168,498
Delta Facilities	3,098	3,694	0	0	104,466	0	111,258	16,720	127,978
Planning and Preoperations	0	39,175	0	0	60,249	0	99,424	0	99,424
TOTAL CONSERVATION FACILITIES	7,288	45,118	149	0	786,115	0	838,670	126,971	965,641
TRANSPORTATION FACILITIES									
Upper Feather Division									
Grizzly Valley Pipeline	0	0	0	0	0	341	341	0	341
North Bay Aqueduct	21	4,357	68	0	0	75,605	80,051	0	80,051
South Bay Aqueduct	1,782	17	382	0	0	49,426	51,607	21,064	72,671
California Aqueduct									
North San Joaquin Division	416	3,656	18	0	0	143,216	147,306	5,599	152,905
San Luis Division	84	19,211	0	0	0	159,683	178,978	10,949	189,927
South San Joaquin Division	315	19	3,319	2,093	0	260,282	266,028	9,970	275,998
Tehachapi Division	25	129	4	5,230	0	290,684	296,072	17,513	313,585
Mojave Division	896	349	431	0	0	271,678	273,354	17,412	290,766
Santa Ana Division	857	8	2,812	5,331	0	163,240	172,248	20,278	192,526
West Branch	37,549	1,090	2,728	37	0	440,565	481,969	30,228	512,197
Coastal Branch	10	0	97	0	0	16,791	16,898	119	17,017
TOTAL California Aqueduct	40,152	24,462	9,409	12,691	0	1,746,139	1,832,853	112,068	1,944,921
TOTAL, TRANSPORTATION FACILITIES	41,955	28,836	9,859	12,691	0	1,871,511	1,964,852	133,132	2,097,984
SAN JOAQUIN DRAINAGE FACILITIES									
	0	0	0	0	0	0	0	24,445	24,445
OFF-AQUEDUCT POWER GENERATING FACILITIES									
	16	105	0	0	0	419,877	419,998	0	419,998
UNASSIGNED AND DAVIS-GRUNSKY									
	0	0	0	0	0	0	0	162,711	162,711
SUBTOTAL	49,259	74,049	10,008	12,691	786,115	2,291,388	3,223,520	447,259	3,670,779
1996-2035 COSTS AND SAN LUIS CANAL ENLARGEMENT									
	0	-49,349	0	0	0	-89,801	-139,150	-6,683	-145,833
TOTAL	49,259	24,710	10,008	12,691	786,115	2,201,587	3,084,370	440,576	3,524,946 ^(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, 1983.
- 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 - 1983	1984	1985	1986	1987	1988	Total
FEATHER RIVER AREA							
County of Butte	104,924	0	0	0	0	0	104,924
Thermalito Irrigation District ^(b)	<u>43,939</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>43,939</u>
Total	148,863	0	0	0	0	0	148,863
NORTH BAY AREA							
Napa County Flood Control and Water Conservation District	10,068	0	0	0	0	0	10,068
Solano County Flood Control and Water Conservation District	<u>0</u>	<u>3,000</u>	<u>2,000</u>	<u>53,000</u>	<u>0</u>	<u>0</u>	<u>58,000</u>
Total	10,068	3,000	2,000	53,000	0	0	68,068
SOUTH BAY AREA							
Alameda County Flood Control and Water Conservation District, Zone 7	224,341	0	0	0	0	0	224,341
Alameda County Water District	143,789	0	0	0	0	0	143,789
Santa Clara Valley Water District	<u>13,865</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>13,865</u>
Total	381,995	0	0	0	0	0	381,995
SAN JOAQUIN VALLEY AREA							
Devil's Den Water District	77,557	4,000	0	0	0	0	91,557
Dudley Ridge Water District	285,085	0	0	0	0	4,000	289,085
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	2,706,791	6,000	0	0	0	39,000	2,751,791
Oak Flat Water District	13,333	0	0	0	0	0	13,333
Tracy Golf and Country Club ^(c)	1,028	0	0	0	0	4,000	5,028
Tulare Lake Basin Water Storage District	<u>277,483</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>4,000</u>	<u>281,483</u>
Total	3,372,927	10,000	0	0	0	51,000	3,433,927
SOUTHERN CALIFORNIA AREA							
Antelope Valley-East Kern Water Agency	329,129	0	0	0	0	0	329,129
Castaic Lake Water Agency	346,979	0	0	0	0	0	346,979
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	65,378	0	0	0	0	0	65,378
Palmdale Water District	24,232	0	0	0	0	0	24,232
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 Geronimo Pass Water Agency	66,530	0	0	0	0	0	66,530
The Metropolitan Water District of Southern California	4,261,524	0	0	0	0	0	4,261,524
Ventura County Flood Control District	<u>79,699</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>79,699</u>
Total	5,975,549	0	0	0	0	0	5,975,549
TOTAL ALL AREAS	9,889,402	13,000	2,000	53,000	0	51,000	10,008,402

- 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)		Net Over or Underpayment With Interest ^(c)
				Jan-Jun	Jul-Dec	
	(1)	(2)	(3)	(4)	(5)	(6)
<u>THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA</u>						
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
<u>SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT</u>						
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
<u>ANTELOPE VALLEY-EAST KERN WATER AGENCY</u>						
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													Reach Totals
		Incremental Costs and Advance Payments by Calendar Year													
		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)
<u>THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA</u>															
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	1. <u>8C thru 25</u> Advance Payments Applied to Incremental Costs Amendment 2 (d)	0	8,056,000	9,094,963	1,523,252	8,310,651	3,426,736	1,086,045	-4,244,807	-14,381,396				-356,668	12,514,776
	2. <u>8C thru 25</u> Interest Credits-Amendment 2 (e)									-1,532,433			-10,104,646 ^(h)		-11,637,079
	3. <u>28J</u> Advance Payments Applied to Incremental Costs Amendment 5 (f)	0	1,240,000	1,483,180	2,469,325	-927,035	1,729,160	3,215,258	2,967,475	1,690,000	-9,488,722				4,378,641
	4. <u>28J</u> 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
<u>SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT</u>															
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	1. <u>25</u> 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
<u>ANTELOPE VALLEY-EAST KERN WATER AGENCY</u>															
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	1. <u>29A and 29F</u> Advance Payments Applied to Incremental Costs (d)				85,495	52,625	101,648	34,062	-12,794	-189,120	0	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	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)

Sheet 1 of 8

Calendar Year	UPPER FEATHER DIVISION	NORTH BAY AQUEDUCT				SOUTH BAY AQUEDUCT			
		Reach 1	Reach 2	Reach 3	Total	Reach 1	Reach 2	Reach 4	Reach 5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1952	0	0	0	0	0	97	34	30	57
1953	0	0	0	0	0	477	166	144	297
1954	0	0	0	0	0	1,466	508	437	959
1955	0	0	0	0	0	1,944	674	560	1,266
1956	0	0	0	0	0	18,789	6,515	5,090	12,545
1957	0	13,290	3,391	9,953	26,634	45,090	15,639	12,285	33,218
1958	2	19,202	5,011	25,798	50,011	195,985	80,961	7,714	21,930
1959	14	7,517	2,118	17,653	27,288	496,140	148,516	24,945	17,118
1960	28	8,797	4,292	4,838	17,927	1,130,378	67,351	71,779	68,028
1961	10	1,551	10,318	2,526	14,395	3,273,247	180,596	307,885	74,398
1962	32	217	-1,751	414	-1,120	1,548,884	203,535	695,446	35,102
1963	51	2,510	-1,063	983	2,430	480,716	69,182	2,284,291	206,587
1964	7,791	39,879	12,046	21,934	73,859	2,549,118	15,903	181,900	264,410
1965	3,139	72,793	17,900	170,361	261,054	807,505	153,454	85,425	447,830
1966	-48	59,615	12,972	438,949	511,536	898,074	149,529	142,096	1,690,200
1967	47	47,257	11,597	1,551,023	1,609,877	607,614	50,423	293,304	3,496,284
1968	51,573	70,586	19,560	831,158	921,304	965,119	19,543	89,300	2,931,101
1969	234,232	63,650	23,628	46,428	133,706	455,173	9,618	3,860	896,727
1970	16,227	59,090	42,733	9,415	111,238	52,481	3,380	10,517	154,358
1971	27,204	20,819	31,516	8,480	60,815	24,505	4,645	5,035	20,395
1972	9	15,538	12,952	10,058	38,548	26,918	825	2,945	26,090
1973	25	18,488	29,018	39,878	87,384	24,468	4,010	6,016	12,708
1974	45	67,352	29,978	134,332	231,662	17,108	1,192	1,765	65,587
1975	21	62,855	73,112	45,091	181,058	57,619	561	1,165	7,291
1976	51	51,986	75,611	13,181	140,778	104,248	2,846	8,915	12,700
1977	28	48,893	65,662	23,255	137,810	176,181	3,625	3,225	16,132
1978	38	56,618	57,158	27,003	140,779	237,250	4,494	3,668	12,903
1979	23	311,937	91,367	65,804	469,108	115,031	17,151	8,515	30,805
1980	26	388,233	105,508	123,163	616,904	399,123	17,708	8,249	31,079
1981	34	377,899	127,650	24,788	530,337	-162,594	3,589	6,520	17,352
1982	11	834,001	319,133	124,107	1,277,241	-36,962	17,093	4,424	40,023
1983	19	1,013,403	1,016,283	503,829	2,533,515	405,376	77,984	23,467	58,498
1984	0	2,189,439	5,433,669	1,439,117	9,062,225	229,686	53,000	2,000	67,537
1985	0	11,229,894	11,095,484	2,816,000	25,141,378	94,000	25,000	17,000	15,120
1986	0	22,119,113	5,042,827	1,094,000	28,255,940	3,000	6,000	1,000	2,016
1987	0	1,499,000	230,000	552,000	2,281,000	0	2,000	0	504
1988	0	560,000	62,000	0	622,000	0	0	0	0
1989	0	17,000	4,000	0	21,000	0	0	0	0
1990	0	11,000	4,000	0	15,000	0	0	0	0
1991	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	340,632	41,359,422	24,069,680	10,175,519	75,604,621	15,243,254	1,417,250	4,320,917	10,789,155

THRU CAPITAL COST COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Sheet 2 of 8

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	167,487	641,807	45,533	65,943	753,283
1977	270	1,310	8,651	24,938	234,332	272,226	20,283	22,568	315,077
1978	231	1,204	1,631	17,123	278,504	442,322	36,221	9,714	488,257
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	-126,897	-61,101	1,487,444	202,275	1,628,618
1982	669	1,285	1,351	3,699	31,582	1,452,557	38,331	28,479	1,519,367
1983	412	2,560	3,639	19,069	591,005	843,266	68,879	258,862	1,171,007
1984	0	1,000	1,000	2,000	356,223	1,386,671	5,999	255,285	1,647,955
1985	0	3,000	2,000	13,000	169,120	1,275,091	73,986	50,658	1,399,735
1986	0	0	0	1,000	13,016	1,817,655	3,333	1,333	1,822,321
1987	0	0	0	0	2,504	4,867,075	1,333	667	4,869,075
1988	0	0	0	0	0	9,057,612	667	667	9,058,946
1989	0	0	0	0	0	8,023,809	0	0	8,023,809
1990	0	0	0	0	0	2,995,431	0	0	2,995,431
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	518,701		4,804,350		49,425,963		40,588,620		143,215,846
		3,808,733		8,523,603		82,472,566		20,154,660	

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

(in dollars)

Sheet 3 of 8

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	79,382	13,041	5,138	41,687	156,733	19,931	76,280	62,164
1977	35,707	77,853	9,412	4,028	9,655	136,655	21,096	70,005	97,952
1978	8,539	78,585	7,006	3,536	6,994	104,660	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	-4,576	-969,877	-40,312	-14,168	850,288	-178,645	1,145	9,667	9,527
1982	12,714	-532,324	14,977	7,555	3,490,806	2,993,728	1,677	4,911	4,205
1983	17,242	105,991	20,063	10,714	1,809,527	1,963,537	7,170	7,504	8,755
1984	2,821	329,035	1,190,066	529,966	661,986	2,713,874	24,518	1,886	1,886
1985	3,526	127,305	290,444	130,134	164,082	715,491	5,658	2,829	2,829
1986	1,410	67,896	97,129	35,834	49,979	252,248	943	1,886	1,886
1987	1,410	244,237	381,915	137,678	185,771	951,011	943	943	943
1988	705	2,279,231	3,576,799	1,278,708	1,732,291	8,867,734	943	943	943
1989	0	4,602,783	7,227,152	2,582,877	3,498,530	17,911,342	0	0	0
1990	0	4,847,020	7,609,067	2,719,612	3,684,301	18,860,000	0	0	0
1991	0	3,490,043	5,478,830	1,957,668	2,652,659	13,579,200	0	0	0
1992	0	920,368	1,446,562	516,764	699,706	3,583,400	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	14,622,502	43,095,496	48,858,142	15,384,331	37,722,579	159,683,050	737,585	12,436,982	8,287,717

THRU CAPITAL COST COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Sheet 4 of 8

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	10,793	25,827	269,197	25,164	21,048	370,265
1976	76,202	54,217	37,464	59,842	105,332	507,538	59,753	42,776	434,581
1977	75,628	52,919	22,826	54,444	81,293	302,128	49,972	30,152	235,702
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	-1,162,211	28,974	34,604	-1,152,575
1982	4,995	4,407	4,829	5,064	13,720	-652,058	6,428	28,231	-657,358
1983	10,200	8,695	12,827	11,055	32,200	597,108	14,513	18,526	94,799
1984	2,829	1,886	1,886	1,886	1,886	2,491,023	1,886	1,886	2,824,748
1985	2,829	1,886	1,886	2,829	2,829	7,544	2,829	1,886	7,544
1986	1,886	1,886	1,886	1,886	1,886	4,715	1,886	1,886	4,715
1987	943	943	943	943	943	1,886	943	943	1,886
1988	943	943	943	943	943	943	943	943	943
1989	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	9,087,649	12,091,802	10,795,351	7,381,496	15,584,016	59,864,137	8,280,045	6,880,670	41,297,362

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

(in dollars)

Sheet 5 of 8

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	618,075	2,154,155	1,124,510	174,629	1,299,139	121,043	84,593	6,786	59,967
1977	581,091	1,675,208	660,750	31,512	692,262	261,400	133,767	7,521	117,878
1978	252,222	802,138	752,973	27,956	780,929	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	1,073,430	3,604	308,188
1981	-2,633,059	-4,762,693	-4,692,091	6,903	-4,685,188	1,353,813	845,669	4,498	48,603
1982	-1,565,580	-2,796,529	12,149,500	5,310	12,154,810	8,465,751	741,218	3,917	30,509
1983	154,361	977,713	8,912,727	6,033	8,918,760	13,048,907	61,101	2,710	33,535
1984	6,027,571	11,385,777	7,252,919	2,829	7,255,748	10,191,001	28,290	0	2,829
1985	107,502	150,880	784,576	1,886	786,462	5,110,117	15,088	0	3,772
1986	5,658	33,005	8,487	1,886	10,373	698,763	2,829	0	1,886
1987	1,886	15,088	1,886	943	2,829	943	943	0	943
1988	943	12,259	943	943	1,886	943	943	0	943
1989	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	67,557,404	260,282,216	236,434,568	54,250,145	290,684,713	48,366,464	20,011,246	221,668	15,174,955

THRU CAPITAL COST COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Sheet 6 of 8

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	MOJAVE DIVISION (continued)							SANTA ANA DIVISION	
	Reach 20B	Reach 21	Reach 22A	Reach 22B ^(a)	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	3,103,931	84,188	204,705	3,837,750	475,176	1,494,752
1977	120,160	71,389	49,445	1,654,593	60,112	232,230	2,708,495	76,255	776,086
1978	68,838	32,855	18,183	565,338	36,484	216,198	1,605,547	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	6,307,626	31,462	181,638
1981	32,194	13,211	6,458	-841,886	523,906	203,929	2,190,395	5,861	68,934
1982	74,061	10,922	12,987	338,831	1,926,197	72,994	11,677,387	8,880	139,826
1983	53,879	22,251	8,163	406,118	4,925,565	41,828	18,604,057	4,287	488,396
1984	139,564	2,829	1,886	2,096,104	2,841,259	199,916	15,503,678	1,886	3,772
1985	27,347	2,829	127,305	781,747	939,228	93,357	7,100,790	1,886	5,658
1986	1,886	943	126,362	7,544	37,720	17,917	895,850	943	3,772
1987	943	943	943	1,886	943	5,658	14,145	943	943
1988	943	943	943	943	943	943	8,487	943	943
1989	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	19,894,204	9,823,997	6,805,841	86,333,057	15,492,185	49,555,078	271,678,695	24,746,797	38,417,432

a) Includes the following costs allocated to MWDSC and repaid under Article 24(c) of its contract: 1984, \$995,000; 1985, \$445,000.

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

(in dollars)

Sheet 7 of 8

Calendar Year	CALIFORNIA AQUEDUCT (continued)									
	SANTA ANA DIVISION (continued)				WEST BRANCH					
	Reach 28G ^(b)	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	3,764,428	396,829	650,417	1,274,484	706,244	650,209	
1977	127,106	89,036	323,091	1,391,574	420,683	3,018,637	2,152,961	196,012	1,135,148	
1978	147,112	153,867	367,163	856,681	1,337,521	2,219,135	6,694,615	57,817	149,932	
1979	29,723	19,225	225,956	385,346	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	-830,844	2,699,888	19,806,537	94,897	28,877	
1982	13,686	57,359	37,835	257,586	-456,670	348,271	17,104,465	188,599	40,135	
1983	14,286	88,117	-250,354	344,732	87,308	180,616	7,166,931	243,243	19,155	
1984	183,885	3,772	45,264	238,579	254,165	102,787	4,609,384	238,579	2,829	
1985	2,829	1,886	16,974	29,233	76,383	28,290	1,022,212	14,145	1,886	
1986	1,886	1,886	4,715	13,202	3,772	13,202	3,060,035	8,487	1,886	
1987	943	943	943	4,715	943	943	2,855,404	943	943	
1988	943	943	943	4,715	943	943	10,373	943	943	
1989	0	0	0	0	0	0	0	0	0	
1990	0	0	0	0	0	0	0	0	0	
1991	0	0	0	0	0	0	0	0	0	
1992	0	0	0	0	0	0	0	0	0	
1993	0	0	0	0	0	0	0	0	0	
1994	0	0	0	0	0	0	0	0	0	
1995	0	0	0	0	0	0	0	0	0	
1996	0	0	0	0	0	0	0	0	0	
1997	0	0	0	0	0	0	0	0	0	
1998	0	0	0	0	0	0	0	0	0	
1999	0	0	0	0	0	0	0	0	0	
2000	0	0	0	0	0	0	0	0	0	
TOTAL	23,772,612	23,300,675	53,002,705	163,240,221	32,888,159	28,595,001	120,730,461	50,965,440	74,352,895	

b) Includes excess capacity costs 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)

Sheet 8 of 8

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	4,931,250	198,266	68,907	5,088	14,988	287,249	17,183,987	17,492,303
1977	345,023	7,268,464	918,515	81,593	1,834	5,387	1,007,329	15,195,064	15,567,234
1978	665,616	11,124,636	37,342	81,164	1,302	3,852	123,660	15,886,508	1,665,829
1979	282,145	24,159,833	39,511	117,224	1,505	4,433	162,673	31,299,791	31,952,968
1980	2,055,206	32,997,257	199,363	399,019	1,029	3,038	602,449	74,079,116	75,164,528
1981	275,520	22,074,875	14,817	-253,058	1,254	3,703	-233,284	16,221,647	16,625,121
1982	338,050	17,562,850	-13,747	-157,176	441	1,303	-169,179	45,200,020	44,508,854
1983	534,060	8,231,313	50,414	12,478	643	1,898	65,433	40,276,552	43,401,091
1984	120,704	5,328,448	5,374	63,011	0	0	68,385	44,142,444	53,560,892
1985	48,093	1,191,009	5,000	59,578	0	0	64,578	11,438,178	36,748,676
1986	14,145	3,101,527	4,000	62,500	0	0	66,500	6,195,026	34,463,982
1987	969,404	3,828,580	1,000	63,738	0	0	64,738	9,750,181	12,033,685
1988	5,658	19,803	1,000	63,739	0	0	64,739	18,038,569	18,660,569
1989	0	0	0	63,740	0	0	63,740	25,998,891	26,019,891
1990	0	0	0	63,741	0	0	63,741	21,919,172	21,934,172
1991	0	0	0	0	0	0	0	13,579,200	13,579,200
1992	0	0	0	0	0	0	0	3,583,400	3,583,400
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	133,032,564	440,564,520	15,333,762	1,289,560	47,560	119,686	16,790,568	1,746,139,829	1,871,511,045

TABLE B-11: MINIMUM OMP&R COSTS OF EACH AQUEDUCT REACH TO BE

(in dollars)

Sheet 1 of 8

Calendar Year	UPPER FEATHER DIVISION	NORTH BAY AQUEDUCT				SOUTH BAY AQUEDUCT			
		Reach 1	Reach 2	Reach 3	Total	Reach 1	Reach 2	Reach 4	Reach 5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1952	0	0	0	0	0	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	37,396	5,522	0	0
1963	0	0	0	0	0	147,719	20,639	0	0
1964	0	0	0	0	0	149,750	15,574	19,405	0
1965	0	0	0	0	0	259,939	45,718	46,485	0
1966	0	0	0	0	0	270,890	23,799	63,921	0
1967	0	0	0	0	0	438,050	32,798	108,127	0
1968	0	0	0	130	130	410,919	44,277	66,973	706
1969	0	0	0	80,875	80,875	487,377	48,339	75,644	706
1970	0	0	0	94,872	94,872	381,734	44,852	64,833	71,376
1971	54	0	0	45,579	45,579	357,850	25,666	50,344	38,735
1972	40	0	0	37,895	37,895	347,941	30,606	56,800	100,106
1973	1	0	0	32,993	32,993	386,897	36,172	58,288	28,810
1974	143	0	0	46,498	46,498	456,381	57,081	83,120	61,623
1975	1,069	0	0	37,707	37,707	624,989	46,111	81,361	36,682
1976	139	0	0	60,926	60,926	614,365	47,862	123,838	91,096
1977	892	0	0	79,893	79,893	511,097	48,926	104,280	102,085
1978	39	0	0	59,524	59,524	690,512	125,227	176,866	50,818
1979	3,235	0	0	74,927	74,927	650,974	76,849	212,826	91,375
1980	416	0	0	82,850	82,850	1,129,082	212,977	242,123	110,791
1981	3,847	0	0	102,243	102,243	883,446	130,121	167,105	204,198
1982	11,046	0	0	194,899	194,899	1,160,630	141,721	249,543	127,149
1983	2,379	0	0	116,863	116,863	1,249,431	94,861	319,486	98,594
1984	3,173	0	0	184,582	184,582	1,952,043	189,328	289,107	160,133
1985	2,570	0	0	213,438	213,438	2,537,805	188,035	304,370	252,629
1986	2,573	0	0	226,874	226,874	2,484,701	202,414	327,865	268,704
1987	2,605	142,731	90,470	240,576	473,577	2,168,512	209,566	338,948	277,217
1988	2,596	123,633	81,939	232,916	438,488	2,166,368	209,538	339,137	277,551
1989	2,592	116,474	78,616	233,080	428,170	2,167,842	209,697	339,390	277,641
1990	2,597	116,653	78,859	233,383	428,895	2,171,154	210,062	340,107	279,453
1991	2,610	116,301	79,000	233,760	429,061	2,174,335	210,559	340,916	279,915
1992	2,624	116,638	79,262	234,090	429,990	2,177,388	210,890	341,456	280,126
1993	2,631	116,705	79,297	234,130	430,132	2,177,744	210,888	341,407	279,703
1994	2,631	116,745	79,306	234,134	430,185	2,177,833	210,897	341,435	279,580
1995	2,631	116,861	79,329	234,146	430,336	2,178,099	210,926	341,513	279,825
1996	2,631	116,899	79,337	234,149	430,385	2,178,181	210,934	341,537	279,777
1997	2,631	116,977	79,349	234,158	430,484	2,178,391	210,956	341,599	279,918
1998	2,631	116,967	79,350	234,156	430,473	2,178,344	210,950	341,581	279,828
1999	2,631	117,098	79,367	234,174	430,639	2,178,749	210,987	341,685	280,363
2000	2,631	117,107	79,370	234,174	430,651	2,178,746	210,986	341,685	280,360
2001	2,635	117,580	79,656	234,532	431,768	2,182,283	211,369	342,355	281,465
2002	2,635	117,732	79,674	234,554	431,960	2,182,781	211,419	342,496	282,182
2003	2,635	117,755	79,677	234,557	431,989	2,269,249	218,460	358,038	289,072
2004	2,635	129,117	81,008	237,642	447,767	2,274,095	218,857	358,929	289,766
2005	2,635	129,155	81,014	237,647	447,816	2,274,196	218,868	358,958	289,910
2006	2,635	129,241	81,027	237,657	447,925	2,274,434	218,891	359,025	290,252
2007	2,635	129,322	81,037	237,669	448,028	2,274,700	218,918	359,100	290,632
2008	2,635	129,506	81,058	237,695	448,259	2,275,290	218,977	359,266	291,474
2009	2,635	129,402	81,048	237,679	448,129	2,274,936	218,942	359,167	290,968
2010	2,635	129,565	81,067	237,702	448,334	2,275,461	218,995	359,314	291,720
2011	2,631	129,206	80,739	237,277	447,222	2,271,656	218,579	358,658	291,300
2012	2,631	129,403	80,762	237,305	447,470	2,272,287	218,642	358,835	292,201
2013	2,631	129,315	80,756	237,290	447,361	2,271,953	218,609	358,742	291,725
2014	2,631	129,550	80,787	237,322	447,659	2,272,675	218,682	358,945	292,759
2015	2,631	129,898	80,832	237,369	448,099	2,273,756	218,790	359,249	294,304
2016	2,631	130,052	80,853	237,389	448,294	2,274,217	218,836	359,379	294,964
2017	2,631	130,204	80,874	237,409	448,487	2,274,675	218,883	359,508	295,618
2018	2,631	130,328	80,891	237,425	448,644	2,275,038	218,919	359,608	296,126
2019	2,631	130,354	80,895	237,429	448,678	2,275,121	218,925	359,628	296,229
2020	2,631	130,365	80,902	237,428	448,695	2,275,089	218,921	359,615	296,167
2021	2,631	130,385	80,904	237,430	448,719	2,141,491	208,037	335,594	285,628
2022	2,631	113,263	78,899	232,963	425,125	2,141,347	208,022	335,554	285,422
2023	2,631	113,285	78,901	232,966	425,152	2,141,414	208,029	335,573	285,518
2024	2,631	111,749	78,721	232,382	422,852	2,134,307	207,447	334,276	284,713
2025	2,631	111,787	78,726	232,387	422,900	2,134,427	207,459	334,311	284,885
2026	2,631	111,771	78,724	232,385	422,880	2,134,376	207,453	334,294	284,806
2027	2,631	111,807	78,728	232,390	422,925	2,134,489	207,464	334,326	284,963
2028	2,631	111,753	78,722	232,383	422,858	2,134,316	207,446	334,272	284,695
2029	2,631	111,788	78,726	232,387	422,901	2,134,425	207,455	334,299	284,828
2030	2,631	111,788	78,726	232,387	422,901	2,134,424	207,453	334,294	284,803
2031	2,631	111,832	78,732	232,394	422,958	2,134,567	207,466	334,330	284,987
2032	2,631	111,759	78,723	232,384	422,866	2,134,333	207,442	334,259	284,632
2033	2,631	111,842	78,733	232,395	422,970	2,134,594	207,468	334,333	285,004
2034	2,631	111,662	78,711	232,370	422,743	2,134,025	207,410	334,173	284,192
2035	2,631	111,964	78,748	232,412	423,124	2,134,981	207,506	334,441	285,556

REIMBURSED THRU MINIMUM OMP&R COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Sheet 2 of 8

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	963,432	1,519,828	217,348	453,400	2,190,576
1977	-240	2,228	8,391	89,579	866,346	1,918,273	292,380	196,564	2,407,217
1978	-1,404	16,766	-5,313	104,078	1,157,550	2,015,262	304,715	187,556	2,507,533
1979	1,269	29,294	7,351	106,835	1,176,773	1,846,727	223,999	142,764	2,213,490
1980	3,621	24,270	17,405	110,851	1,851,120	2,364,178	464,679	244,923	3,073,780
1981	4,038	20,109	17,586	98,143	1,524,746	2,657,689	426,770	151,369	3,235,828
1982	2,235	22,860	21,907	202,481	1,928,526	3,181,531	587,600	240,517	4,009,648
1983	4,238	39,995	60,200	196,502	2,063,307	4,117,928	673,861	236,880	5,028,669
1984	10,564	26,311	33,150	242,086	2,902,722	5,453,651	809,349	331,702	6,594,702
1985	17,764	29,414	32,012	134,049	3,496,078	6,880,934	973,758	444,644	8,299,336
1986	18,929	31,659	35,324	146,355	3,515,951	7,097,308	1,034,035	464,489	8,595,832
1987	19,019	32,875	35,496	151,262	3,232,895	5,906,978	1,066,280	480,149	7,453,407
1988	19,023	32,884	35,505	151,301	3,231,307	5,887,037	1,066,510	480,226	7,433,773
1989	19,038	32,908	35,532	151,416	3,233,464	5,886,288	1,067,069	480,543	7,433,900
1990	19,061	32,949	35,574	151,603	3,239,963	5,859,511	1,072,195	482,312	7,414,018
1991	19,103	33,023	35,655	151,949	3,245,455	5,835,230	1,075,077	483,566	7,393,873
1992	19,132	33,073	35,707	152,181	3,249,953	5,842,247	1,076,885	484,369	7,403,501
1993	19,135	33,078	35,714	152,206	3,249,875	5,843,331	1,077,228	484,501	7,405,060
1994	19,135	33,078	35,714	152,206	3,249,878	5,843,795	1,077,513	484,588	7,405,896
1995	19,135	33,078	35,714	152,206	3,250,496	5,845,188	1,078,369	484,850	7,408,407
1996	19,135	33,078	35,714	152,206	3,250,562	5,845,614	1,078,584	484,915	7,409,113
1997	19,135	33,078	35,714	152,206	3,250,997	5,846,717	1,079,237	485,115	7,411,069
1998	19,135	33,078	35,714	152,206	3,250,836	5,846,469	1,078,907	485,014	7,410,390
1999	19,135	33,078	35,714	152,206	3,251,917	5,848,587	1,079,709	485,259	7,413,555
2000	19,135	33,078	35,714	152,206	3,251,910	5,848,571	1,079,714	485,261	7,413,546
2001	19,165	33,129	35,768	152,446	3,257,980	5,857,812	1,082,742	486,447	7,427,001
2002	19,165	33,129	35,768	152,446	3,259,386	5,969,184	1,084,200	486,891	7,540,275
2003	20,931	35,043	38,558	159,462	3,388,813	5,969,530	1,083,803	486,770	7,540,103
2004	21,025	35,145	38,706	159,835	3,396,358	6,083,496	1,110,407	500,708	7,694,611
2005	21,025	35,145	38,706	159,835	3,396,643	6,084,025	1,110,696	500,796	7,695,517
2006	21,025	35,145	38,706	159,835	3,397,313	6,085,274	1,111,370	501,002	7,697,646
2007	21,025	35,145	38,706	159,835	3,398,061	6,086,671	1,112,124	501,233	7,700,028
2008	21,025	35,145	38,706	159,835	3,399,718	6,089,762	1,113,798	501,744	7,705,304
2009	21,025	35,145	38,706	159,835	3,398,724	6,087,905	1,112,792	501,436	7,702,133
2010	21,025	35,145	38,706	159,835	3,400,201	6,090,660	1,114,282	501,891	7,706,833
2011	20,987	35,080	38,637	159,530	3,394,427	6,082,510	1,112,429	500,999	7,695,938
2012	20,987	35,080	38,637	159,530	3,396,199	6,085,813	1,114,211	501,544	7,701,568
2013	20,987	35,080	38,637	159,530	3,395,263	6,084,066	1,113,277	501,258	7,698,601
2014	20,987	35,080	38,637	159,530	3,397,295	6,087,852	1,115,328	501,884	7,705,064
2015	20,987	35,080	38,637	159,530	3,400,333	6,093,517	1,118,387	502,821	7,714,725
2016	20,987	35,080	38,637	159,530	3,401,630	6,095,937	1,119,700	503,220	7,718,857
2017	20,987	35,080	38,637	159,530	3,402,918	6,098,336	1,120,993	503,617	7,722,946
2018	20,987	35,080	38,637	159,530	3,403,925	6,100,240	1,121,922	503,900	7,726,062
2019	20,987	35,080	38,637	159,530	3,404,137	6,100,677	1,122,019	503,931	7,726,627
2020	20,987	35,080	38,637	159,530	3,404,026	5,941,893	1,121,792	503,861	7,567,546
2021	18,256	32,120	34,322	148,677	3,204,125	5,942,196	1,121,962	503,913	7,568,071
2022	18,256	32,120	34,322	148,677	3,203,720	5,775,161	1,082,355	487,043	7,344,559
2023	18,256	32,120	34,322	148,677	3,203,909	5,775,515	1,082,541	487,101	7,345,157
2024	18,115	31,967	34,099	148,115	3,193,039	5,756,033	1,078,233	481,360	7,315,626
2025	18,115	31,967	34,099	148,115	3,193,378	5,756,660	1,078,578	481,466	7,316,704
2026	18,115	31,967	34,099	148,115	3,193,225	5,756,393	1,078,387	481,407	7,316,187
2027	18,115	31,967	34,099	148,115	3,193,538	5,756,979	1,078,666	481,492	7,317,137
2028	18,115	31,967	34,099	148,115	3,193,025	5,756,078	1,078,005	481,290	7,315,373
2029	18,115	31,967	34,099	148,115	3,193,303	5,756,647	1,078,134	481,330	7,316,111
2030	18,115	31,967	34,099	148,115	3,193,270	5,756,638	1,077,945	481,272	7,315,855
2031	18,115	31,967	34,099	148,115	3,193,646	5,757,386	1,078,176	481,344	7,316,906
2032	18,115	31,967	34,099	148,115	3,192,962	5,756,161	1,077,340	481,088	7,314,589
2033	18,115	31,967	34,099	148,115	3,193,695	5,757,529	1,078,075	481,311	7,316,915
2034	18,115	31,967	34,099	148,115	3,192,096	5,754,548	1,076,478	480,824	7,311,850
2035	18,115	31,967	34,099	148,115	3,194,780	5,759,558	1,079,160	481,644	7,320,362

TABLE B-11: MINIMUM OMP&R COSTS OF EACH AQUEDUCT REACH TO BE

(in dollars)

Sheet 3 of 8

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	883,970	220,832	90,305	174,835	1,424,880	39,348	133,933	123,424
1977	73,331	1,114,598	270,734	98,132	196,311	1,753,106	38,086	121,348	178,078
1978	39,948	974,878	204,195	107,331	203,654	1,530,006	45,546	178,425	129,552
1979	224,488	844,490	145,874	100,493	181,992	1,497,337	69,989	151,642	130,712
1980	245,348	1,166,927	222,533	127,642	282,032	2,044,482	57,814	276,616	186,801
1981	267,385	1,061,500	200,205	93,239	1,615,989	3,238,318	80,119	198,046	143,998
1982	276,745	1,218,150	207,057	113,816	1,431,232	3,247,000	59,409	271,416	235,847
1983	190,884	1,512,140	293,224	120,041	2,061,857	4,178,146	51,179	331,709	205,621
1984	283,997	2,097,644	260,880	116,541	4,496,131	7,255,193	115,688	423,670	331,666
1985	291,099	2,297,291	297,081	143,408	2,921,942	5,950,821	129,001	465,907	364,425
1986	310,717	2,433,455	321,237	155,144	1,122,573	4,343,126	130,848	490,618	381,488
1987	320,931	2,474,374	347,934	165,983	1,143,509	4,452,731	126,447	498,288	385,453
1988	320,849	2,481,810	376,684	176,254	1,157,843	4,513,440	127,296	503,468	388,610
1989	321,130	2,487,922	383,797	178,842	1,162,427	4,534,118	127,330	503,301	388,820
1990	325,791	2,499,261	383,414	178,609	1,163,854	4,550,929	127,522	506,035	391,280
1991	327,389	2,497,834	380,406	177,680	1,165,815	4,549,124	127,808	507,427	392,400
1992	328,340	2,476,003	339,532	163,151	1,148,378	4,455,404	127,998	508,330	393,122
1993	328,599	2,474,386	335,300	161,637	1,146,579	4,446,501	128,828	513,148	396,404
1994	328,902	2,475,446	335,666	161,753	1,146,727	4,448,494	128,832	513,341	396,585
1995	329,811	2,478,517	336,584	162,046	1,147,098	4,454,056	128,841	513,824	397,038
1996	330,038	2,479,465	336,871	162,139	1,147,213	4,455,726	128,845	513,975	397,179
1997	330,730	2,482,013	337,776	162,427	1,147,576	4,460,522	128,854	514,452	397,625
1998	330,379	2,481,476	337,606	162,372	1,147,508	4,459,341	128,853	514,362	397,541
1999	331,231	2,485,938	338,634	162,700	1,147,923	4,466,428	128,864	514,903	398,047
2000	331,237	2,485,972	338,729	162,730	1,147,960	4,466,628	128,865	514,952	398,093
2001	333,539	2,495,897	341,130	163,652	1,151,774	4,485,992	129,072	516,537	399,449
2002	335,083	2,501,578	342,739	164,166	1,152,424	4,495,990	129,090	517,382	400,241
2003	334,663	2,501,953	342,312	164,030	1,152,251	4,495,209	129,085	517,159	400,031
2004	345,172	2,549,138	354,850	168,019	1,160,044	4,577,223	129,494	518,821	401,430
2005	345,477	2,550,279	355,152	168,115	1,160,166	4,579,189	129,497	518,981	401,578
2006	346,192	2,552,960	355,862	168,342	1,160,452	4,583,808	131,743	518,743	401,547
2007	346,991	2,555,961	356,654	168,594	1,160,771	4,588,971	131,752	518,592	401,937
2008	348,767	2,562,607	358,412	169,157	1,161,479	4,600,422	131,770	518,516	401,802
2009	347,700	2,558,615	357,356	168,819	1,161,052	4,593,542	131,758	518,961	401,283
2010	349,278	2,564,534	358,921	169,319	1,161,684	4,603,736	131,775	518,785	401,054
2011	348,396	2,559,365	358,018	168,821	1,157,468	4,592,068	131,868	518,881	401,729
2012	350,286	2,566,462	359,892	169,420	1,158,223	4,604,283	131,889	518,889	401,653
2013	349,295	2,562,711	358,907	169,106	1,157,826	4,597,845	131,877	518,877	401,617
2014	351,468	2,570,848	361,061	169,794	1,158,694	4,611,865	131,899	518,899	401,628
2015	354,710	2,583,020	364,276	170,819	1,159,989	4,632,814	131,932	518,172	401,811
2016	356,103	2,588,217	365,653	171,260	1,160,544	4,641,777	131,946	518,897	401,489
2017	357,475	2,593,279	366,872	171,648	1,161,035	4,650,309	131,959	518,537	401,091
2018	358,458	2,597,234	367,733	171,924	1,161,381	4,656,730	131,968	518,991	401,513
2019	358,563	2,598,016	367,729	171,922	1,161,380	4,657,610	131,969	518,990	401,513
2020	358,320	2,597,545	367,447	171,833	1,161,267	4,656,412	131,965	518,842	401,374
2021	358,501	2,598,140	367,535	171,860	1,161,303	4,657,339	131,967	518,887	401,417
2022	343,625	2,533,197	349,199	166,093	1,149,819	4,541,933	131,958	518,461	401,937
2023	343,822	2,533,764	349,106	166,063	1,149,780	4,542,535	131,957	518,411	401,971
2024	341,267	2,521,858	346,000	165,014	1,148,123	4,522,262	126,923	511,523	397,782
2025	341,632	2,523,210	346,361	165,130	1,148,269	4,524,602	126,927	511,712	397,960
2026	341,428	2,522,617	346,176	165,072	1,148,195	4,523,488	126,925	511,614	397,868
2027	341,725	2,523,862	346,482	165,169	1,148,319	4,525,557	126,929	511,776	398,019
2028	341,023	2,521,859	345,847	164,965	1,148,063	4,521,757	126,921	511,441	397,706
2029	341,162	2,523,013	346,044	165,028	1,148,142	4,523,389	125,466	503,192	392,188
2030	340,961	2,522,818	345,751	164,936	1,148,024	4,522,490	125,464	503,037	392,044
2031	341,205	2,524,251	345,895	164,981	1,148,081	4,524,413	125,465	503,113	392,115
2032	340,319	2,521,452	344,920	164,669	1,147,689	4,519,049	125,454	502,600	391,634
2033	341,099	2,524,388	345,694	164,917	1,148,002	4,524,100	125,463	503,007	392,016
2034	339,406	2,517,986	344,010	164,380	1,147,323	4,513,105	125,446	502,122	391,187
2035	342,249	2,528,743	346,838	165,283	1,148,462	4,531,575	125,475	503,609	392,578

REIMBURSED THRU MINIMUM OMP&R COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Sheet 4 of 8

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	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	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	83,706	59,077	0	0	0	0	0	0	0	0
1970	118,046	85,758	0	0	0	0	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	1,124,068	177,086	114,133	1,037,815	
1977	194,086	108,644	91,547	175,039	137,975	1,397,180	203,837	119,467	1,339,378	
1978	168,195	106,434	72,257	170,355	150,669	1,351,508	138,948	131,739	1,368,434	
1979	176,150	86,534	57,272	174,842	150,888	1,492,165	202,610	261,559	1,217,121	
1980	286,081	121,938	124,658	168,470	166,272	1,992,756	190,141	239,525	1,438,661	
1981	199,740	76,825	33,223	113,166	171,329	1,744,430	166,663	163,235	1,797,856	
1982	267,512	159,650	145,022	225,793	226,270	1,805,576	192,661	14,264	1,963,785	
1983	275,339	130,618	114,322	193,156	202,697	2,574,166	176,654	130,112	2,803,676	
1984	361,024	244,846	216,827	329,972	384,139	3,218,798	291,943	200,555	3,140,931	
1985	397,165	268,953	235,197	366,370	409,202	3,377,993	315,552	216,371	3,333,988	
1986	416,676	280,314	242,954	385,248	429,502	3,436,175	333,235	220,636	3,399,117	
1987	422,094	280,911	241,974	389,279	435,698	3,477,175	334,917	219,639	3,431,569	
1988	425,362	283,465	244,572	391,900	440,327	3,483,252	337,456	221,769	3,430,750	
1989	425,420	283,196	244,333	392,123	440,584	3,485,027	337,632	221,863	3,432,449	
1990	428,066	284,707	246,541	393,831	442,862	3,494,056	340,166	223,684	3,438,512	
1991	429,270	285,475	247,337	394,867	444,075	3,493,866	341,197	224,378	3,436,689	
1992	430,049	285,972	247,845	395,544	444,864	3,498,141	341,847	224,811	3,440,547	
1993	433,284	288,186	250,243	398,217	449,563	3,517,090	344,517	227,032	3,454,185	
1994	433,478	288,292	250,415	398,329	449,721	3,517,614	344,680	227,153	3,454,475	
1995	433,964	288,561	250,850	398,609	450,117	3,519,118	345,113	227,468	3,455,328	
1996	434,116	288,644	250,983	398,695	450,240	3,519,612	345,269	227,583	3,455,600	
1997	434,593	288,907	251,411	398,971	450,629	3,520,909	345,699	227,898	3,456,299	
1998	434,504	288,858	251,330	398,919	450,557	3,520,587	345,573	227,805	3,456,123	
1999	435,048	289,157	251,816	399,231	450,999	3,522,643	346,027	228,136	3,457,368	
2000	435,096	289,185	251,860	399,260	451,041	3,522,686	346,073	228,172	3,457,375	
2001	436,556	290,061	252,968	400,338	452,388	3,529,271	347,371	229,080	3,462,589	
2002	437,405	290,530	253,726	400,827	453,081	3,532,088	348,176	229,669	3,464,195	
2003	437,179	290,404	253,525	400,697	452,896	3,532,072	347,950	229,502	3,464,317	
2004	438,807	291,399	254,258	402,149	454,129	3,681,099	349,575	230,604	3,612,133	
2005	438,967	291,486	254,401	402,241	454,259	3,681,695	349,757	230,738	3,612,469	
2006	447,799	297,531	260,970	409,509	467,141	3,733,552	357,143	236,901	3,649,493	
2007	448,218	297,763	261,344	409,751	467,482	3,734,971	357,498	237,162	3,650,326	
2008	449,148	298,275	262,174	410,286	468,240	3,738,206	358,368	237,796	3,652,205	
2009	448,589	297,968	261,675	409,964	467,784	3,736,262	357,846	237,415	3,651,079	
2010	449,416	298,424	262,414	410,441	468,459	3,739,146	358,620	237,981	3,652,752	
2011	450,017	298,839	262,999	410,815	469,605	3,742,311	359,147	238,536	3,653,827	
2012	451,007	299,385	263,883	411,384	470,412	3,745,769	360,072	239,214	3,655,835	
2013	450,487	299,099	263,417	411,085	469,987	3,743,942	359,586	238,857	3,654,773	
2014	451,625	299,726	264,434	411,741	470,914	3,747,905	360,648	239,634	3,657,074	
2015	453,325	300,663	265,951	412,719	472,299	3,753,829	362,236	240,797	3,660,517	
2016	454,052	301,064	266,601	413,138	472,892	3,756,360	362,915	241,292	3,661,989	
2017	454,696	301,419	267,176	413,509	473,417	3,758,815	363,543	241,753	3,663,439	
2018	455,152	301,671	267,584	413,771	473,789	3,760,725	364,008	242,092	3,664,584	
2019	455,150	301,669	267,582	413,769	473,787	3,761,090	364,050	242,124	3,664,837	
2020	455,002	301,588	267,448	413,684	473,665	3,760,848	363,946	242,048	3,664,728	
2021	455,048	301,613	267,489	413,710	473,703	3,761,075	363,954	242,053	3,664,885	
2022	454,621	301,377	267,108	413,455	473,356	3,529,717	363,573	241,772	3,434,024	
2023	454,569	301,386	267,052	413,435	473,315	3,529,975	363,576	241,777	3,434,221	
2024	435,350	288,288	253,585	397,284	446,577	3,415,928	347,292	228,498	3,349,970	
2025	435,542	288,394	253,755	397,394	446,733	3,416,589	347,469	228,628	3,350,353	
2026	435,444	288,339	253,666	397,338	446,652	3,416,297	347,384	228,565	3,350,187	
2027	435,606	288,429	253,812	397,431	446,785	3,416,902	347,541	228,680	3,350,546	
2028	435,270	288,244	253,513	397,238	446,511	3,415,872	347,210	228,437	3,349,986	
2029	429,864	284,499	249,544	392,703	438,403	3,383,466	342,728	224,664	3,326,691	
2030	429,710	284,412	249,404	392,613	438,276	3,383,306	342,596	224,569	3,326,655	
2031	429,785	284,455	249,473	392,658	438,339	3,383,905	342,651	224,608	3,327,069	
2032	429,270	284,170	249,012	392,361	437,918	3,382,443	342,154	224,246	3,326,283	
2033	429,679	284,395	249,378	392,596	438,252	3,383,794	342,470	224,478	3,327,083	
2034	428,791	283,906	248,584	392,084	437,527	3,380,599	341,575	223,822	3,325,241	
2035	430,283	284,729	249,918	392,945	438,745	3,385,756	342,910	224,798	3,328,259	

TABLE B-11: MINIMUM OMP&R COSTS OF EACH AQUEDUCT REACH TO BE

(in dollars)

Sheet 5 of 8

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	1,727,465	5,001,747	2,776,325	126,653	2,902,978	118,610	201,215	0	182,927
1977	1,961,479	6,066,144	3,846,877	83,936	3,930,813	93,565	226,906	0	180,884
1978	2,150,120	6,162,182	3,744,064	42,777	3,786,841	92,356	203,131	0	217,398
1979	1,801,286	5,972,770	3,545,321	46,000	3,591,321	99,685	307,449	0	261,255
1980	2,238,786	7,488,519	4,763,976	54,910	4,818,886	116,934	448,062	0	292,161
1981	2,752,299	7,640,929	5,512,750	64,353	5,577,103	314,004	491,843	0	317,040
1982	3,005,878	8,573,083	6,426,275	56,623	6,482,898	450,596	476,289	0	286,181
1983	4,614,834	11,804,083	15,150,117	87,190	15,237,307	477,826	468,691	0	372,234
1984	5,149,296	14,409,355	18,009,912	136,300	18,146,212	453,583	786,329	0	453,339
1985	5,642,574	15,522,698	18,471,872	160,608	18,632,480	470,187	843,331	0	483,616
1986	5,755,210	15,902,021	18,937,563	169,363	19,106,926	475,498	890,773	0	511,066
1987	5,566,433	15,809,877	15,385,894	84,949	15,470,843	479,311	918,031	0	525,421
1988	5,560,838	15,839,065	14,241,070	84,941	14,326,011	479,221	917,256	0	524,906
1989	5,562,204	15,844,282	14,244,855	86,821	14,331,676	481,049	926,328	0	532,645
1990	5,576,728	15,893,990	14,260,187	87,495	14,347,682	484,508	947,881	0	546,407
1991	5,569,998	15,894,787	14,218,973	87,768	14,306,741	485,998	952,591	0	549,280
1992	5,575,858	15,914,928	14,228,221	87,935	14,316,156	487,002	955,724	0	551,185
1993	5,599,449	16,000,146	14,229,801	87,965	14,317,766	487,242	956,301	0	551,547
1994	5,600,218	16,003,133	14,230,619	88,002	14,318,621	487,502	958,057	0	552,674
1995	5,602,447	16,011,278	14,233,081	88,099	14,321,180	487,989	957,891	0	552,569
1996	5,603,209	16,013,950	14,233,839	88,132	14,321,971	488,200	958,937	0	553,240
1997	5,605,229	16,021,476	14,235,788	88,219	14,324,007	488,759	961,966	0	555,185
1998	5,604,532	16,019,544	14,235,363	88,165	14,323,528	488,602	960,663	0	554,349
1999	5,607,228	16,029,467	14,239,145	88,239	14,327,384	489,569	964,396	0	556,748
2000	5,607,459	16,030,117	14,239,115	88,246	14,327,361	489,576	964,658	0	556,916
2001	5,616,753	16,062,433	14,252,192	88,551	14,340,743	491,559	972,196	0	561,650
2002	5,621,022	16,077,432	14,256,806	88,729	14,345,535	492,841	978,613	0	565,770
2003	5,774,348	16,075,165	14,257,467	88,640	14,346,107	492,877	976,861	0	564,646
2004	5,774,089	16,537,987	14,279,117	89,582	14,368,699	493,793	980,710	0	567,006
2005	5,775,016	16,541,085	14,280,056	89,620	14,369,676	494,056	982,045	0	567,861
2006	5,839,873	16,774,377	14,601,636	89,700	14,691,336	494,666	984,983	0	569,749
2007	5,841,913	16,781,709	14,604,112	93,026	14,697,138	497,987	1,002,772	0	584,601
2008	5,846,684	16,798,470	14,609,593	93,225	14,702,818	499,481	1,009,877	0	589,167
2009	5,843,813	16,788,397	14,606,301	93,104	14,699,405	498,577	1,005,505	0	586,355
2010	5,848,072	16,803,339	14,611,184	93,282	14,704,466	499,913	1,011,884	0	590,452
2011	5,851,618	16,817,192	14,600,921	93,140	14,694,061	499,154	1,011,069	0	590,069
2012	5,856,723	16,835,092	14,606,776	93,355	14,700,131	500,757	1,018,725	0	594,987
2013	5,854,023	16,825,649	14,603,678	93,240	14,696,918	499,906	1,014,610	0	592,345
2014	5,859,877	16,846,186	14,610,388	93,488	14,703,876	501,739	1,023,363	0	597,968
2015	5,868,632	16,876,883	14,620,430	93,854	14,714,284	504,491	1,036,484	0	606,399
2016	5,872,370	16,890,005	14,624,716	94,009	14,718,725	505,663	1,042,079	0	609,990
2017	5,876,020	16,902,374	14,628,970	94,161	14,723,131	506,826	1,047,578	0	613,526
2018	5,878,883	16,911,731	14,632,353	94,282	14,726,635	507,748	1,051,904	0	616,304
2019	5,879,410	16,912,940	14,633,138	94,306	14,727,444	507,950	1,052,751	0	616,849
2020	5,879,031	16,911,169	14,632,854	94,289	14,727,143	507,860	1,052,151	0	616,465
2021	5,879,284	16,912,085	14,633,390	94,298	14,727,688	507,989	1,052,509	0	616,693
2022	5,647,258	16,214,708	14,632,054	94,230	14,726,284	507,577	1,050,002	0	615,082
2023	5,647,467	16,215,085	14,632,682	94,236	14,726,918	508,237	1,059,493	0	621,180
2024	5,501,733	15,700,733	13,971,745	92,792	14,064,537	507,260	1,053,834	0	617,717
2025	5,502,487	15,703,943	13,972,859	85,691	14,058,550	501,700	1,022,507	0	590,054
2026	5,501,916	15,702,195	13,972,389	85,668	14,058,057	501,560	1,021,678	0	589,516
2027	5,502,671	15,705,127	13,973,431	85,702	14,059,133	501,834	1,022,861	0	590,278
2028	5,501,191	15,699,540	13,971,849	85,640	14,057,489	501,396	1,020,675	0	588,874
2029	5,460,972	15,554,380	13,972,871	85,673	14,058,544	501,664	1,021,809	0	589,605
2030	5,460,733	15,552,819	13,972,872	85,661	14,058,533	501,639	1,021,376	0	589,325
2031	5,461,629	15,555,265	13,974,209	85,691	14,059,900	501,972	1,022,517	0	590,058
2032	5,459,430	15,546,975	13,972,055	85,596	14,057,651	501,345	1,019,008	0	587,802
2033	5,461,331	15,553,942	13,974,479	85,661	14,060,140	501,961	1,021,374	0	589,325
2034	5,456,521	15,537,405	13,969,192	85,451	14,054,643	500,485	1,013,927	0	584,538
2035	5,464,055	15,564,060	13,978,077	85,768	14,063,845	502,896	1,025,158	0	591,756

REIMBURSED THRU MINIMUM OMP&R COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Sheet 6 of 8

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	362,155	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	2,375,942	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	1,598,085	107,787	304,638	2,902,138	51,356	1,103,156	
1977	112,589	98,757	86,279	1,882,217	71,228	48,359	2,800,784	62,584	1,412,923	
1978	122,338	110,303	72,503	2,301,393	72,179	660,404	3,852,005	67,186	1,263,088	
1979	194,156	203,108	121,610	2,105,431	76,960	202,555	3,572,209	84,462	1,235,822	
1980	238,715	157,649	117,912	2,689,977	147,009	687,806	4,896,225	72,651	1,533,740	
1981	283,806	176,255	115,935	3,083,261	182,591	104,373	5,069,108	35,662	1,576,480	
1982	340,981	192,242	129,833	3,333,912	307,429	629,697	6,147,160	26,844	1,839,396	
1983	351,759	222,589	149,779	4,225,564	254,965	167,149	6,690,556	20,508	1,655,829	
1984	390,989	248,903	174,024	4,921,615	272,533	2,510,450	10,211,765	32,761	1,983,154	
1985	412,592	267,179	191,490	5,180,817	283,222	3,076,085	11,208,519	38,042	2,269,829	
1986	432,491	284,589	203,227	5,182,589	299,111	851,229	9,130,573	38,241	2,392,603	
1987	340,981	291,916	201,167	5,096,522	307,815	1,527,990	9,792,571	39,460	2,419,714	
1988	443,862	291,625	200,928	5,021,849	307,896	1,514,747	9,702,290	39,470	2,420,148	
1989	450,729	295,025	203,882	5,140,398	310,383	891,463	9,231,902	40,630	2,448,737	
1990	464,387	302,799	209,946	5,198,071	310,767	1,666,924	10,131,690	40,679	2,453,895	
1991	467,073	304,412	211,148	5,209,189	311,485	433,544	8,924,720	40,768	2,459,784	
1992	468,852	305,483	211,941	5,219,546	311,965	1,673,226	10,184,924	40,827	2,463,740	
1993	469,201	305,686	212,096	5,221,579	312,017	611,640	9,127,309	40,834	2,464,315	
1994	470,328	306,325	212,596	5,225,653	312,017	889,714	9,414,866	40,834	2,464,520	
1995	470,223	306,264	212,546	5,233,477	312,017	2,965,537	11,498,513	40,834	2,465,138	
1996	470,894	306,645	212,846	5,237,043	312,017	1,314,050	9,853,872	40,834	2,465,328	
1997	472,839	307,744	213,708	5,245,071	312,017	1,028,587	9,585,876	40,834	2,465,817	
1998	472,003	307,270	213,338	5,239,845	312,017	237,406	8,785,493	40,834	2,465,711	
1999	474,402	308,629	214,402	5,246,450	312,017	2,722,134	11,288,747	40,834	2,466,659	
2000	474,570	308,720	214,475	5,246,934	312,017	1,928,582	10,496,448	40,834	2,466,652	
2001	479,174	311,389	216,524	5,269,730	312,514	-328,853	8,285,883	40,896	2,471,625	
2002	483,294	313,720	218,352	5,286,290	312,514	2,340,608	10,992,002	40,896	2,472,783	
2003	482,170	313,083	217,854	5,278,311	312,514	1,746,089	10,384,405	40,896	2,472,949	
2004	484,354	314,491	219,272	5,292,233	313,353	313,353	9,809,579	41,183	2,480,683	
2005	485,209	314,974	219,649	5,295,901	313,353	1,001,046	9,674,094	41,183	2,480,920	
2006	487,097	316,039	220,485	5,303,772	313,353	1,651,559	10,341,703	41,183	2,481,475	
2007	500,552	322,808	226,344	5,511,415	317,334	1,028,649	9,992,462	43,234	2,528,363	
2008	505,118	325,383	228,372	5,529,873	317,334	2,263,361	11,267,966	43,234	2,529,738	
2009	502,306	323,798	227,122	5,518,559	317,334	241,339	9,220,895	43,234	2,528,913	
2010	506,403	326,114	228,942	5,535,130	317,334	691,154	9,707,326	43,234	2,530,137	
2011	506,183	325,904	228,835	5,529,462	316,702	2,157,422	11,164,800	43,156	2,525,417	
2012	511,101	328,685	231,018	5,549,362	316,702	1,437,582	10,488,919	43,156	2,526,887	
2013	508,459	327,189	229,846	5,538,713	316,702	953,011	9,980,781	43,156	2,526,109	
2014	514,082	330,368	232,338	5,561,465	316,702	1,357,381	10,435,406	43,156	2,527,793	
2015	522,513	335,133	236,077	5,595,552	316,702	2,910,893	12,064,244	43,156	2,530,313	
2016	526,104	337,164	237,670	5,610,088	316,702	165,834	9,351,294	43,156	2,531,389	
2017	529,640	339,162	239,237	5,624,421	316,702	1,560,272	10,777,364	43,156	2,532,457	
2018	532,418	340,731	240,470	5,635,720	316,702	1,581,604	10,823,601	43,156	2,533,306	
2019	532,963	341,039	240,713	5,638,043	316,702	2,167,627	11,414,637	43,156	2,533,502	
2020	532,579	340,822	240,540	5,636,636	316,702	1,564,454	10,808,209	43,156	2,533,432	
2021	532,807	340,952	240,643	5,637,789	316,702	899,057	10,145,141	43,156	2,533,565	
2022	531,196	340,041	239,927	5,631,777	316,702	1,424,308	10,656,612	43,156	2,533,230	
2023	537,294	343,489	242,635	5,650,716	316,702	2,989,815	12,269,561	43,156	2,533,388	
2024	534,096	341,422	240,540	5,628,056	315,436	536,197	9,774,558	42,724	2,522,207	
2025	509,514	329,376	229,872	5,191,044	306,665	1,550,584	10,231,316	38,205	2,420,550	
2026	508,976	329,075	229,635	5,189,034	306,665	1,668,606	10,344,745	38,205	2,420,432	
2027	509,738	329,503	229,973	5,192,221	306,665	1,117,629	9,800,702	38,205	2,420,694	
2028	508,334	328,711	229,351	5,186,624	306,665	1,701,692	10,372,322	38,205	2,420,297	
2029	509,065	329,123	229,675	5,189,700	306,665	1,486,457	10,163,763	38,205	2,420,554	
2030	508,785	328,965	229,549	5,188,864	306,665	1,478,018	10,153,186	38,205	2,420,554	
2031	509,518	329,378	229,876	5,192,223	306,665	1,872,279	10,554,486	38,205	2,420,890	
2032	507,262	328,105	228,877	5,183,102	306,665	1,039,662	9,701,828	38,205	2,420,349	
2033	508,785	328,966	229,551	5,189,304	306,665	1,903,255	10,579,188	38,205	2,420,957	
2034	503,998	326,261	227,428	5,169,873	306,665	924,819	9,557,994	38,205	2,419,630	
2035	511,216	330,337	230,628	5,198,859	306,665	3,774,762	12,472,277	38,205	2,421,859	

TABLE B-11: MINIMUM OMP&R COSTS OF EACH AQUEDUCT REACH TO BE

(in dollars)

Sheet 7 of 8

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SANTA ANA DIVISION (continued)				WEST BRANCH				
	Reach 28G	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	2,029,340	1,220,439	215,588	202,591	624,614	98,268
1977	127,543	92,647	825,880	2,521,577	1,268,925	116,939	218,129	684,679	184
1978	166,919	68,363	857,173	2,422,729	1,238,476	348,012	267,357	417,301	17,764
1979	142,586	92,812	265,504	1,821,186	1,367,434	285,636	284,190	973,213	29,850
1980	158,340	129,896	1,131,979	3,026,606	1,699,263	224,246	455,644	876,077	288,302
1981	160,053	196,879	332,152	2,301,226	1,783,657	125,036	615,131	2,138,968	8,794
1982	205,188	316,772	1,767,336	4,155,536	1,927,526	189,683	701,555	2,741,081	289,114
1983	210,169	267,540	545,656	2,699,702	2,690,268	211,081	1,109,753	867,589	701,563
1984	186,012	149,214	210,470	2,561,611	3,504,746	383,263	1,214,597	1,908,799	600,250
1985	199,862	167,318	2,158,963	4,834,014	3,895,079	396,799	1,261,778	2,101,466	635,226
1986	217,435	181,686	1,073,299	3,903,264	3,849,198	399,231	1,321,756	1,670,544	646,231
1987	224,623	187,686	1,722,375	4,593,858	3,495,397	407,848	1,035,660	1,716,318	425,133
1988	224,681	187,735	1,429,954	4,301,988	3,349,327	406,843	908,945	1,713,238	349,841
1989	229,849	189,223	1,448,393	4,356,832	3,382,460	419,027	913,863	1,722,767	361,720
1990	230,127	189,458	2,463,174	5,377,333	3,388,377	441,077	919,325	1,797,617	362,586
1991	230,639	189,895	1,817,455	4,738,541	3,389,569	444,927	921,716	1,811,549	363,388
1992	230,984	190,187	1,102,841	4,028,579	3,393,604	447,018	923,309	1,819,208	363,928
1993	231,022	190,218	2,018,404	4,944,793	3,394,186	447,790	923,747	1,822,142	364,019
1994	231,022	190,218	1,016,064	3,942,658	3,394,421	449,154	924,139	1,826,632	364,063
1995	231,022	190,218	2,867,363	5,794,575	3,395,112	452,875	925,437	1,847,577	364,198
1996	231,022	190,218	1,953,189	4,880,591	3,395,333	454,187	925,831	1,853,761	364,240
1997	231,022	190,218	1,602,753	4,530,644	3,395,895	457,479	926,828	1,868,404	364,346
1998	231,022	190,218	2,179,663	5,107,448	3,395,708	455,575	926,576	1,862,812	364,323
1999	231,022	190,218	1,376,753	4,305,486	3,396,620	458,684	928,277	1,875,213	364,529
2000	231,022	190,218	1,847,705	4,776,431	3,396,630	458,969	928,255	1,874,613	364,527
2001	231,378	190,522	1,571,070	4,505,491	3,401,774	466,227	931,607	1,902,398	365,278
2002	231,378	190,522	1,568,720	4,504,299	3,403,061	473,113	933,831	1,927,829	365,530
2003	231,378	190,522	1,925,653	4,861,398	3,403,026	470,119	933,956	1,918,121	365,565
2004	232,345	191,191	2,693,226	5,638,628	3,551,728	473,150	936,356	1,929,359	366,292
2005	232,345	191,191	2,129,707	5,075,346	3,551,999	474,696	936,819	1,935,313	366,344
2006	232,345	191,191	1,657,234	4,603,428	3,552,608	477,855	937,874	1,946,590	366,464
2007	241,074	193,608	1,758,834	4,765,113	3,607,358	501,998	947,689	1,974,723	386,793
2008	241,074	193,608	1,439,192	4,446,846	3,608,858	509,714	950,294	2,002,301	387,093
2009	241,074	193,608	2,942,493	5,949,322	3,607,949	504,976	948,708	1,984,210	386,913
2010	241,074	193,608	2,228,169	5,236,222	3,609,292	511,896	951,036	2,009,251	387,179
2011	240,621	193,224	425,899	3,428,317	3,604,535	512,272	949,848	2,009,608	386,572
2012	240,621	193,224	3,130,930	6,134,818	3,606,145	520,580	952,642	2,039,682	386,892
2013	240,621	193,224	706,179	3,709,289	3,605,289	516,079	951,168	2,024,125	386,723
2014	240,621	193,224	1,052,114	4,056,908	3,607,126	525,557	954,361	2,057,898	387,089
2015	240,621	193,224	2,735,866	5,743,180	3,609,887	539,801	959,105	2,106,477	387,638
2016	240,621	193,224	2,617,037	5,625,427	3,611,065	545,865	961,130	2,127,016	387,871
2017	240,621	193,224	2,671,696	5,681,154	3,612,231	551,842	963,137	2,147,627	388,104
2018	240,621	193,224	3,649,954	6,660,261	3,613,156	556,547	964,744	2,164,473	388,289
2019	240,621	193,224	1,446,559	4,457,062	3,613,359	557,476	965,108	2,167,802	388,332
2020	240,621	193,224	-1,325,712	1,684,721	3,613,270	556,837	964,976	2,166,644	388,316
2021	240,621	193,224	6,009,792	9,020,358	3,613,398	557,264	965,205	2,167,467	388,345
2022	240,621	193,224	958,886	3,969,117	3,382,627	554,592	964,540	2,158,744	388,273
2023	240,621	193,224	2,693,245	5,703,634	3,382,770	554,885	964,808	2,159,858	388,306
2024	239,162	192,215	453,123	3,449,431	3,368,489	549,834	961,956	2,141,842	387,319
2025	219,932	186,891	4,943,718	7,809,296	3,249,625	505,179	943,456	2,112,944	342,888
2026	219,932	186,891	-1,093,594	1,771,866	3,249,484	504,290	943,224	2,109,893	342,863
2027	219,932	186,891	4,921,925	7,787,647	3,249,759	505,591	943,704	2,114,224	342,920
2028	219,932	186,891	-128,873	2,736,452	3,249,299	502,855	942,932	2,104,977	342,833
2029	219,932	186,891	4,198,789	7,064,371	3,249,550	503,741	943,392	2,108,008	342,889
2030	219,932	186,891	18,264	2,883,846	3,249,519	503,189	943,360	2,106,011	342,889
2031	219,932	186,891	4,379,516	7,245,434	3,249,847	504,364	943,958	2,110,171	342,962
2032	219,932	186,891	-26,264	2,839,113	3,249,206	500,438	942,894	2,096,672	342,845
2033	219,932	186,891	3,139,958	6,005,943	3,249,816	502,900	943,991	2,105,151	342,978
2034	219,932	186,891	794,663	3,659,321	3,248,316	494,514	941,449	2,076,623	342,689
2035	219,932	186,891	4,973,188	7,840,075	3,250,717	506,385	945,615	2,117,160	343,173

REIMBURSED THRU MINIMUM OMP&R COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Sheet 8 of 8

Calendar Year	CALIFORNIA AQUEDUCT (continued)							TOTAL	GRAND TOTAL
	WEST BRANCH (continued)		COASTAL BRANCH						
	Reach 30	Subtotal	Reach 31A ^(a)	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	1,710,556	840,928	0	0	0	840,928	19,003,143	20,027,640
1977	634,581	2,923,437	872,189	0	0	0	872,189	23,275,267	24,222,398
1978	2,661,172	4,950,082	946,711	0	0	0	946,711	26,158,089	27,375,202
1979	957,996	3,898,319	871,677	0	0	0	871,677	23,438,309	24,693,244
1980	564,492	4,108,024	1,054,894	0	0	0	1,054,894	30,511,416	32,445,802
1981	1,077,071	5,748,657	1,031,225	0	0	0	1,031,225	33,842,394	35,473,230
1982	980,295	6,829,258	1,040,188	0	0	0	1,040,188	40,484,771	42,619,242
1983	2,905,530	8,485,784	1,260,959	0	0	0	1,260,959	55,385,206	57,567,755
1984	-12,069,830	-4,458,175	1,328,995	0	0	0	1,328,995	56,049,658	59,140,135
1985	13,095,817	21,386,165	1,422,722	0	0	0	1,422,722	87,256,755	90,968,841
1986	173,054	8,060,014	1,527,310	0	0	0	1,527,310	70,569,066	74,314,464
1987	2,384,226	9,464,582	1,571,099	0	0	0	1,571,099	68,608,968	72,318,045
1988	1,414,909	8,143,103	1,584,169	0	0	0	1,584,169	65,843,839	69,516,230
1989	1,752,363	8,552,200	1,585,204	0	0	0	1,585,204	65,870,114	69,534,340
1990	1,109,601	8,018,583	1,589,604	0	0	0	1,589,604	67,323,829	70,995,284
1991	2,721,329	9,652,478	1,592,531	209,721	1,746	3,637	1,807,635	67,267,899	70,945,025
1992	-125,809	6,821,258	1,595,000	260,522	1,762	3,672	1,860,956	64,985,706	68,668,273
1993	2,847,129	9,799,013	1,595,434	260,695	1,774	3,697	1,861,600	67,902,188	71,584,826
1994	2,778,497	9,736,906	1,595,679	260,905	1,792	3,732	1,862,108	67,132,682	70,815,376
1995	137,904	7,123,103	1,596,390	261,530	1,837	3,827	1,863,584	68,474,696	72,158,159
1996	1,364,781	8,358,133	1,596,609	261,722	1,851	3,856	1,864,038	67,157,394	70,840,972
1997	1,334,917	8,347,869	1,597,199	262,226	1,892	3,943	1,865,260	66,546,723	70,230,835
1998	2,012,237	9,017,231	1,597,074	262,116	1,885	3,925	1,865,000	66,987,975	70,671,915
1999	1,516,303	8,539,624	1,598,106	263,057	1,942	4,046	1,867,151	68,237,840	71,923,027
2000	875,145	7,898,139	1,598,114	263,055	1,945	4,053	1,867,167	67,275,837	70,961,029
2001	1,459,676	8,526,960	1,601,672	264,185	2,024	4,217	1,872,098	65,506,601	69,198,984
2002	3,716,492	10,819,856	1,602,985	265,349	2,106	4,388	1,874,828	70,650,217	74,344,198
2003	2,384,295	9,475,082	1,603,070	265,484	2,097	4,368	1,875,019	69,052,488	72,875,925
2004	1,457,347	8,714,232	1,611,652	266,070	2,127	4,430	1,884,279	69,225,238	73,071,998
2005	1,205,106	8,470,277	1,611,916	266,306	2,142	4,463	1,884,827	68,290,011	72,137,105
2006	1,034,864	8,316,255	1,651,729	266,862	2,180	4,539	1,925,310	68,933,863	72,781,736
2007	2,781,033	10,199,594	1,652,423	267,485	2,221	4,626	1,926,755	70,651,770	74,500,494
2008	2,462,950	9,921,210	1,653,960	268,859	2,313	4,818	1,929,950	71,372,986	75,223,598
2009	-586,344	6,846,412	1,653,037	268,033	2,257	4,703	1,928,030	67,728,136	71,577,624
2010	1,231,575	8,700,229	1,654,405	269,259	2,339	4,874	1,930,877	69,393,028	73,244,198
2011	179,557	7,642,392	1,651,695	269,423	2,350	4,897	1,928,365	67,963,133	71,807,413
2012	2,631,765	10,137,706	1,653,336	270,895	2,448	5,101	1,931,780	72,534,297	76,380,597
2013	881,530	8,364,914	1,652,469	270,116	2,396	4,993	1,929,974	67,803,971	71,649,226
2014	3,102,254	10,634,285	1,654,350	271,801	2,509	5,227	1,933,887	70,927,477	74,775,062
2015	2,606,535	10,209,443	1,657,164	274,323	2,676	5,578	1,939,741	73,895,314	77,746,377
2016	1,422,462	9,055,409	1,658,365	275,400	2,748	5,728	1,942,241	69,943,735	73,796,290
2017	1,105,585	8,768,526	1,659,536	276,462	2,816	5,866	1,944,680	71,170,484	75,024,520
2018	2,299,357	9,986,566	1,660,450	277,300	2,865	5,970	1,946,585	73,438,171	77,293,371
2019	1,527,671	9,219,748	1,660,628	277,484	2,871	5,980	1,946,963	71,063,031	74,918,477
2020	3,133,945	10,823,988	1,660,519	277,404	2,860	5,958	1,946,741	69,125,929	72,981,281
2021	1,341,894	9,033,573	1,660,655	277,534	2,866	5,971	1,947,026	74,011,281	77,666,756
2022	2,291,812	9,740,588	1,660,221	277,181	2,831	5,899	1,946,132	69,139,933	72,771,409
2023	2,632,386	10,083,013	1,660,351	277,324	2,832	5,901	1,946,408	72,832,311	76,464,003
2024	1,640,842	9,050,282	1,570,489	276,899	2,796	5,823	1,856,007	65,733,436	69,351,958
2025	2,188,001	9,342,093	1,570,802	277,176	2,815	5,864	1,856,657	70,843,161	74,462,070
2026	2,083,130	9,232,884	1,570,664	277,057	2,805	5,844	1,856,370	64,805,792	68,424,528
2027	1,871,027	9,027,225	1,570,952	277,316	2,823	5,879	1,856,970	70,079,498	73,698,592
2028	1,931,206	9,074,102	1,570,490	276,915	2,790	5,815	1,856,010	65,633,045	69,251,559
2029	2,026,843	9,174,423	1,570,755	277,165	2,804	5,842	1,856,566	69,711,547	73,330,382
2030	1,669,598	8,814,566	1,570,709	277,152	2,795	5,822	1,856,478	65,157,773	68,776,575
2031	2,156,761	9,308,063	1,571,039	277,474	2,808	5,850	1,857,171	70,421,638	74,040,873
2032	1,627,469	8,759,524	1,570,391	276,920	2,763	5,756	1,855,830	64,594,559	68,213,018
2033	2,005,055	9,149,891	1,571,070	277,527	2,803	5,841	1,857,241	69,047,358	72,666,654
2034	1,733,748	8,837,339	1,569,590	276,199	2,715	5,656	1,854,160	65,325,817	68,943,287
2035	2,529,065	9,692,115	1,572,077	278,430	2,864	5,965	1,859,336	73,343,645	76,964,180

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)

Sheet 1 of 3

Calendar Year	NORTH BAY AQUEDUCT			SOUTH BAY AQUEDUCT	CALIFORNIA AQUEDUCT			
	Reach 1	Reach 3		Reach 1	Reach 1	Reach 4	Reach 14A	Reach 15A
	Cache Slough Pumping Plant	Cordelia Pumping Plant(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)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1962	0	0	0	36,970	0	0	0	0
1963	0	0	0	57,711	0	0	0	0
1964	0	0	0	74,134	0	0	0	0
1965	0	0	0	142,609	0	0	0	0
1966	0	0	0	192,605	0	0	0	0
1967	0	0	0	223,117	13,881	0	0	0
1968	0	6,989	6,989	336,671	452,630	202,947	0	0
1969	0	8,551	8,551	257,579	293,741	135,425	0	0
1970	0	13,598	13,598	396,358	346,215	211,197	1	0
1971	0	10,609	10,609	381,662	574,015	225,188	138,001	17,664
1972	0	14,434	14,434	598,702	927,369	498,553	234,626	89,516
1973	0	14,449	14,449	493,490	685,014	379,305	303,105	275,021
1974	0	17,473	17,473	565,575	769,839	438,997	344,632	350,558
1975	0	14,779	14,779	349,758	1,330,133	514,245	542,726	585,743
1976	0	20,856	20,856	571,361	1,456,742	562,537	609,257	600,780
1977	0	22,635	22,635	512,996	801,033	205,643	165,314	172,120
1978	0	21,713	21,723	587,041	2,368,135	664,018	712,883	629,805
1979	0	16,246	16,246	604,247	3,421,964	974,032	760,947	725,556
1980	0	19,970	19,970	523,680	2,025,049	1,083,251	875,136	849,007
1981	0	21,692	21,692	539,232	3,909,776	1,250,544	1,191,691	1,151,588
1982	0	12,385	12,385	998,780	2,945,399	1,738,308	1,741,601	1,653,964
1983	0	3,071	3,071	187,987	1,097,342	373,174	408,590	372,796
1984	0	28,407	28,407	2,844,503	10,104,159	4,291,379	2,728,160	2,489,724
1985	0	26,030	26,030	2,324,606	11,574,040	5,141,901	4,700,328	4,530,955
1986	0	28,017	28,017	2,081,690	14,165,955	6,497,864	7,167,002	7,677,848
1987	44,643	37,005	81,648	2,108,895	14,916,493	6,860,922	7,600,121	8,131,535
1988	48,884	39,135	88,019	2,255,037	15,101,727	6,929,478	7,436,022	7,989,025
1989	53,084	43,339	96,423	2,312,254	15,358,230	7,046,427	7,715,952	8,230,414
1990	71,802	81,082	152,884	2,603,339	18,847,675	8,640,048	9,824,358	10,753,079
1991	79,389	88,576	167,965	2,723,422	19,788,186	9,067,342	10,148,039	11,131,438
1992	89,639	96,049	185,688	2,835,981	19,946,192	9,180,621	10,225,413	11,216,014
1993	101,733	104,413	206,146	2,787,093	20,581,115	9,523,477	10,678,613	11,758,727
1994	114,455	113,235	227,690	2,886,172	20,959,567	9,740,374	10,899,982	12,018,989
1995	147,952	123,970	271,922	2,991,048	21,676,843	10,074,004	11,278,732	12,450,968
1996	167,986	133,022	301,008	3,047,415	22,169,434	10,354,814	11,685,040	12,924,753
1997	178,671	143,773	322,444	3,139,665	22,760,187	10,803,528	12,067,495	13,350,311
1998	184,057	151,411	335,468	3,127,035	22,894,818	11,039,750	12,235,409	13,517,833
1999	197,340	165,070	362,410	3,239,506	23,886,797	11,670,092	12,859,313	14,234,496
2000	204,800	174,604	379,404	3,238,627	24,052,872	11,835,905	13,028,471	14,443,370
2001	219,055	190,091	409,146	3,371,468	25,125,074	12,404,030	13,692,655	15,169,000
2002	230,148	205,240	435,388	3,508,666	26,486,513	13,102,596	14,575,727	16,179,753
2003	234,371	215,194	449,565	3,528,313	26,447,091	13,095,163	14,593,699	16,184,854
2004	241,758	228,325	470,083	3,599,441	26,890,565	13,300,041	14,889,757	16,508,163
2005	247,840	238,957	486,797	3,627,365	27,259,441	13,476,034	15,208,142	16,875,876
2006	256,952	249,924	506,876	3,693,171	27,908,139	13,775,633	15,666,350	17,401,322
2007	265,158	264,755	529,913	3,766,790	28,704,563	14,147,830	16,104,712	17,908,753
2008	279,538	285,136	564,674	3,929,790	30,101,940	14,777,766	16,915,845	18,832,150
2009	276,765	286,787	563,552	3,831,896	29,273,177	14,405,302	16,438,294	18,289,207
2010	290,142	306,477	596,619	3,977,109	30,787,024	15,106,096	17,390,221	19,389,787
2011	297,358	318,538	615,896	3,996,658	30,910,023	15,158,726	17,449,708	19,454,937
2012	313,455	342,002	655,457	4,170,824	32,754,642	16,013,719	18,617,279	20,806,595
2013	313,669	345,162	658,831	4,078,652	31,978,883	15,661,753	18,164,489	20,291,384
2014	334,990	373,292	708,282	4,278,212	33,876,526	16,525,299	19,312,626	21,610,382
2015	364,887	411,255	776,142	4,576,862	36,490,332	17,703,295	20,845,039	23,359,364
2016	381,122	434,385	815,507	4,704,308	37,511,891	18,154,114	21,414,098	24,002,837
2017	397,421	457,742	855,163	4,830,841	38,752,039	18,577,405	22,175,774	24,880,390
2018	411,872	479,518	891,390	4,931,462	39,749,439	18,921,189	22,855,887	25,668,488
2019	418,009	493,891	911,900	4,954,792	39,897,804	18,882,454	23,019,775	25,858,669
2020	426,476	505,001	931,477	4,946,348	39,726,114	18,764,244	22,985,462	25,820,273
2021	428,702	508,726	937,428	4,962,298	40,098,399	18,846,765	23,148,637	26,040,482
2022	425,268	504,650	929,918	4,922,541	39,817,375	18,332,903	22,883,198	25,768,487
2023	426,883	506,567	933,450	4,941,238	40,122,697	18,177,476	23,102,169	26,027,626
2024	422,655	501,549	924,204	4,892,292	39,506,640	17,598,254	22,694,635	25,550,728
2025	425,514	504,943	930,457	4,925,393	40,079,719	17,858,225	23,098,092	26,028,674
2026	424,306	503,510	927,816	4,911,413	39,690,937	17,696,053	22,834,178	25,713,285
2027	426,985	506,689	933,674	4,942,423	40,198,664	17,942,190	23,216,946	26,166,691
2028	422,920	501,865	924,785	4,895,368	39,561,156	17,717,894	22,812,395	25,803,284
2029	425,548	504,983	930,531	4,925,789	39,907,671	17,941,805	23,063,960	26,083,635
2030	425,549	504,985	930,534	4,925,801	39,589,278	17,696,624	22,828,522	25,781,802
2031	428,985	509,061	938,046	4,965,560	40,039,383	17,801,622	23,078,148	26,135,501
2032	423,451	502,495	925,946	4,901,519	39,131,171	17,293,475	22,423,546	25,371,910
2033	429,679	509,884	939,563	4,973,594	39,960,924	17,667,423	22,806,015	25,819,884
2034	416,093	493,763	909,856	4,816,344	38,534,620	17,027,194	21,802,303	24,667,198
2035	438,920	520,852	959,772	5,080,573	40,809,274	18,047,616	22,984,707	26,014,842

- a) Costs for the period 1968 through 1986 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)

Sheet 2 of 3

Calendar Year	CALIFORNIA AQUEDUCT (Continued)							
	Reach 16A	Reach 17E	Reach 18A	Reach 22B	Reach 24	Reach 26A	Reach 28J	Reach 29A
	Wind Gap Pumping Plant	A.D. Edmonston Pumping Plant	Alamo Powerplant	Pear- blossom Pumping Plant	Silver- wood Lake (d)	Devil Canyon Powerplant	Lake Perris (d)	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	23,388	4,214	-3,024	0	93,212
1973	434,834	1,524,488	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	25,949	-1,033,054	65,935	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	1,155,259	4,081,337	0	1,535,391	0	-5,038,194	0	92,807
1979	1,443,324	4,973,712	0	1,706,786	32,024	-3,121,218	408,299	119,617
1980	1,687,326	5,618,118	0	1,732,112	61,695	-3,318,152	0	46,175
1981	2,306,838	8,142,995	0	2,012,199	179,525	-2,374,626	383,602	342,530
1982	3,402,911	12,171,004	0	2,986,446	0	-3,127,938	0	514,977
1983	681,409	2,039,664	0	383,768	429,269	-5,314,793	0	141,718
1984	4,338,361	12,326,227	0	3,558,299	0	-6,430,429	1,505,014	-30,351
1985	8,875,676	29,032,922	-840,935	4,436,263	0	-9,435,276	0	1,980,291
1986	15,684,073	52,491,220	-7,014,964	10,157,269	389,817	-24,348,144	538,855	2,778,507
1987	16,642,555	55,729,939	-7,204,149	10,366,126	0	-24,653,593	0	3,125,716
1988	16,440,205	55,431,673	-7,170,391	10,206,563	0	-24,523,500	210,930	3,150,292
1989	16,819,096	55,494,246	-7,135,859	10,138,572	392,428	-24,532,129	203,263	3,184,122
1990	22,149,268	73,666,738	-8,930,294	15,549,956	0	-32,304,951	0	3,250,663
1991	22,953,412	76,502,681	-9,125,238	16,078,312	913,424	-33,232,269	0	3,401,359
1992	23,131,195	77,203,007	-9,190,629	16,631,938	0	-33,793,580	686,236	3,221,503
1993	24,283,283	81,419,506	-9,615,775	17,245,723	741,477	-34,956,893	0	3,522,307
1994	24,866,231	83,472,337	-9,479,060	17,667,522	463,805	-35,313,262	782,862	3,584,060
1995	25,801,136	86,703,415	-5,943,714	9,634,973	0	-18,635,166	0	7,537,136
1996	26,761,716	90,053,098	-6,025,429	9,830,104	31,333	-18,824,357	0	7,916,303
1997	27,713,688	92,924,378	-6,002,151	9,942,513	327,630	-18,742,230	169,738	8,224,323
1998	28,223,143	94,262,949	-5,970,565	9,817,102	1,159,835	-18,859,230	0	8,492,646
1999	29,802,649	99,108,573	-6,048,375	10,276,610	0	-18,747,617	441,202	8,964,200
2000	30,371,422	100,326,149	-6,137,723	10,406,800	0	-18,946,498	0	9,086,280
2001	31,861,785	105,205,851	-5,987,450	10,508,308	1,750,665	-18,783,178	287,453	9,682,092
2002	33,987,786	111,987,923	-6,149,563	11,233,911	0	-18,869,399	327,393	10,273,793
2003	33,846,308	111,465,052	-5,752,636	10,483,795	0	-17,315,198	0	10,536,724
2004	34,379,857	113,184,110	-5,495,124	10,225,753	258,048	-16,470,866	0	10,955,957
2005	35,017,208	115,261,588	-5,509,712	10,341,228	406,725	-16,486,018	0	11,280,936
2006	36,012,019	118,504,566	-5,601,495	10,713,088	0	-16,550,159	285,268	11,528,165
2007	37,233,902	122,677,673	-5,666,501	10,971,133	424,852	-16,883,192	223,115	11,915,626
2008	39,174,682	129,237,499	-5,754,340	11,563,090	0	-16,943,826	596,038	12,480,416
2009	38,026,216	125,262,997	-5,812,191	11,138,741	1,225,844	-17,335,148	0	12,718,510
2010	40,360,393	133,172,262	-5,937,593	12,004,841	786,227	-17,579,047	0	12,781,426
2011	40,497,260	133,613,853	-5,907,439	11,934,984	0	-17,222,339	1,644,470	12,842,025
2012	43,365,640	143,361,282	-6,142,711	12,930,786	28,784	-17,850,283	0	13,649,312
2013	42,274,989	139,567,036	-6,046,948	12,378,077	521,014	-17,595,017	1,392,604	13,366,525
2014	45,071,235	149,034,868	-6,186,556	13,237,504	131,152	-17,693,184	1,074,931	14,164,510
2015	48,776,147	161,616,060	-6,367,915	14,527,860	0	-18,442,948	0	15,165,759
2016	50,137,309	166,216,119	-6,345,341	14,784,878	1,412,639	-18,516,959	0	15,595,199
2017	51,999,764	172,560,215	-6,498,397	15,504,645	0	-18,637,139	0	16,057,885
2018	53,674,676	178,268,449	-6,565,076	15,917,357	0	-18,742,731	0	16,577,321
2019	53,988,655	179,647,128	-6,568,026	15,918,641	0	-18,693,728	834,691	16,718,515
2020	53,815,450	179,258,083	-6,421,403	15,404,736	0	-18,064,559	3,677,593	16,872,345
2021	54,417,983	181,526,206	-6,692,386	16,102,713	679,332	-18,930,549	0	16,847,268
2022	53,703,351	180,089,162	-6,657,524	15,795,990	131,011	-18,625,770	1,304,054	16,800,052
2023	53,882,757	181,697,430	-2,495,897	16,147,316	0	-18,961,554	0	16,858,803
2024	52,505,969	178,113,400	-2,435,975	15,454,484	1,047,104	-18,473,881	1,860,686	16,666,244
2025	53,145,878	181,550,912	-2,521,343	16,096,723	0	-18,927,795	0	16,808,680
2026	52,241,001	179,198,871	-2,444,188	15,372,176	0	-18,109,281	3,402,257	16,766,271
2027	52,946,763	182,504,980	-2,540,697	16,085,462	410,982	-18,941,716	0	16,849,645
2028	52,183,396	179,868,178	-2,498,496	15,620,711	0	-18,358,085	2,399,744	16,368,189
2029	53,033,001	182,833,544	-2,576,857	16,054,024	26,149	-18,938,926	0	16,321,263
2030	52,664,679	181,301,082	-2,530,425	15,643,357	28,023	-18,388,895	2,245,401	15,989,154
2031	53,671,383	184,379,909	-2,608,503	16,224,366	0	-18,922,365	0	16,037,180
2032	52,392,675	179,648,111	-2,535,833	15,390,215	467,668	-18,366,421	2,290,568	15,652,938
2033	53,674,570	183,410,709	-2,608,195	16,060,152	0	-18,983,401	0	15,747,956
2034	51,560,859	175,890,831	-2,556,019	15,050,272	571,956	-18,922,692	1,404,753	14,927,288
2035	54,744,958	186,698,082	-2,609,027	16,219,391	0	-18,922,692	0	15,427,738

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)

Sheet 3 of 3

Calendar Year	CALIFORNIA AQUEDUCT (Continued)							GRAND TOTAL
	Reach 29G	Reach 29H	Reach 29J	Reach 30	Reach 31A	Reach 33A	Total	
	William E. Warne Powerplant	Pyramid Lake (d)	Castaic Powerplant	Castaic Lake (d)	Las Perillas and Badger Hill Pumping Plants (e)	Devil's Den Sawtooth and Polonio PP's and San Luis Obispo Pwp.		
(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	3,575	-193,058	72,572	237,638	0	2,648,786	3,261,922
1973	0	7,343	-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	10,226	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	-531,222	-831,024	63,079	0	1,056,940	1,592,571
1978	0	1,191,706	-2,060,574	0	180,202	0	7,512,775	8,121,539
1979	0	0	-2,292,587	3,281	191,713	0	9,345,450	9,965,943
1980	0	478,146	-1,247,275	-524,256	168,671	0	9,535,003	10,078,653
1981	0	0	-4,018,743	0	159,647	0	14,637,566	15,198,490
1982	-784,782	0	-3,454,406	0	268,727	0	20,056,211	21,067,376
1983	-1,196,867	2,439	-3,243,058	-1,262,468	9,851	0	-5,077,166	-4,886,108
1984	-8,331,311	0	-1,245,808	14,015,198	716,679	0	48,425,207	50,998,235
1985	-4,748,680	0	-9,002,329	0	843,914	0	47,089,070	49,439,706
1986	-7,312,154	0	-13,297,319	1,415,197	757,660	0	67,748,686	69,858,393
1987	-8,122,038	0	-14,597,642	0	766,585	0	69,562,570	71,753,113
1988	-8,227,725	0	-14,731,135	184,272	767,514	0	69,194,950	71,538,006
1989	-8,425,717	0	-14,797,631	0	692,299	0	70,472,119	72,880,796
1990	-7,896,089	0	-13,912,095	608,504	760,387	0	101,007,247	103,763,470
1991	-8,184,656	0	-14,347,838	0	1,145,692	0	106,239,884	109,131,271
1992	-7,693,760	0	-13,450,150	1,905,436	1,156,452	0	110,375,888	113,397,557
1993	-8,327,325	0	-14,522,202	0	1,164,398	0	113,496,431	116,489,670
1994	-8,444,600	0	-14,655,550	0	1,273,956	0	117,750,036	120,863,898
1995	-15,745,284	0	-29,115,734	1,654,655	1,202,755	0	118,574,719	121,837,899
1996	-16,083,708	0	-30,305,581	409,709	1,211,614	0	122,108,843	125,457,266
1997	-15,724,288	0	-30,858,804	460,861	1,234,397	0	128,651,576	132,113,685
1998	-16,005,637	0	-31,707,808	0	1,229,431	0	130,329,676	133,792,179
1999	-15,865,290	0	-32,158,264	277,140	1,273,651	0	139,975,197	143,577,113
2000	-16,388,988	0	-32,520,182	932,277	1,273,305	0	141,763,460	145,381,491
2001	-16,283,055	0	-33,313,561	359,223	1,325,534	0	153,004,426	156,785,040
2002	-16,174,776	0	-34,013,949	0	1,379,474	0	164,327,182	168,271,236
2003	-16,364,616	0	-34,591,960	0	1,387,199	0	164,035,475	168,013,353
2004	-16,444,600	0	-35,032,058	385,721	1,415,164	0	168,948,488	173,018,012
2005	-16,518,801	0	-35,539,420	652,625	1,426,143	0	173,151,995	177,266,157
2006	-16,520,759	0	-35,814,823	840,007	1,452,015	0	179,599,336	183,799,383
2007	-16,386,320	0	-36,425,033	0	1,480,958	0	186,432,071	190,728,774
2008	-16,196,718	0	-36,733,278	0	1,545,044	0	199,596,308	204,090,772
2009	-16,477,720	0	-36,302,660	2,565,877	1,526,556	0	194,472,181	198,867,629
2010	-16,531,780	0	-37,235,133	710,100	1,563,647	0	206,768,471	211,342,199
2011	-16,532,348	0	-37,254,853	1,792,880	1,571,334	0	209,953,221	214,565,775
2012	-16,448,563	0	-38,091,695	0	1,639,810	0	224,634,597	229,460,878
2013	-16,537,095	0	-38,127,112	1,085,664	1,603,572	0	219,979,838	224,717,321
2014	-16,401,822	0	-38,744,674	0	1,682,031	0	236,473,819	241,460,313
2015	-16,476,856	0	-39,082,498	0	1,799,449	0	259,913,088	265,266,092
2016	-16,543,504	0	-39,228,439	632,681	1,849,556	0	271,077,078	276,596,893
2017	-16,545,209	0	-39,433,620	975,298	1,899,303	0	282,268,353	287,954,357
2018	-16,524,794	0	-39,918,902	0	1,938,863	0	291,820,166	297,643,018
2019	-16,549,035	0	-40,078,791	555,519	1,940,036	0	295,380,307	301,246,999
2020	-16,447,522	0	-40,457,336	0	1,944,716	0	296,878,196	302,756,021
2021	-16,549,498	0	-40,315,441	754,240	1,950,987	0	297,925,138	303,824,864
2022	-16,527,842	0	-40,472,438	0	1,935,356	0	294,277,363	300,129,824
2023	-16,494,625	0	-40,466,359	0	1,942,707	0	299,538,546	305,413,234
2024	-16,549,882	0	-40,383,890	424,045	1,923,464	0	295,502,025	301,318,521
2025	-16,529,362	0	-40,472,760	0	1,936,478	0	298,152,121	304,007,971
2026	-16,539,392	0	-40,474,961	0	1,930,981	0	297,278,188	303,117,417
2027	-16,550,293	0	-40,451,998	109,423	1,943,174	0	299,890,216	305,766,313
2028	-16,550,439	0	-40,468,570	36,880	1,924,673	0	296,320,911	302,141,064
2029	-16,544,795	0	-40,475,229	0	1,936,633	0	298,505,878	304,362,198
2030	-16,550,217	0	-40,408,816	307,209	1,936,638	0	298,133,416	303,989,751
2031	-16,532,094	0	-40,472,432	0	1,952,270	0	300,784,368	306,687,974
2032	-16,550,246	0	-40,400,158	340,181	1,927,092	0	294,476,892	300,304,357
2033	-16,546,666	0	-40,475,431	0	1,955,429	0	298,489,369	304,402,526
2034	-16,550,814	0	-40,429,016	205,308	1,899,604	0	285,454,023	291,180,223
2035	-16,496,445	0	-40,465,818	0	1,997,489	0	304,450,115	310,490,460

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 (a & f)	Contractor Payments (7)	Total (8)
	Capital Costs (a)	Capital Cost Credits (b)	Operating Costs (c)	Application of Oroville Power Revenues to				
				Capital Costs (d)	Operating Costs (e)			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
1952	171,322	0	0	0	0	0	0	171,322
1953	312,190	0	0	0	0	0	0	312,190
1954	308,624	0	0	0	0	0	0	308,624
1955	194,645	0	0	0	0	0	0	194,645
1956	1,357,077	0	0	0	0	0	0	1,357,077
1957	6,210,709	0	0	0	0	0	0	6,210,709
1958	9,510,916	0	0	0	0	0	0	9,510,916
1959	11,390,586	0	0	0	0	0	0	11,390,586
1960	14,456,356	-4,850,000	0	0	0	0	0	9,606,356
1961	18,682,616	-431,527	0	0	0	0	0	18,251,089
1962	9,012,960	-479,280	0	0	0	0	0	8,533,680
1963	72,965,728	-478,743	-14,000	0	0	0	0	72,477,985
1964	62,490,522	-751,330	-14,000	0	0	107,780	0	61,832,972
1965	70,913,845	-763,541	-14,000	0	0	551,850	0	70,688,154
1966	125,205,400	-748,649	-14,000	0	0	1,081,023	0	125,523,774
1967	94,297,143	-812,145	-13,446	0	0	1,189,212	-241,150	94,419,614
1968	39,888,213	-431,574	1,293,465	-951,000	0	793,399	-583,631	40,008,872
1969	5,280,238	-259,015	2,870,059	-11,000,000	0	601,867	-827,578	-3,341,429
1970	4,130,524	-203,733	4,797,921	-14,650,000	-1,500,000	516,659	-2,160,886	-9,069,515
1971	3,877,007	-193,631	6,005,767	-14,650,000	-1,500,000	408,754	-2,696,792	-8,748,895
1972	4,569,025	-194,361	5,357,688	-14,650,000	-1,300,000	287,374	-7,206,052	-13,338,326
1973	3,985,415	-136,997	6,062,679	-14,650,000	-1,500,000	203,384	-7,456,998	-13,492,517
1974	6,659,999	-137,503	6,852,839	-17,950,000	-1,500,000	201,907	-10,683,514	-16,556,272
1975	8,084,449	-234,567	7,601,709	-14,650,000	-1,500,000	146,188	-12,440,851	-12,993,072
1976	5,870,538	-204,944	7,086,422	-14,650,000	-1,500,000	55,097	-15,299,760	-18,642,647
1977	21,282,929	-150,214	11,252,209	-14,650,000	-1,500,000	3,036	-15,869,924	368,036
1978	7,617,067	-64,566	15,986,395	-14,650,000	-1,500,000	4,546	-19,425,531	-12,032,089
1979	9,011,359	0	11,596,728	-14,650,000	-1,500,000	4,869	-23,095,855	-18,632,899
1980	10,352,862	0	16,286,034	-14,650,000	-1,500,000	5,179	-27,556,606	-17,062,531
1981	11,126,022	0	16,503,167	-14,650,000	-1,500,000	5,181	-43,335,911	-31,851,541
1982	18,957,643	0	20,858,547	-14,650,000	-1,500,000	5,599	-49,027,703	-27,355,914
1983	12,737,194	0	26,809,435	-34,705,000	-8,735,000	5,617	-34,186,736	-38,074,490
1984	11,161,490	0	29,265,866	-14,650,000	-9,348,000	4,817,662	-37,126,030	-15,879,012
1985	11,046,238	0	25,636,094	-14,650,000	-8,208,000	4,321,173	0	-18,145,505
1986	16,573,531	0	30,986,366	-14,650,000	-8,537,000	4,482,175	0	28,855,072
1987	4,753,193	0	27,933,487	-14,650,000	-8,473,000	4,504,998	0	14,068,678
1988	5,540,927	0	27,541,469	-14,650,000	-8,322,000	3,976,427	0	14,086,823
1989	5,069,479	0	28,321,922	-14,650,000	-8,240,000	2,919,190	0	13,420,591
1990	2,810,353	0	26,029,310	-15,435,000	-8,233,000	2,379,279	0	7,550,942
1991	0	0	27,262,698	-16,126,000	-8,237,000	1,383,452	0	4,283,150
1992	0	0	28,763,584	-16,126,000	-8,252,000	1,385,621	0	5,771,205
1993	0	0	27,617,925	-16,126,000	-8,252,000	1,385,856	0	4,625,781
1994	0	0	28,515,150	-16,126,000	-8,284,000	1,385,856	0	5,491,006
1995	0	0	28,197,529	-16,126,000	-8,325,000	1,385,856	0	5,132,385
1996	0	0	29,658,822	-16,126,000	-8,375,000	1,385,856	0	6,543,678
1997	0	0	29,447,072	-16,126,000	-8,431,000	1,385,856	0	6,275,928
1998	0	0	29,122,320	-16,126,000	-8,431,000	1,385,856	0	5,951,185
1999	0	0	30,032,351	-16,126,000	-8,509,000	1,385,856	0	6,783,207
2000	0	0	30,009,566	-16,126,000	-8,590,000	1,385,856	0	6,679,422
2001	0	0	29,754,178	-16,126,000	-8,801,000	1,281,322	0	6,108,500
2002	0	0	29,501,110	-16,126,000	-8,937,000	1,281,322	0	5,719,432
2003	0	0	31,056,469	-16,126,000	-9,542,000	1,281,322	0	6,669,791
2004	0	0	31,515,803	-16,126,000	-9,526,000	1,281,322	0	7,145,125
2005	0	0	31,038,795	-16,126,000	-9,412,000	1,281,322	0	6,782,117
2006	0	0	30,736,361	-16,126,000	-9,299,000	1,281,322	0	6,592,683
2007	0	0	31,385,749	-16,126,000	-9,301,000	1,281,322	0	7,240,071
2008	0	0	31,496,275	-16,126,000	-9,398,000	1,281,322	0	7,255,597
2009	0	0	31,536,833	-16,126,000	-9,437,000	1,281,322	0	7,255,155
2010	0	0	31,647,229	-16,126,000	-9,343,000	1,281,322	0	7,459,551
2011	0	0	31,260,661	-16,126,000	-9,252,000	0	0	5,882,661
2012	0	0	33,815,421	-16,126,000	-9,155,000	0	0	8,534,421
2013	0	0	29,624,313	-16,126,000	-9,155,000	0	0	4,343,313
2014	0	0	27,727,931	-16,126,000	-9,155,000	0	0	2,446,931
2015	0	0	31,240,905	-16,126,000	-9,155,000	0	0	5,959,905
2016	0	0	31,433,726	-16,126,000	-9,155,000	0	0	6,152,726
2017	0	0	29,246,758	-16,126,000	-9,155,000	0	0	3,965,758
2018	0	0	32,501,568	-16,126,000	-9,155,000	0	0	7,220,568
2019	0	0	34,502,570	-16,126,000	-9,052,000	0	0	9,324,570
2020	0	0	32,933,378	-16,126,000	-8,945,000	0	0	7,862,378
2021	0	0	28,933,069	-16,126,000	-7,928,000	0	0	4,879,069
2022	0	0	28,211,783	-16,126,000	-7,628,000	0	0	4,557,783
2023	0	0	30,489,951	-16,126,000	-7,443,000	0	0	6,920,951
2024	0	0	31,326,518	-16,126,000	-7,380,000	0	0	7,820,518
2025	0	0	27,744,213	-16,126,000	-7,380,000	0	0	4,238,213
2026	0	0	32,201,371	-16,126,000	-7,380,000	0	0	8,695,371
2027	0	0	29,219,497	-16,126,000	-7,032,000	0	0	6,061,497
2028	0	0	28,306,037	-16,126,000	-6,685,000	0	0	5,495,037
2029	0	0	26,376,823	-16,126,000	-6,337,000	0	0	3,913,823
2030	0	0	30,028,797	-16,126,000	-6,249,000	0	0	7,653,797
2031	0	0	27,287,726	-16,126,000	-6,051,000	0	0	5,110,726
2032	0	0	27,106,559	-16,126,000	-5,853,000	0	0	5,127,559
2033	0	0	28,905,919	-16,126,000	-5,744,000	0	0	7,035,919
2034	0	0	19,893,363	-16,126,000	-5,636,000	0	0	-1,868,637
2035	0	0	34,702,674	-16,126,000	-5,636,000	0	0	12,940,674
TOTAL	725,866,334	-11,528,320	1,706,183,491	-1,069,418,000	-455,974,000	60,248,566	-309,221,508	646,156,563

- 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 operating component of the Delta Water Charge.
- f) Under amendments of Articles 22(e) and 22(g), planning and pre-operating costs of Additional Project Conservation Facilities incurred through the previous year (1983) are reflected in the Delta Water Charge.

TABLE B-14: CAPITAL COSTS OF TRANSPORTATION

(in dollars)

Sheet 1 of 4

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1952	0	0	0	83	99	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	16,594	10,040	26,634	21,563	29,313	649,598	700,474	290	535	825
1958	35,437	14,574	50,011	67,764	67,955	733,415	869,134	721	1,330	2,051
1959	21,488	5,800	27,288	154,254	142,959	493,049	790,262	25,853	53,921	79,774
1960	10,049	7,878	17,927	296,492	274,637	1,018,662	1,589,791	37,106	77,941	115,047
1961	7,250	7,145	14,395	853,505	797,749	1,914,710	3,565,964	15,637	31,208	46,845
1962	-197	-923	-1,120	545,123	576,571	1,686,044	2,807,738	19,640	37,213	56,853
1963	1,559	871	2,430	657,427	1,077,895	3,243,842	4,979,164	73,105	136,569	209,674
1964	42,604	31,255	73,859	712,653	1,244,064	7,251,805	9,208,522	146,715	273,922	420,637
1965	206,465	54,589	261,054	360,783	468,128	3,414,466	4,243,377	261,459	486,434	747,893
1966	467,845	43,691	511,536	592,720	562,232	2,245,228	3,400,180	598,330	1,107,174	1,705,504
1967	1,574,452	35,425	1,609,877	797,000	772,107	2,401,877	3,970,984	947,517	1,751,645	2,699,162
1968	867,044	54,260	921,304	736,474	681,350	1,997,934	3,415,758	359,891	666,475	1,026,366
1969	81,172	52,534	133,706	269,700	258,156	764,957	1,292,813	84,315	157,239	241,554
1970	49,950	61,288	111,238	58,678	56,854	135,572	251,104	54,663	102,458	157,121
1971	29,314	31,501	60,815	12,086	14,386	84,090	110,562	37,649	71,704	109,353
1972	21,400	17,148	38,548	12,291	11,723	63,612	87,626	24,098	45,422	69,520
1973	58,790	28,594	87,384	10,494	10,525	39,380	60,399	27,479	51,710	79,189
1974	173,078	58,584	231,662	15,721	17,774	73,122	106,617	30,087	56,332	86,419
1975	99,218	81,840	181,058	16,730	15,572	41,395	73,697	25,396	50,761	76,157
1976	63,976	76,802	140,778	34,005	32,853	109,615	176,473	54,578	109,509	164,087
1977	68,858	68,952	137,810	46,231	43,246	133,381	222,858	130,070	243,133	373,203
1978	72,296	68,483	140,779	61,469	56,729	153,593	271,791	36,958	70,448	107,406
1979	226,355	242,753	469,108	45,492	42,504	110,696	198,692	52,640	99,723	152,363
1980	319,716	297,188	616,904	134,838	124,183	305,143	564,164	194,280	360,213	554,493
1981	226,041	304,296	530,337	-32,696	-29,217	-63,266	-125,179	-78,258	-142,198	-220,456
1982	583,156	694,085	1,277,241	16,118	15,266	41,972	73,356	-31,524	-57,391	-88,915
1983	1,311,824	1,221,691	2,533,515	130,371	120,823	310,697	561,891	27,559	51,957	79,516
1984	4,473,790	4,588,435	9,062,225	87,266	80,021	195,149	362,436	46,842	86,415	133,257
1985	11,703,481	13,437,897	25,141,378	44,568	42,209	115,152	201,929	32,998	60,877	93,875
1986	11,906,862	16,349,078	28,255,940	19,875	18,205	44,433	82,513	33,529	61,858	95,387
1987	1,240,295	1,040,705	2,281,000	46,996	42,966	102,403	192,365	53,776	99,215	152,991
1988	247,611	374,389	622,000	86,482	79,071	188,422	353,975	120,244	221,836	342,080
1989	8,360	12,640	21,000	76,611	70,046	166,916	313,573	165,024	304,450	469,474
1990	5,971	9,029	15,000	28,600	26,149	62,313	117,062	143,508	264,758	408,266
1991	0	0	0	0	0	0	0	75,698	139,655	215,353
1992	0	0	0	0	0	0	0	19,976	36,853	56,829
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	36,222,104	39,382,517	75,604,621	7,028,730	7,859,987	30,306,857	45,195,574	3,849,166	7,173,733	11,022,899

FACILITIES ALLOCATED TO EACH CONTRACTOR

(in dollars)

Sheet 2 of 4

Calendar Year	SAN JOAQUIN VALLEY AREA										
	Devil's Den Water District (a)	Dudley Ridge Water District	Empire West Side Irrigation District (b)	Future Contractor San Joaquin Valley	Kern County Water Agency			County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
					Municipal and Industrial	Municipal and Industrial (c)	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	654,900	856	1,152	34,450	799,597
1977	69,751	9,512	428	47,768	36,329	3,715	884,754	437	490	18,172	1,071,356
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	5,336	25,433	260,912	27,195	2,512,449	5,457	6,181	211,220	3,194,750
1981	6,862	26,084	-13,826	4,643	2,648	7,002	151,811	1,379	2,491	53,348	242,442
1982	16,617	79,689	4,133	11,172	135,728	20,865	1,211,989	4,222	2,495	163,454	1,650,364
1983	16,020	55,642	2,883	10,832	116,243	14,670	1,127,599	2,946	1,529	114,054	1,462,418
1984	17,508	77,349	4,016	11,798	216,087	20,217	2,164,062	4,104	2,328	158,714	2,676,183
1985	8,541	36,947	1,915	5,762	62,323	9,680	666,050	1,959	2,260	75,774	871,211
1986	8,191	35,687	1,850	5,525	57,795	9,341	637,468	1,892	3,044	73,210	834,003
1987	22,241	100,199	5,203	14,993	161,085	26,157	1,773,649	5,320	8,137	205,629	2,322,613
1988	69,384	313,305	16,269	46,751	503,043	81,755	5,540,016	16,632	15,140	642,998	7,245,293
1989	101,159	457,283	23,745	68,148	733,803	119,304	8,082,413	24,274	13,411	938,514	10,562,054
1990	85,911	380,362	20,167	57,868	623,133	101,323	6,864,241	20,611	5,007	797,064	8,963,687
1991	53,708	242,786	12,607	36,171	389,517	63,343	4,291,188	12,885	0	498,287	5,600,492
1992	14,173	64,068	3,327	9,545	102,789	16,716	1,132,396	3,400	0	131,493	1,477,907
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	2,351,161	5,587,008	231,543	1,606,782	12,605,960	1,621,674	137,856,290	284,603	208,593	11,226,248	173,579,862

- a) Costs from Table B-10 allocated to Devil's Den are reduced herein by \$14,088 in 1978 in accordance with a letter of agreement with the District.
- b) Costs from Table B-10 allocated to Empire are reduced by \$31,588 in 1978, \$12,129 in 1980, and \$15,173 in 1981 in accordance with letters of agreement with the District.
- c) 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)

Sheet 3 of 4

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	13,675	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	238,303	192,620	136,888	37,269	225,759	4,259	278,095	31,098	962,898	256,073
1977	200,164	236,962	91,508	25,889	150,918	3,764	183,867	26,911	592,003	155,691
1978	189,098	332,925	55,002	16,328	90,714	3,345	108,917	24,461	324,632	83,016
1979	377,210	726,721	85,802	22,804	141,503	6,291	175,157	46,860	421,435	113,305
1980	1,926,277	1,376,961	438,139	117,348	722,578	33,417	893,097	248,278	2,114,720	568,330
1981	-143,488	469,299	-45,086	-5,522	-74,349	-2,320	-100,792	-17,675	-84,750	-27,294
1982	1,875,398	676,639	358,430	105,551	591,117	31,534	726,619	236,461	1,889,500	516,909
1983	2,360,756	411,914	457,650	152,410	754,752	39,660	912,288	297,257	2,769,579	758,573
1984	2,441,023	474,217	488,031	146,315	804,853	41,151	985,914	308,814	2,597,956	706,878
1985	793,643	66,691	161,315	48,635	266,039	13,323	325,375	99,951	861,441	234,738
1986	157,893	104,048	32,395	8,649	53,429	2,625	66,523	19,685	153,761	41,889
1987	173,530	156,285	31,389	8,001	51,769	2,911	65,291	21,816	141,841	38,920
1988	539,872	164,043	97,175	24,592	160,259	9,040	202,488	67,827	435,225	119,755
1989	786,478	238,355	141,392	35,758	233,183	13,161	294,660	98,776	632,362	174,045
1990	667,832	202,397	120,066	30,364	198,012	11,176	250,209	83,875	536,981	147,792
1991	417,443	126,514	75,051	18,980	123,774	6,986	156,398	52,427	335,659	92,382
1992	110,158	33,385	19,805	5,009	32,663	1,844	41,272	13,835	88,578	24,379
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	47,726,780	22,986,181	12,617,761	3,796,802	20,809,378	875,523	24,956,526	6,383,753	77,514,106	20,096,998

FACILITIES ALLOCATED TO EACH CONTRACTOR

(in dollars)

Sheet 4 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				FUTURE CONTRACTOR		GRAND TOTAL
	San Geronio Pass Water Agency	The Metropolitan Water District of Southern California(d)	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC & WCD	Total	South Bay		
									(39)		
	(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	43,873,380	65,840	50,854,343	0	0	9	9	14,222	51,933,630	
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	13,585,697	85,113	16,193,023	0	0	51	51	18,294	17,492,303	
1977	96,611	11,862,579	112,068	13,738,935	0	0	28	28	23,044	15,567,234	
1978	51,503	13,944,090	157,519	15,381,550	0	0	38	38	25,513	16,260,153	
1979	69,859	27,978,699	346,871	30,512,517	0	0	23	23	26,804	31,952,968	
1980	350,277	60,734,364	653,183	70,176,969	0	0	26	26	57,222	75,164,528	
1981	-16,387	16,010,754	224,694	16,187,084	0	0	34	34	-4,314	16,609,948	
1982	317,797	33,926,859	324,016	41,576,830	0	0	11	11	19,967	44,508,854	
1983	466,458	29,122,041	195,436	38,698,774	0	0	19	19	64,958	43,401,091	
1984	434,620	31,617,124	227,167	41,274,063	0	0	0	0	52,728	53,560,892	
1985	144,372	7,371,481	31,890	10,418,894	0	0	0	0	21,389	36,748,676	
1986	25,745	4,471,679	50,054	5,188,375	0	0	0	0	7,764	34,463,982	
1987	23,857	6,280,728	71,361	7,067,699	0	0	0	0	17,017	12,033,685	
1988	73,365	8,093,528	79,028	10,066,197	0	0	0	0	31,024	18,660,569	
1989	106,620	11,756,646	114,871	14,626,307	0	0	0	0	27,483	26,019,891	
1990	90,538	9,983,114	97,541	12,419,897	0	0	0	0	10,260	21,934,172	
1991	56,594	6,240,177	60,970	7,763,355	0	0	0	0	0	13,579,200	
1992	14,934	1,646,712	16,090	2,048,664	0	0	0	0	0	3,583,400	
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	12,472,334	1,280,958,633	10,347,243	1,541,542,018	0	0	340,632	340,632	7,735,929	1,855,021,535	

d) Costs from Table B-10, allocated to MWDSC, are reduced herein by \$16,428,661 in 1972 under provisions of Contract Amendment No. 7.

TABLE B-15: CAPITAL COST COMPONENT OF

(in dollars)

Sheet 1 of 4

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	107,280	104,754	374,119	586,153	0	0	0
1964	0	0	0	126,943	160,751	542,636	830,330	9,104	18,026	27,130
1965	0	0	0	160,304	225,380	919,368	1,305,052	14,995	29,064	44,059
1966	19,499	0	19,499	177,193	249,699	1,096,750	1,523,642	24,480	46,774	71,254
1967	43,804	0	43,804	204,940	278,907	1,213,390	1,697,237	43,170	81,429	124,599
1968	125,597	0	125,597	242,249	319,018	1,338,167	1,899,434	57,775	108,558	166,333
1969	170,640	0	170,640	276,725	354,414	1,441,960	2,073,099	61,617	115,777	177,394
1970	174,856	0	174,856	289,350	367,826	1,481,700	2,138,876	63,672	119,657	183,329
1971	177,451	0	177,451	292,097	370,779	1,488,743	2,151,619	65,035	122,255	187,290
1972	178,974	0	178,974	337,923	371,527	1,493,111	2,202,561	66,089	124,315	190,404
1973	180,086	28,577	208,663	338,561	372,136	1,496,416	2,207,113	66,620	125,346	191,966
1974	183,140	30,062	213,202	339,106	372,682	1,498,462	2,210,250	67,046	126,185	193,231
1975	192,132	33,105	225,237	339,923	373,606	1,502,260	2,215,789	67,562	127,180	194,742
1976	197,286	37,357	234,643	340,792	374,415	1,504,411	2,219,618	177,910	330,961	508,871
1977	200,609	41,347	241,956	342,559	376,121	1,510,105	2,228,785	180,745	336,650	517,395
1978	204,187	44,929	249,116	344,961	378,368	1,517,034	2,240,363	187,503	349,281	536,784
1979	207,942	48,487	256,429	348,154	381,315	1,525,014	2,254,483	189,423	352,941	542,364
1980	219,702	61,098	280,800	350,517	383,523	1,530,764	2,264,804	192,157	358,121	550,278
1981	236,311	76,537	312,848	357,522	389,975	1,546,616	2,294,113	202,250	376,835	579,085
1982	248,054	92,345	340,399	355,823	388,457	1,543,330	2,287,610	198,185	369,447	567,632
1983	278,349	128,403	406,752	356,661	389,250	1,545,510	2,291,421	196,547	366,466	563,013
1984	346,498	191,870	538,368	363,434	395,527	1,561,651	2,320,612	197,979	369,165	567,144
1985	578,912	430,239	1,009,151	367,967	399,684	1,571,789	2,339,440	200,412	373,654	574,066
1986	1,186,908	1,128,339	2,315,247	370,282	401,876	1,577,771	2,349,929	202,126	376,817	578,943
1987	1,808,703	1,982,112	3,790,815	371,320	402,827	1,580,091	2,354,238	203,877	380,047	583,924
1988	1,873,829	2,036,759	3,910,588	373,788	405,083	1,585,469	2,364,340	206,701	385,257	591,958
1989	1,886,906	2,056,531	3,943,437	378,355	409,259	1,595,420	2,383,034	213,051	396,973	610,024
1990	1,887,351	2,057,203	3,944,554	382,426	412,981	1,604,289	2,399,696	221,820	413,150	634,970
1991	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	229,495	427,309	656,804
1992	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	233,570	434,828	668,398
1993	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	234,653	436,826	671,479
1994	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	234,653	436,826	671,479
1995	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	234,653	436,826	671,479
1996	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	234,653	436,826	671,479
1997	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	234,653	436,826	671,479
1998	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	234,653	436,826	671,479
1999	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	234,653	436,826	671,479
2000	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	234,653	436,826	671,479
2001	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	234,653	436,826	671,479
2002	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	234,653	436,826	671,479
2003	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	234,653	436,826	671,479
2004	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	234,653	436,826	671,479
2005	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	234,653	436,826	671,479
2006	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	234,653	436,826	671,479
2007	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	234,653	436,826	671,479
2008	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	234,653	436,826	671,479
2009	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	234,653	436,826	671,479
2010	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	234,653	436,826	671,479
2011	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	234,653	436,826	671,479
2012	1,887,670	2,057,686	3,945,356	383,956	414,380	1,607,621	2,405,957	234,653	436,826	671,479
2013	1,887,670	2,057,686	3,945,356	270,818	309,625	1,233,503	1,813,946	234,653	436,826	671,479
2014	1,887,670	2,057,686	3,945,356	234,899	253,629	1,064,985	1,553,513	225,550	418,800	644,350
2015	1,887,670	2,057,686	3,945,356	196,254	189,000	688,253	1,073,507	219,658	407,762	627,420
2016	1,868,171	2,057,686	3,925,857	176,829	164,680	510,871	852,380	210,174	390,053	600,227
2017	1,843,866	2,057,686	3,901,552	145,132	135,472	394,232	674,836	191,483	355,398	546,881
2018	1,762,073	2,057,686	3,819,759	102,782	95,361	269,454	467,597	176,879	328,269	505,148
2019	1,717,030	2,057,686	3,774,716	63,887	59,965	165,661	289,513	173,037	321,049	494,086
2020	1,712,814	2,057,686	3,770,500	49,725	46,554	125,922	222,201	170,981	317,170	488,151
2021	1,710,219	2,057,686	3,767,905	46,661	43,600	118,879	209,140	169,619	314,572	484,191
2022	1,708,696	2,057,686	3,766,382	46,033	42,853	114,510	203,396	168,565	312,511	481,076
2023	1,707,584	2,029,109	3,736,693	45,394	42,244	111,206	198,844	168,033	311,481	479,514
2024	1,704,530	2,027,624	3,732,154	44,849	41,697	109,160	195,706	167,607	310,641	478,248
2025	1,695,538	2,024,580	3,720,118	44,032	40,774	105,361	190,167	167,091	309,647	476,738
2026	1,690,384	2,020,329	3,710,713	43,163	39,965	103,211	186,339	166,743	308,865	475,598
2027	1,687,061	2,016,339	3,703,400	41,397	38,258	97,516	177,171	165,908	307,976	474,884
2028	1,683,483	2,012,757	3,696,240	38,995	36,011	90,587	165,593	165,151	307,145	474,296
2029	1,679,728	2,009,199	3,688,927	35,802	33,064	82,608	151,474	164,311	306,314	473,725
2030	1,667,968	1,996,588	3,664,556	33,438	30,856	76,857	141,151	163,479	305,483	472,962
2031	1,651,359	1,981,149	3,632,508	26,434	24,405	61,005	111,844	162,644	304,652	471,896
2032	1,639,616	1,965,341	3,604,957	28,132	25,923	64,292	118,347	161,813	303,821	470,834
2033	1,609,321	1,929,283	3,538,604	27,295	25,130	62,111	114,536	161,000	303,010	470,010
2034	1,541,172	1,865,816	3,406,988	20,522	18,353	45,970	85,345	160,187	302,199	469,186
2035	1,308,758	1,627,447	2,936,205	15,989	14,696	35,832	66,517	159,374	301,388	468,362
TOTAL	93,588,847	101,856,813	195,445,660	18,862,649	20,679,115	80,285,994	119,827,758	11,600,730	21,597,907	33,198,637

- a) Unadjusted for prior overpayments or underpayments of charges.
- b) Determined at the current Project Interest Rate of 4.736 percent per annum.

TRANSPORTATION CHARGE FOR EACH CONTRACTOR^{(a) (b)}

(in dollars)

Sheet 2 of 4

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	Municipal and Industrial ^(c)	Agricultural				
(11)	(12)	(13)	(14)	(15)	(15A)	(16)	(17)	(18)	(19)	(20)	
1963	0	0	0	0	0	0	0	0	0	0	
1964	0	0	0	2,783	0	0	0	0	0	2,783	
1965	0	0	0	6,154	65,708	9,484	0	0	0	81,346	
1966	0	0	0	12,284	122,852	17,432	0	0	0	152,568	
1967	0	0	0	26,788	238,213	35,064	0	0	0	300,065	
1968	34,689	78,539	3,307	49,935	342,904	49,985	429,513	8,691	4,409	66,312	
1969	46,876	78,677	9,921	58,573	400,426	53,630	882,069	9,209	4,793	250,905	
1970	53,439	86,228	9,921	60,416	432,559	55,044	1,072,862	9,464	4,984	185,675	
1971	62,814	98,311	9,921	61,542	454,178	55,851	1,424,952	9,608	5,368	197,584	
1972	72,190	109,845	9,921	62,170	464,113	56,220	2,133,741	9,677	10,287	609,533	
1973	81,565	120,830	9,921	62,604	468,434	56,398	2,460,945	9,708	5,943	235,758	
1974	90,940	183,387	9,921	63,134	470,517	56,501	2,755,890	9,726	6,654	391,319	
1975	100,316	222,739	9,921	63,708	472,884	56,644	3,300,801	9,751	6,855	466,937	
1976	109,691	169,826	9,921	63,981	474,782	56,837	3,558,232	9,787	7,743	334,036	
1977	119,066	166,965	9,921	64,636	477,545	57,129	3,898,801	9,831	7,093	319,382	
1978	119,066	178,498	9,921	67,118	479,432	57,322	4,333,845	9,854	7,477	342,659	
1979	119,066	221,694	9,921	67,302	480,875	57,496	4,758,749	9,882	7,668	385,646	
1980	119,066	225,183	9,921	67,557	483,254	57,764	5,192,871	9,936	10,927	388,131	
1981	119,066	225,183	9,921	68,878	496,808	59,177	5,683,217	10,219	8,243	411,408	
1982	119,066	225,183	9,921	69,119	496,946	59,541	6,135,773	10,291	8,627	434,144	
1983	119,066	235,618	9,921	69,699	503,997	60,625	6,651,005	10,510	8,818	51,686	
1984	119,066	247,701	9,921	70,262	509,036	61,387	6,977,287	10,663	9,202	338,930	
1985	119,066	259,235	9,921	70,875	521,261	62,437	7,424,843	10,877	9,394	502,892	
1986	119,066	270,768	9,921	71,174	524,499	62,940	7,878,712	10,978	9,777	526,169	
1987	119,066	282,302	9,921	71,463	527,517	63,428	8,335,877	11,077	9,969	548,905	
1988	119,066	293,836	9,921	72,250	535,976	64,801	8,762,625	11,357	10,352	571,640	
1989	119,066	305,370	9,921	74,719	562,543	69,119	9,070,473	12,235	10,736	594,917	
1990	119,066	316,903	9,921	78,340	601,534	75,459	9,390,304	13,525	10,927	641,471	
1991	119,066	316,903	9,921	81,435	634,858	80,877	9,390,304	14,627	10,927	641,471	
1992	119,066	316,903	9,921	83,382	655,830	84,288	9,390,304	15,321	10,927	641,471	
1993	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
1994	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
1995	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
1996	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
1997	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
1998	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
1999	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
2000	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
2001	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
2002	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
2003	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
2004	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
2005	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
2006	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
2007	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
2008	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
2009	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
2010	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
2011	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
2012	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
2013	119,066	316,903	9,921	83,900	661,404	85,194	9,390,304	15,505	10,927	641,471	
2014	119,066	316,903	9,921	81,117	661,404	85,194	9,390,304	15,505	10,927	641,471	
2015	119,066	316,903	9,921	77,746	595,696	75,710	9,390,304	15,505	10,927	641,471	
2016	119,066	316,903	9,921	71,616	538,552	67,762	9,390,304	15,505	10,927	641,471	
2017	119,066	316,903	9,921	57,112	423,192	50,130	9,390,304	15,505	10,927	641,471	
2018	119,066	316,903	9,921	39,965	318,500	35,209	9,390,304	6,814	10,927	641,471	
2019	119,066	316,903	9,921	25,327	260,978	31,564	9,390,304	6,296	10,927	641,471	
2020	119,066	316,903	9,921	23,485	228,845	30,150	9,390,304	6,041	10,927	641,471	
2021	119,066	316,903	9,921	22,358	207,226	29,343	9,390,304	5,897	10,927	641,471	
2022	119,066	316,903	9,921	21,730	197,291	28,974	9,390,304	5,828	10,927	641,471	
2023	119,066	316,903	9,921	21,296	192,970	28,796	9,390,304	5,779	10,927	641,471	
2024	119,066	316,903	9,921	20,766	190,887	28,693	9,390,304	5,779	10,927	641,471	
2025	119,066	316,903	9,921	20,192	188,520	28,550	9,390,304	5,754	10,927	641,471	
2026	119,066	316,903	9,921	19,919	186,622	28,357	9,390,304	5,718	10,927	641,471	
2027	119,066	316,903	9,921	19,264	183,859	28,065	9,390,304	5,674	10,927	641,471	
2028	119,066	316,903	9,921	16,782	181,972	27,872	9,390,304	5,651	10,927	641,471	
2029	119,066	316,903	9,921	16,598	180,529	27,698	9,390,304	5,623	10,927	641,471	
2030	119,066	316,903	9,921	16,344	178,150	27,430	9,390,304	5,569	10,927	641,471	
2031	119,066	316,903	9,921	15,022	164,596	26,017	9,390,304	5,286	10,927	641,471	
2032	119,066	316,903	9,921	14,781	164,458	25,653	9,390,304	5,214	10,927	641,471	
2033	119,066	316,903	9,921	14,201	157,407	24,569	9,390,304	4,995	10,927	641,471	
2034	119,066	316,903	9,921	13,638	151,368	23,807	9,390,304	4,842	10,927	641,471	
2035	119,066	316,903	9,921	13,025	140,143	22,757	9,390,304	4,628	10,927	641,471	
TOTAL	7,677,414	18,853,456	668,014	4,140,465	32,483,130	4,164,254	535,082,067	755,835	677,961	37,662,234	642,164,830

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)

Sheet 3 of 4

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	34,157	0	0	0	0	0	0	0	52,977	0
1964	64,333	20,594	14,772	4,474	38,055	1,171	29,119	8,403	84,712	35,826
1965	121,286	39,055	25,671	7,359	41,688	2,131	51,474	15,572	138,097	36,138
1966	220,607	73,829	45,735	12,758	74,778	3,839	92,432	28,303	237,641	62,825
1967	426,755	151,813	88,027	23,990	144,526	7,447	179,061	55,227	442,842	118,109
1968	686,029	298,491	144,134	39,405	237,057	12,047	292,707	89,256	745,880	198,809
1969	994,830	453,377	214,490	58,577	353,088	17,641	435,330	130,110	1,161,416	309,323
1970	1,298,455	578,554	302,505	86,674	498,245	23,962	604,931	175,213	1,728,496	453,459
1971	1,560,897	713,949	409,221	122,842	674,245	29,505	806,468	213,612	2,445,982	633,273
1972	1,695,335	804,708	464,984	140,456	766,210	32,025	915,100	231,709	2,869,137	736,624
1973	1,746,106	820,948	482,255	145,249	794,694	33,022	949,907	238,714	3,009,105	772,927
1974	1,764,595	861,977	490,507	149,524	808,305	33,351	962,305	241,119	3,100,629	793,911
1975	1,788,143	874,168	503,989	153,378	830,539	33,776	989,274	244,204	3,184,730	816,059
1976	1,801,358	884,329	514,057	156,124	847,143	34,034	1,009,663	245,976	3,264,444	837,261
1977	1,813,738	894,335	521,168	158,061	858,871	34,255	1,024,110	247,592	3,314,466	850,564
1978	1,824,136	906,646	525,922	159,406	866,712	34,451	1,033,662	248,990	3,345,221	858,652
1979	1,833,960	923,941	528,780	160,254	871,424	34,624	1,039,320	250,260	3,362,086	862,965
1980	1,853,556	961,694	533,237	161,438	878,775	34,951	1,048,419	252,695	3,383,979	868,851
1981	1,953,626	1,033,228	555,998	167,535	916,313	36,687	1,094,816	265,593	3,493,839	898,376
1982	1,946,172	1,057,608	553,656	167,248	912,451	36,567	1,089,580	264,675	3,489,436	896,958
1983	2,043,599	1,092,759	572,277	172,731	943,159	38,205	1,127,328	276,959	3,587,596	923,811
1984	2,166,241	1,114,158	596,052	180,649	982,369	40,265	1,174,721	292,401	3,731,476	963,219
1985	2,293,052	1,138,794	621,405	188,250	1,024,181	42,403	1,225,939	308,444	3,866,440	999,942
1986	2,334,282	1,142,258	629,785	190,777	1,038,002	43,095	1,242,842	313,637	3,911,192	1,012,136
1987	2,342,527	1,147,692	631,477	191,228	1,040,792	43,232	1,246,316	314,665	3,919,221	1,014,324
1988	2,351,639	1,155,898	633,125	191,648	1,043,510	43,385	1,249,745	315,810	3,926,669	1,016,368
1989	2,380,151	1,164,562	638,257	192,947	1,051,974	43,862	1,260,439	319,392	3,949,655	1,022,692
1990	2,421,942	1,177,227	645,770	194,847	1,064,364	44,562	1,276,096	324,641	3,983,256	1,031,940
1991	2,457,656	1,188,051	652,191	196,471	1,074,954	45,159	1,289,477	329,126	4,011,973	1,039,844
1992	2,480,132	1,194,862	656,232	197,493	1,081,618	45,536	1,297,897	331,949	4,030,045	1,044,818
1993	2,486,105	1,196,673	657,306	197,764	1,083,389	45,636	1,300,135	332,699	4,034,848	1,046,140
1994	2,486,105	1,196,673	657,306	197,764	1,083,389	45,636	1,300,135	332,699	4,034,848	1,046,140
1995	2,486,105	1,196,673	657,306	197,764	1,083,389	45,636	1,300,135	332,699	4,034,848	1,046,140
1996	2,486,105	1,196,673	657,306	197,764	1,083,389	45,636	1,300,135	332,699	4,034,848	1,046,140
1997	2,486,105	1,196,673	657,306	197,764	1,083,389	45,636	1,300,135	332,699	4,034,848	1,046,140
1998	2,486,105	1,196,673	657,306	197,764	1,083,389	45,636	1,300,135	332,699	4,034,848	1,046,140
1999	2,486,105	1,196,673	657,306	197,764	1,083,389	45,636	1,300,135	332,699	4,034,848	1,046,140
2000	2,486,105	1,196,673	657,306	197,764	1,083,389	45,636	1,300,135	332,699	4,034,848	1,046,140
2001	2,486,105	1,196,673	657,306	197,764	1,083,389	45,636	1,300,135	332,699	4,034,848	1,046,140
2002	2,486,105	1,196,673	657,306	197,764	1,083,389	45,636	1,300,135	332,699	4,034,848	1,046,140
2003	2,486,105	1,196,673	657,306	197,764	1,083,389	45,636	1,300,135	332,699	4,034,848	1,046,140
2004	2,486,105	1,196,673	657,306	197,764	1,083,389	45,636	1,300,135	332,699	4,034,848	1,046,140
2005	2,486,105	1,196,673	657,306	197,764	1,083,389	45,636	1,300,135	332,699	4,034,848	1,046,140
2006	2,486,105	1,196,673	657,306	197,764	1,083,389	45,636	1,300,135	332,699	4,034,848	1,046,140
2007	2,486,105	1,196,673	657,306	197,764	1,083,389	45,636	1,300,135	332,699	4,034,848	1,046,140
2008	2,486,105	1,196,673	657,306	197,764	1,083,389	45,636	1,300,135	332,699	4,034,848	1,046,140
2009	2,486,105	1,196,673	657,306	197,764	1,083,389	45,636	1,300,135	332,699	4,034,848	1,046,140
2010	2,486,105	1,196,673	657,306	197,764	1,083,389	45,636	1,300,135	332,699	4,034,848	1,046,140
2011	2,486,105	1,196,673	657,306	197,764	1,083,389	45,636	1,300,135	332,699	4,034,848	1,046,140
2012	2,486,105	1,196,673	657,306	197,764	1,083,389	45,636	1,300,135	332,699	4,034,848	1,046,140
2013	2,451,948	1,196,673	657,306	197,764	1,069,695	45,636	1,300,135	332,699	3,981,871	1,032,721
2014	2,421,772	1,176,079	642,534	193,291	1,059,677	44,465	1,271,016	324,297	3,950,136	1,024,368
2015	2,364,820	1,157,618	631,635	190,406	1,041,701	43,505	1,248,661	317,127	3,896,751	1,010,002
2016	2,265,498	1,122,844	611,570	185,007	1,008,611	41,797	1,207,703	304,396	3,797,207	983,315
2017	2,059,350	1,044,860	569,279	173,774	938,863	38,189	1,121,074	277,473	3,592,006	928,031
2018	1,800,076	898,181	513,172	158,360	846,332	33,589	1,007,428	243,443	3,288,969	847,331
2019	1,491,275	743,296	442,816	139,188	730,301	27,995	864,805	202,589	2,873,432	736,816
2020	1,187,650	618,119	354,801	111,090	585,144	21,674	695,204	157,486	2,306,352	592,681
2021	925,208	482,724	248,085	74,922	409,144	16,131	493,667	119,087	1,588,866	412,866
2022	790,771	391,965	192,322	57,308	317,179	13,611	385,035	100,990	1,165,711	309,516
2023	739,999	375,725	175,051	52,516	288,695	12,613	350,229	93,985	1,025,743	273,212
2024	721,510	334,696	166,798	48,241	275,084	12,285	337,830	91,580	934,219	252,229
2025	697,962	322,505	153,317	44,386	252,850	11,860	310,861	88,496	850,118	230,081
2026	684,747	312,344	143,249	41,640	236,246	11,602	290,473	86,723	770,404	208,879
2027	672,367	302,337	136,137	39,704	224,518	11,381	276,025	85,108	720,382	195,576
2028	661,969	290,027	131,384	38,359	216,677	11,185	266,474	83,710	689,627	187,488
2029	652,145	272,732	128,526	37,511	211,965	11,011	260,815	82,439	672,763	183,175
2030	632,549	234,978	124,069	36,326	204,614	10,684	251,716	80,005	650,869	177,289
2031	532,479	163,445	101,307	30,230	167,076	8,948	205,319	67,106	541,009	147,764
2032	539,933	139,065	103,650	30,517	170,938	9,069	210,556	68,025	545,412	149,182
2033	442,506	103,914	85,029	25,033	140,230	7,431	172,808	55,741	447,252	122,328
2034	319,864	82,515	61,254	17,116	101,020	5,370	125,414	40,298	303,372	82,920
2035	193,053	57,879	35,901	9,515	59,208	3,233	74,196	24,255	168,408	46,198
TOTAL	123,670,846	59,627,486	32,750,991	9,859,277	53,981,590	2,271,174	64,768,622	16,555,285	201,230,477	52,166,772

TRANSPORTATION CHARGE FOR EACH CONTRACTOR ^{(a) (b)}

(in dollars)

Sheet 4 of 4

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)	
1963	0	708,170	0	795,304	0	0	0	0	47,263	1,428,720
1964	22,255	1,290,199	9,612	1,623,525	0	0	0	0	85,283	2,569,051
1965	22,357	2,230,794	18,191	2,749,813	0	0	413	413	142,104	4,322,787
1966	38,804	3,989,021	34,208	4,914,780	0	0	576	576	166,551	6,848,870
1967	72,845	7,868,519	69,740	9,648,901	0	0	573	573	208,843	12,024,022
1968	122,736	14,681,724	136,524	17,684,799	0	0	576	576	287,354	21,232,377
1969	191,181	22,379,507	207,623	26,906,493	0	0	3,255	3,255	352,275	31,479,235
1970	281,048	29,684,603	264,283	35,980,428	0	0	15,423	15,423	375,785	40,839,289
1971	393,400	38,128,642	324,228	46,456,264	0	0	16,266	16,266	379,856	51,748,875
1972	457,765	45,102,581	362,809	54,579,443	0	0	17,680	17,680	380,703	61,087,462
1973	480,366	47,381,806	366,230	57,221,329	0	0	17,680	17,680	381,442	63,740,299
1974	493,712	49,450,745	381,356	59,532,036	0	0	17,681	17,681	381,946	66,586,335
1975	507,458	50,433,616	385,851	60,745,185	0	0	17,684	17,684	383,775	68,492,968
1976	520,652	51,304,927	390,238	61,810,206	0	0	17,685	17,685	384,214	69,970,073
1977	528,909	52,010,705	394,659	62,651,433	0	0	17,687	17,687	385,165	71,172,790
1978	533,928	52,626,967	400,481	63,365,174	0	0	17,689	17,689	386,362	72,400,680
1979	536,604	53,351,363	408,664	64,164,245	0	0	17,691	17,691	387,687	73,731,198
1980	540,233	54,804,858	426,684	65,749,370	0	0	17,692	17,692	389,080	75,816,634
1981	558,430	57,960,013	460,617	69,395,071	0	0	17,693	17,693	392,052	80,082,982
1982	557,579	58,791,772	472,290	70,235,992	0	0	17,695	17,695	391,828	81,408,767
1983	574,088	60,554,275	489,123	72,395,910	0	0	17,696	17,696	392,865	83,788,602
1984	598,321	62,067,167	499,276	74,406,315	0	0	17,697	17,697	396,240	86,600,831
1985	620,899	63,709,679	511,077	76,550,505	0	0	17,697	17,697	398,979	89,885,639
1986	628,399	64,092,628	512,734	77,091,767	0	0	17,697	17,697	400,090	92,237,677
1987	629,744	64,326,145	515,348	77,362,711	0	0	17,697	17,697	400,496	94,489,406
1988	630,997	64,655,939	519,095	77,733,828	0	0	17,697	17,697	401,389	95,471,624
1989	634,871	65,083,385	523,269	78,265,456	0	0	17,697	17,697	403,028	96,451,775
1990	640,537	65,708,085	529,372	79,402,639	0	0	17,697	17,697	404,488	97,701,494
1991	645,378	66,241,962	534,589	79,706,831	0	0	17,697	17,697	405,037	98,438,071
1992	648,426	66,577,940	537,871	80,124,819	0	0	17,697	17,697	405,037	98,894,677
1993	649,235	66,667,236	538,744	80,235,910	0	0	17,697	17,697	405,037	99,016,031
1994	649,235	66,667,236	538,744	80,235,910	0	0	17,697	17,697	405,037	99,016,031
1995	649,235	66,667,236	538,744	80,235,910	0	0	17,697	17,697	405,037	99,016,031
1996	649,235	66,667,236	538,744	80,235,910	0	0	17,697	17,697	405,037	99,016,031
1997	649,235	66,667,236	538,744	80,235,910	0	0	17,697	17,697	405,037	99,016,031
1998	649,235	66,667,236	538,744	80,235,910	0	0	17,697	17,697	405,037	99,016,031
1999	649,235	66,667,236	538,744	80,235,910	0	0	17,697	17,697	405,037	99,016,031
2000	649,235	66,667,236	538,744	80,235,910	0	0	17,697	17,697	405,037	99,016,031
2001	649,235	66,667,236	538,744	80,235,910	0	0	17,697	17,697	405,037	99,016,031
2002	649,235	66,667,236	538,744	80,235,910	0	0	17,697	17,697	405,037	99,016,031
2003	649,235	66,667,236	538,744	80,235,910	0	0	17,697	17,697	405,037	99,016,031
2004	649,235	66,667,236	538,744	80,235,910	0	0	17,697	17,697	405,037	99,016,031
2005	649,235	66,667,236	538,744	80,235,910	0	0	17,697	17,697	405,037	99,016,031
2006	649,235	66,667,236	538,744	80,235,910	0	0	17,697	17,697	405,037	99,016,031
2007	649,235	66,667,236	538,744	80,235,910	0	0	17,697	17,697	405,037	99,016,031
2008	649,235	66,667,236	538,744	80,235,910	0	0	17,697	17,697	405,037	99,016,031
2009	649,235	66,667,236	538,744	80,235,910	0	0	17,697	17,697	405,037	99,016,031
2010	649,235	66,667,236	538,744	80,235,910	0	0	17,697	17,697	405,037	99,016,031
2011	649,235	66,667,236	538,744	80,235,910	0	0	17,697	17,697	405,037	99,016,031
2012	649,235	66,667,236	538,744	80,235,910	0	0	17,697	17,697	405,037	99,016,031
2013	640,886	65,959,066	538,744	79,405,144	0	0	17,697	17,697	357,774	97,545,991
2014	635,724	65,377,037	529,131	78,649,527	0	0	17,697	17,697	319,754	96,462,009
2015	626,879	64,436,442	520,553	77,486,100	0	0	17,284	17,284	262,933	94,665,849
2016	610,431	62,678,215	504,536	75,321,130	0	0	17,121	17,121	238,486	92,137,228
2017	576,390	58,798,716	469,004	70,587,009	0	0	17,123	17,123	196,193	86,958,125
2018	526,500	51,985,512	402,219	62,551,112	0	0	17,121	17,121	117,683	78,361,500
2019	458,054	44,287,728	331,121	53,329,416	0	0	14,442	14,442	51,762	68,766,692
2020	368,187	36,982,633	274,460	44,255,481	0	0	2,273	2,273	29,252	59,544,971
2021	255,835	28,538,594	214,516	33,779,645	0	0	1,430	1,430	25,181	49,020,908
2022	191,470	21,564,655	175,934	25,656,467	0	0	17	17	24,334	40,874,087
2023	168,870	19,285,430	172,514	23,014,582	0	0	17	17	23,595	38,190,696
2024	155,523	17,216,491	157,388	20,703,874	0	0	15	15	23,091	35,867,805
2025	141,777	16,233,620	152,892	19,490,725	0	0	13	13	21,262	34,630,631
2026	128,583	15,362,309	148,506	18,425,705	0	0	12	12	20,823	33,235,408
2027	120,326	14,656,531	144,084	17,584,476	0	0	9	9	19,872	32,364,466
2028	115,307	14,040,269	138,262	16,870,738	0	0	8	8	18,675	31,606,819
2029	112,631	13,315,873	130,079	16,071,665	0	0	6	6	17,350	30,777,578
2030	109,002	11,862,377	112,059	14,486,537	0	0	5	5	15,957	29,145,492
2031	90,805	8,707,223	78,126	10,840,837	0	0	3	3	12,985	25,390,085
2032	91,657	7,875,463	66,454	9,999,921	0	0	2	2	13,209	24,538,982
2033	75,147	6,112,961	49,621	7,840,001	0	0	1	1	12,171	22,303,544
2034	50,915	4,600,069	39,468	5,829,595	0	0	0	0	8,797	20,117,308
2035	28,336	2,957,557	27,667	3,685,406	0	0	0	0	6,058	17,460,744
TOTAL	32,375,857	3,323,377,228	26,838,260	3,999,473,865	0	0	884,844	884,844	20,236,154	5,011,231,748

TABLE B-16A: MINIMUM OMP&R COMPONENT OF

(in dollars)

Sheet 1 of 4

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	74,052	136,617	210,669
1972	37,895	0	37,895	122,407	117,483	334,366	574,256	77,636	143,230	220,866
1973	32,993	0	32,993	122,738	116,785	325,727	565,250	75,792	139,829	215,621
1974	46,498	0	46,498	154,434	146,929	403,081	704,444	76,725	141,548	218,273
1975	37,707	0	37,707	189,176	182,087	513,823	885,086	92,864	171,323	264,187
1976	60,926	0	60,926	203,064	193,436	524,816	921,316	95,036	175,331	270,367
1977	79,893	0	79,893	179,921	169,113	500,214	849,248	103,035	190,088	293,123
1978	59,524	0	59,524	245,224	234,270	660,745	1,140,239	107,115	197,618	304,733
1979	74,927	0	74,927	237,006	232,122	666,786	1,135,914	100,982	186,301	287,283
1980	82,850	0	82,850	389,622	372,228	1,010,932	1,772,782	125,971	232,402	358,373
1981	102,243	0	102,243	317,100	301,992	833,570	1,452,662	138,163	254,894	393,057
1982	194,899	0	194,899	392,058	374,507	1,111,015	1,877,580	142,939	263,704	406,643
1983	116,863	0	116,863	420,290	409,795	1,210,218	2,040,303	176,867	326,302	503,169
1984	184,582	0	184,582	617,062	583,813	1,656,735	2,857,610	208,860	385,321	594,181
1985	213,438	0	213,438	780,159	734,545	1,909,847	3,424,551	220,101	406,058	626,159
1986	226,874	0	226,874	780,547	736,578	1,929,342	3,446,467	223,069	411,534	634,603
1987	333,211	140,366	473,577	702,744	666,148	1,766,765	3,135,657	221,707	409,021	630,728
1988	314,752	123,736	438,488	702,149	665,612	1,765,542	3,133,303	223,399	412,142	635,541
1989	310,743	117,427	428,170	702,575	666,021	1,766,644	3,135,240	223,658	412,620	636,278
1990	311,214	117,681	428,895	703,555	666,951	1,769,131	3,139,637	224,089	413,419	637,508
1991	311,507	117,554	429,061	704,386	667,766	1,771,475	3,143,627	300,825	557,278	858,103
1992	312,075	117,915	429,990	705,356	668,692	1,773,950	3,147,998	329,361	609,947	939,308
1993	312,156	117,976	430,132	705,378	668,713	1,774,009	3,148,100	329,466	610,156	939,622
1994	312,180	118,005	430,185	705,392	668,727	1,774,043	3,148,162	329,591	610,411	940,002
1995	312,247	118,089	430,336	705,523	668,849	1,774,338	3,148,710	329,965	611,155	941,120
1996	312,268	118,117	430,385	705,544	668,869	1,774,389	3,148,802	330,078	611,382	941,460
1997	312,313	118,171	430,484	705,640	668,958	1,774,606	3,149,204	330,384	611,999	942,383
1998	312,307	118,166	430,473	705,609	668,930	1,774,534	3,149,073	330,314	611,865	942,179
1999	312,384	118,255	430,639	705,826	669,130	1,775,032	3,149,988	330,851	612,928	943,779
2000	312,389	118,262	430,651	705,825	669,130	1,775,026	3,149,981	330,854	612,938	943,792
2001	313,049	118,719	431,768	707,094	670,330	1,778,189	3,155,613	331,866	614,912	946,778
2002	313,139	118,821	431,960	708,412	671,540	1,781,089	3,161,041	333,131	617,351	950,482
2003	313,153	118,836	431,989	733,831	696,123	1,848,479	3,278,433	333,175	617,419	950,594
2004	321,290	126,477	447,767	736,393	698,538	1,854,706	3,289,637	335,605	621,948	957,553
2005	321,313	126,503	447,816	736,448	698,591	1,854,837	3,289,876	335,745	622,222	957,967
2006	321,362	126,563	447,925	736,583	698,714	1,855,139	3,290,436	340,290	630,659	970,949
2007	321,411	126,617	448,028	736,733	698,852	1,855,478	3,291,063	340,653	631,381	972,034
2008	321,518	126,741	448,259	737,062	699,158	1,856,232	3,292,452	341,453	632,979	974,432
2009	321,456	126,673	448,129	736,864	698,974	1,855,780	3,291,618	340,973	632,019	972,992
2010	321,552	126,782	448,334	737,158	699,247	1,856,451	3,292,856	341,685	633,443	975,128
2011	320,853	126,369	447,222	735,932	698,079	1,853,315	3,287,326	341,348	632,831	974,179
2012	320,969	126,501	447,470	736,284	698,406	1,854,121	3,288,811	342,203	634,541	976,744
2013	320,917	126,444	447,361	736,099	698,232	1,853,695	3,288,026	341,751	633,635	975,386
2014	321,054	126,605	447,659	736,503	698,608	1,854,619	3,289,730	342,731	635,595	978,326
2015	321,258	126,841	448,099	737,109	699,170	1,855,996	3,292,275	344,199	638,521	982,720
2016	321,348	126,946	448,294	737,366	699,408	1,856,585	3,293,359	344,824	639,773	984,597
2017	321,437	127,050	448,487	737,623	699,647	1,857,170	3,294,440	345,438	640,987	986,425
2018	321,509	127,135	448,644	737,825	699,833	1,857,629	3,295,287	345,914	641,934	987,848
2019	321,524	127,154	448,678	737,868	699,874	1,857,726	3,295,468	346,009	642,114	988,123
2020	321,531	127,164	448,695	736,331	698,468	1,854,380	3,289,179	345,110	640,438	985,548
2021	321,542	127,177	448,719	697,077	660,503	1,750,286	3,107,866	345,180	640,577	985,757
2022	309,461	115,664	425,125	695,408	658,977	1,746,643	3,101,028	343,136	636,766	979,902
2023	309,473	115,679	425,152	695,446	659,011	1,746,732	3,101,189	343,207	636,896	980,103
2024	308,206	114,646	422,852	693,133	656,787	1,740,719	3,090,639	333,086	618,182	951,268
2025	308,228	114,672	422,900	693,201	656,849	1,740,873	3,090,923	333,250	618,503	951,753
2026	308,219	114,661	422,880	693,171	656,822	1,740,802	3,090,795	333,179	618,359	951,538
2027	308,240	114,685	422,925	693,233	656,879	1,740,945	3,091,057	333,329	618,655	951,984
2028	308,209	114,649	422,858	693,132	656,785	1,740,716	3,090,633	333,086	618,170	951,256
2029	308,229	114,672	422,901	693,189	656,839	1,740,843	3,090,871	333,169	618,340	951,509
2030	308,229	114,672	422,901	693,183	656,833	1,740,831	3,090,847	333,147	618,285	951,432
2031	308,255	114,703	422,958	693,260	656,904	1,741,004	3,091,168	333,317	618,623	951,940
2032	308,213	114,653	422,866	693,125	656,779	1,740,694	3,090,598	332,983	617,941	950,924
2033	308,261	114,709	422,970	693,270	656,913	1,741,030	3,091,213	333,337	618,649	951,986
2034	308,155	114,588	422,743	692,952	656,618	1,740,303	3,089,873	332,562	617,107	949,669
2035	308,333	114,791	423,124	693,486	657,115	1,741,521	3,092,122	333,862	619,694	953,556
TOTAL	17,206,210	5,925,282	23,131,492	40,986,699	38,885,831	103,732,792	183,605,322	18,196,782	33,713,880	51,910,662

a) Unadjusted for prior overpayments or underpayments of charges.

TRANSPORTATION CHARGE FOR EACH CONTRACTOR^(a)

(in dollars)

Sheet 2 of 4

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	30,158	80,553	1,197,127	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	51,813	47,997	2,315	35,386	106,654	1,642,995	2,366	2,288	94,874	1,986,688
1972	54,323	49,867	2,414	37,099	122,312	1,735,439	2,470	2,254	98,776	2,049,954
1973	53,035	50,005	2,386	36,216	125,553	1,719,558	2,439	2,310	98,329	2,089,831
1974	53,696	52,816	2,557	36,662	135,661	1,822,284	2,615	2,529	104,610	2,213,430
1975	64,999	66,962	3,242	44,374	162,739	2,234,201	3,317	3,191	132,663	2,715,688
1976	66,515	66,505	3,327	45,413	159,305	2,215,603	3,405	2,919	133,941	2,696,933
1977	72,127	75,677	3,814	49,233	189,800	2,523,564	3,904	3,716	153,003	3,074,838
1978	74,970	74,566	3,706	51,183	185,496	2,530,442	3,790	3,899	149,638	3,077,690
1979	70,670	68,814	3,430	48,255	173,782	2,377,878	3,508	3,477	138,339	2,888,153
1980	88,192	95,580	4,706	60,195	235,630	3,145,843	4,810	4,761	190,898	3,830,615
1981	96,786	118,584	5,972	66,021	266,563	3,438,377	6,106	5,186	239,606	4,243,201
1982	100,166	133,097	6,657	68,304	311,392	3,852,358	6,808	6,342	267,994	4,753,118
1983	123,958	168,158	8,420	84,515	403,059	4,812,075	8,611	8,058	338,801	5,955,655
1984	146,588	252,910	12,736	99,801	578,299	6,700,856	13,024	10,526	510,990	8,325,730
1985	154,437	259,888	13,058	105,173	601,825	6,984,889	13,353	13,198	524,511	8,670,332
1986	156,409	236,725	11,832	106,594	570,222	6,675,446	12,102	13,664	476,498	8,259,492
1987	155,397	219,268	10,919	105,940	534,520	6,394,888	11,168	11,732	440,527	7,884,359
1988	156,580	220,128	10,960	106,750	534,092	6,423,106	11,207	11,699	442,190	7,916,712
1989	156,763	220,498	10,979	106,873	534,731	6,430,700	11,228	11,698	442,955	7,926,425
1990	157,066	220,515	10,977	107,080	535,409	6,439,528	11,227	11,663	442,938	7,936,403
1991	158,410	220,172	10,957	108,004	534,913	6,429,364	11,208	11,627	442,208	7,926,863
1992	165,845	218,685	10,880	113,099	532,763	6,362,510	11,127	11,642	439,134	7,865,685
1993	165,872	218,651	10,872	113,119	533,654	6,371,523	11,121	11,644	438,980	7,875,436
1994	165,899	218,706	10,876	113,140	533,785	6,373,005	11,123	11,645	439,085	7,877,264
1995	165,985	218,858	10,884	113,196	534,140	6,377,139	11,131	11,650	439,389	7,882,372
1996	166,012	218,904	10,887	113,215	534,248	6,378,391	11,133	11,650	439,478	7,883,918
1997	166,085	219,031	10,892	113,266	534,560	6,381,977	11,140	11,653	439,733	7,888,337
1998	166,065	218,997	10,890	113,252	534,477	6,381,074	11,138	11,653	439,664	7,887,210
1999	166,184	219,188	10,899	113,334	534,918	6,386,289	11,147	11,657	440,046	7,893,662
2000	166,186	219,193	10,899	113,334	534,934	6,386,453	11,147	11,657	440,054	7,893,857
2001	166,583	219,804	10,929	113,606	536,317	6,403,075	11,179	11,678	441,279	7,914,450
2002	167,152	221,934	11,040	113,988	539,937	6,443,842	11,290	11,867	445,634	7,966,684
2003	167,154	221,913	11,037	113,991	539,865	6,443,179	11,290	11,866	445,594	7,965,889
2004	168,707	226,086	11,253	115,046	549,774	6,561,442	11,510	12,103	454,126	8,110,047
2005	168,741	226,138	11,257	115,068	549,898	6,562,918	11,511	12,105	454,235	8,111,871
2006	171,759	226,537	11,265	117,135	553,776	6,618,435	11,522	12,108	454,796	8,177,333
2007	171,840	226,677	11,273	117,191	554,102	6,622,255	11,528	12,111	455,080	8,182,057
2008	172,024	226,991	11,288	117,315	554,827	6,630,759	11,544	12,119	455,705	8,192,572
2009	171,915	226,802	11,279	117,241	554,392	6,625,649	11,535	12,115	455,327	8,186,255
2010	172,076	227,082	11,292	117,352	555,037	6,633,224	11,549	12,122	455,887	8,195,621
2011	171,794	226,707	11,271	117,161	554,579	6,626,564	11,528	12,105	455,095	8,186,804
2012	171,989	227,040	11,288	117,293	555,352	6,635,636	11,544	12,114	455,761	8,198,017
2013	171,885	226,866	11,280	117,222	554,945	6,630,856	11,535	12,109	455,410	8,192,108
2014	172,111	227,248	11,298	117,374	555,831	6,641,269	11,556	12,119	456,177	8,204,983
2015	172,445	227,821	11,326	117,600	557,161	6,656,837	11,585	12,134	457,320	8,224,229
2016	172,587	228,066	11,338	117,697	557,729	6,663,494	11,596	12,141	457,812	8,232,460
2017	172,726	228,303	11,350	117,791	558,268	6,669,833	11,607	12,147	458,281	8,240,306
2018	172,831	228,481	11,359	117,864	558,671	6,674,604	11,617	12,152	458,636	8,246,215
2019	172,850	228,505	11,361	117,879	558,722	6,675,255	11,617	12,153	458,688	8,247,030
2020	172,236	225,763	11,218	117,464	554,291	6,625,776	11,473	11,886	453,065	8,183,172
2021	172,251	225,791	11,220	117,474	554,344	6,626,436	11,474	11,888	453,119	8,183,997
2022	170,907	219,861	10,912	116,568	540,268	6,462,968	11,160	11,540	440,956	7,985,140
2023	170,923	219,880	10,912	116,577	540,299	6,463,405	11,161	11,540	440,998	7,985,695
2024	163,980	218,415	10,862	111,824	530,968	6,329,766	11,110	11,500	438,524	7,826,949
2025	164,016	218,480	10,866	111,849	531,112	6,331,496	11,112	11,502	438,649	7,829,082
2026	163,999	218,448	10,863	111,837	531,037	6,330,662	11,111	11,501	438,587	7,828,045
2027	164,033	218,503	10,868	111,862	531,168	6,332,197	11,114	11,502	438,701	7,829,948
2028	163,977	218,400	10,861	111,822	530,924	6,329,358	11,109	11,500	438,491	7,826,442
2029	163,966	218,267	10,861	111,816	529,121	6,311,328	11,110	11,501	438,376	7,806,346
2030	163,959	218,242	10,860	111,810	529,055	6,310,635	11,108	11,501	438,332	7,805,502
2031	163,995	218,298	10,864	111,834	529,171	6,312,041	11,112	11,502	438,443	7,807,260
2032	163,916	218,151	10,857	111,782	528,819	6,308,020	11,105	11,499	438,152	7,802,301
2033	163,995	218,291	10,862	111,835	529,138	6,311,739	11,111	11,502	438,429	7,806,902
2034	163,820	217,990	10,851	111,716	528,440	6,303,541	11,094	11,494	437,828	7,796,774
2035	164,116	218,493	10,875	111,916	529,606	6,317,230	11,123	11,507	438,837	7,813,703
TOTAL	9,714,735	12,829,473	638,231	6,625,073	31,094,307	374,610,184	652,741	672,138	25,761,953	462,598,835

TABLE B-16A: MINIMUM OMP&R COMPONENT OF

(in dollars)

Sheet 3 of 4

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	559,021	195,980	160,691	44,456	265,006	10,030	325,516	73,256	964,538	256,576
1977	675,755	263,764	184,858	47,755	304,874	11,894	381,263	87,385	1,069,692	289,860
1978	669,766	315,581	202,426	58,275	333,840	11,879	404,570	87,035	1,236,617	324,487
1979	661,848	278,813	196,415	52,252	323,927	12,137	401,781	87,220	1,126,222	302,720
1980	859,772	337,790	254,037	72,151	418,961	15,471	510,355	113,103	1,522,686	402,412
1981	989,246	409,674	284,471	74,322	469,147	17,805	585,474	130,267	1,562,484	423,401
1982	1,115,576	472,104	321,694	89,866	530,537	20,024	650,580	146,607	1,878,542	499,937
1983	1,801,536	721,380	468,354	121,980	772,404	31,650	964,220	233,313	2,417,978	656,299
1984	2,258,654	504,660	597,347	177,990	985,156	39,486	1,181,694	291,609	3,460,149	901,129
1985	2,360,033	1,213,106	630,393	192,035	1,039,660	41,280	1,238,030	304,731	3,753,402	971,170
1986	2,370,910	862,015	611,270	165,237	1,008,111	41,572	1,245,426	306,613	3,296,307	884,599
1987	2,149,732	829,860	576,539	163,233	950,835	37,949	1,159,119	279,268	3,266,191	848,240
1988	2,091,564	777,237	563,797	159,883	929,823	36,983	1,133,059	272,007	3,206,953	848,218
1989	2,095,130	788,441	561,807	153,210	926,535	37,069	1,142,130	272,601	3,092,979	827,842
1990	2,103,023	775,317	573,634	163,898	946,042	37,260	1,150,150	273,896	3,283,658	866,478
1991	2,101,317	817,543	561,175	148,515	925,480	37,245	1,150,505	273,743	3,011,112	813,430
1992	2,100,897	742,535	574,203	164,115	946,979	37,248	1,151,176	273,726	3,289,004	867,808
1993	2,104,721	822,172	564,095	151,025	930,303	37,312	1,152,766	274,215	3,056,415	822,709
1994	2,105,380	820,619	567,243	154,580	935,500	37,327	1,153,392	274,324	3,119,647	835,156
1995	2,106,161	751,919	588,869	180,651	971,179	37,341	1,154,123	274,417	3,583,044	925,697
1996	2,106,637	784,563	572,174	160,038	943,633	37,351	1,154,594	274,496	3,216,749	854,315
1997	2,107,982	784,490	569,834	156,613	939,776	37,385	1,155,808	274,704	3,155,948	842,668
1998	2,107,518	802,090	561,447	146,642	925,938	37,372	1,155,226	274,630	2,978,694	807,984
1999	2,109,370	789,790	587,574	177,906	969,041	37,410	1,156,605	274,915	3,534,491	916,661
2000	2,109,461	772,885	579,479	167,986	955,689	37,413	1,156,687	274,928	3,358,156	882,278
2001	2,114,420	790,437	558,170	140,194	920,531	37,517	1,160,449	275,653	2,865,009	786,767
2002	2,120,471	852,298	587,329	174,062	968,634	37,639	1,164,192	276,505	3,467,024	904,875
2003	2,120,017	816,804	580,863	166,527	957,964	37,625	1,163,420	276,423	3,333,134	878,621
2004	2,151,744	806,084	580,892	160,569	958,008	38,158	1,176,255	280,400	3,228,346	860,473
2005	2,152,329	799,737	579,687	158,839	956,016	38,173	1,176,797	280,492	3,197,668	854,579
2006	2,180,509	804,014	591,785	168,360	975,982	38,651	1,188,048	284,073	3,366,757	889,503
2007	2,185,952	854,044	593,047	162,523	978,054	38,800	1,203,812	285,050	3,270,598	873,950
2008	2,189,168	847,187	607,074	178,327	1,001,193	38,871	1,206,662	285,555	3,551,601	929,273
2009	2,187,213	765,810	585,517	152,807	965,624	38,827	1,204,922	285,245	3,097,954	840,459
2010	2,190,091	815,127	591,362	158,744	975,267	38,892	1,207,473	285,698	3,203,707	861,546
2011	2,189,216	787,039	606,046	177,008	999,499	38,877	1,206,783	285,582	3,527,523	924,548
2012	2,192,665	853,359	600,150	168,374	989,768	38,955	1,209,845	286,124	3,374,248	895,185
2013	2,190,828	806,335	594,395	162,110	980,275	38,916	1,208,208	285,835	3,262,814	873,158
2014	2,194,779	866,774	600,233	167,599	989,905	39,006	1,211,712	286,457	3,360,589	892,854
2015	2,200,697	856,458	618,688	187,684	1,020,354	39,142	1,216,967	287,384	3,717,866	963,482
2016	2,203,222	826,401	591,645	153,602	975,735	39,198	1,219,205	287,780	3,112,282	845,733
2017	2,205,683	819,203	606,992	171,320	1,001,052	39,255	1,221,394	288,165	3,427,353	907,592
2018	2,207,590	851,602	608,042	171,800	1,002,788	39,300	1,223,117	288,469	3,435,943	909,570
2019	2,207,939	831,425	614,209	179,172	1,012,962	39,308	1,223,451	288,524	3,567,041	935,205
2020	2,202,996	872,276	607,078	171,384	1,001,192	39,223	1,221,467	287,892	3,428,610	907,859
2021	2,203,204	825,095	600,341	163,074	990,084	39,227	1,221,639	287,924	3,281,000	879,092
2022	2,158,276	830,298	597,470	167,562	985,350	38,482	1,204,519	282,337	3,360,864	891,724
2023	2,160,380	839,355	614,797	187,486	1,013,939	38,544	1,207,183	282,740	3,714,866	961,248
2024	2,099,792	794,136	577,835	153,778	952,965	37,514	1,182,721	275,064	3,114,275	839,749
2025	2,091,486	801,593	572,940	162,541	944,894	37,274	1,151,185	273,490	3,253,671	860,463
2026	2,091,141	798,668	573,996	163,980	946,643	37,266	1,150,875	273,432	3,279,230	865,391
2027	2,091,702	793,327	568,589	157,140	937,717	37,281	1,151,365	273,520	3,157,775	841,784
2028	2,090,692	794,409	574,149	164,348	946,890	37,157	1,150,484	273,361	3,285,726	866,591
2029	2,084,583	795,125	570,969	161,404	941,651	37,157	1,148,466	272,609	3,233,546	856,068
2030	2,084,391	785,604	570,810	161,280	941,384	37,152	1,148,310	272,580	3,231,328	855,608
2031	2,084,944	798,708	575,087	166,275	948,440	37,164	1,148,806	272,668	3,320,144	873,023
2032	2,083,417	784,013	565,887	155,685	933,266	37,132	1,147,423	272,426	3,131,875	836,052
2033	2,084,654	794,516	575,227	166,618	948,669	37,158	1,148,436	272,616	3,326,243	874,153
2034	2,081,405	785,799	563,779	154,012	929,782	37,084	1,145,491	272,101	3,102,047	829,895
2035	2,086,531	809,114	595,155	190,235	981,554	37,201	1,149,996	272,902	3,746,035	956,329
TOTAL	121,131,048	46,042,916	33,102,645	9,316,851	54,593,093	2,151,154	66,671,637	15,799,139	187,093,131	49,587,613

TRANSPORTATION CHARGE FOR EACH CONTRACTOR^(a)

(in dollars)

Sheet 4 of 4

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)	
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	158,664	12,862,706	94,802	15,971,242	0	0	139	139	106,717	20,027,640
1977	178,814	16,207,852	122,003	19,825,769	0	0	892	892	98,635	24,222,398
1978	201,074	18,704,758	139,697	22,690,005	0	0	39	39	102,972	27,375,202
1979	186,817	16,427,352	126,872	20,184,376	0	0	3,235	3,235	119,356	24,693,244
1980	249,131	21,308,811	157,257	26,221,937	0	0	416	416	178,829	32,445,802
1981	261,113	23,700,606	185,159	29,093,169	0	0	3,847	3,847	185,051	35,473,230
1982	309,249	28,941,642	213,420	35,189,778	0	0	11,046	11,046	186,178	42,619,242
1983	404,351	39,825,276	332,605	48,751,346	0	0	2,379	2,379	198,040	57,567,755
1984	559,028	35,655,632	285,402	46,897,936	0	0	3,173	3,173	276,923	59,140,135
1985	603,219	64,797,255	523,472	77,667,786	0	0	2,570	2,570	364,005	90,968,841
1986	546,173	49,626,498	408,565	61,373,296	0	0	2,573	2,573	371,159	74,314,464
1987	534,899	48,647,052	383,883	59,842,800	0	0	2,605	2,605	348,319	72,318,045
1988	525,029	46,134,317	362,484	57,041,354	0	0	2,596	2,596	348,236	69,516,230
1989	511,422	46,281,571	366,474	57,057,211	0	0	2,592	2,592	348,424	69,534,340
1990	536,535	47,428,470	362,495	58,500,856	0	0	2,597	2,597	349,388	70,995,284
1991	501,763	47,516,852	376,223	58,234,903	0	0	2,610	2,610	349,858	70,945,025
1992	537,374	44,895,664	351,656	55,932,385	0	0	2,624	2,624	350,283	68,668,273
1993	507,783	48,037,340	377,900	58,838,756	0	0	2,631	2,631	350,149	71,584,826
1994	515,922	47,170,519	377,413	58,067,022	0	0	2,631	2,631	350,110	70,815,376
1995	575,231	47,899,122	354,997	59,402,751	0	0	2,631	2,631	350,239	72,158,159
1996	528,448	47,084,842	365,705	58,083,545	0	0	2,631	2,631	350,231	70,840,972
1997	520,784	46,555,753	365,740	57,467,485	0	0	2,631	2,631	350,311	70,230,835
1998	498,074	47,242,986	371,478	57,910,079	0	0	2,631	2,631	350,270	70,671,915
1999	569,252	47,661,261	367,525	59,151,801	0	0	2,631	2,631	350,527	71,923,027
2000	546,716	46,985,920	361,994	58,189,592	0	0	2,631	2,631	350,525	70,961,029
2001	484,036	45,895,231	367,969	56,396,383	0	0	2,635	2,635	351,357	69,198,984
2002	561,332	49,976,479	388,486	61,479,326	0	0	2,635	2,635	352,070	74,344,108
2003	544,152	48,629,875	376,841	59,882,266	0	0	2,635	2,635	364,119	72,875,925
2004	531,930	48,750,777	375,419	59,899,055	0	0	2,635	2,635	365,304	73,071,998
2005	528,059	47,865,824	373,368	58,961,568	0	0	2,635	2,635	365,372	72,137,105
2006	550,665	48,112,493	376,083	59,526,923	0	0	2,635	2,635	365,535	72,781,736
2007	540,030	49,860,134	392,967	61,238,961	0	0	2,635	2,635	365,716	74,500,494
2008	576,211	50,145,155	390,856	61,947,133	0	0	2,635	2,635	366,115	75,223,598
2009	518,058	47,303,540	364,144	58,310,120	0	0	2,635	2,635	365,875	71,577,624
2010	531,812	48,723,267	380,405	59,963,391	0	0	2,635	2,635	366,233	73,244,198
2011	573,116	46,857,214	371,158	58,543,609	0	0	2,631	2,631	365,642	71,807,413
2012	553,799	51,545,376	393,007	63,100,855	0	0	2,631	2,631	366,069	76,380,597
2013	539,404	47,058,054	377,539	58,377,871	0	0	2,631	2,631	365,843	71,649,226
2014	552,223	49,925,783	397,486	61,485,400	0	0	2,631	2,631	366,333	74,775,062
2015	598,375	52,327,904	394,356	64,429,357	0	0	2,631	2,631	367,066	77,746,377
2016	521,161	49,306,976	384,627	60,467,567	0	0	2,631	2,631	367,382	73,796,290
2017	561,640	50,052,523	382,368	61,684,540	0	0	2,631	2,631	367,691	75,024,520
2018	562,892	52,250,647	393,054	63,944,814	0	0	2,631	2,631	367,932	77,293,371
2019	579,685	49,703,179	386,465	61,568,565	0	0	2,631	2,631	367,982	74,918,477
2020	561,816	48,003,249	399,604	59,704,646	0	0	2,631	2,631	367,410	72,981,281
2021	542,958	53,171,139	384,174	64,588,951	0	0	2,631	2,631	348,835	77,666,756
2022	551,663	48,478,029	382,841	59,929,415	0	0	2,631	2,631	348,168	72,771,409
2023	597,152	51,637,519	385,812	63,621,021	0	0	2,631	2,631	348,212	76,464,003
2024	518,154	45,798,441	368,131	56,710,555	0	0	2,631	2,631	347,064	69,351,958
2025	532,624	50,765,876	369,599	61,817,636	0	0	2,631	2,631	347,145	74,462,070
2026	535,860	44,696,423	368,625	55,781,530	0	0	2,631	2,631	347,109	68,424,528
2027	520,382	50,155,374	366,906	61,052,862	0	0	2,631	2,631	347,185	73,698,592
2028	536,659	45,522,902	367,214	56,610,682	0	0	2,631	2,631	347,057	69,251,559
2029	529,809	49,710,458	367,157	60,709,002	0	0	2,631	2,631	347,122	73,330,382
2030	529,512	45,174,161	364,030	56,156,150	0	0	2,631	2,631	347,112	68,776,575
2031	540,915	50,283,197	368,345	61,417,716	0	0	2,631	2,631	347,200	74,040,873
2032	516,721	44,769,293	363,475	55,596,665	0	0	2,631	2,631	347,033	68,213,018
2033	541,661	48,906,832	366,959	60,043,742	0	0	2,631	2,631	347,210	72,666,654
2034	512,734	45,556,670	363,974	56,334,773	0	0	2,631	2,631	346,824	68,943,287
2035	595,470	52,539,233	371,817	64,331,572	0	0	2,631	2,631	347,472	76,964,180
TOTAL	30,681,962	2,746,741,606	21,356,484	3,384,269,279	0	0	160,413	160,413	20,248,215	4,125,924,218

TABLE B-16B: MINIMUM OMP&R COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Sheet 1 of 4

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	15,282	0	15,282	72,043	47,722	1,311,067	1,430,832	0	0	0
1984	34,637	0	34,637	885,731	1,008,371	2,997,859	4,891,961	0	0	0
1985	42,022	0	42,022	1,007,313	1,149,083	3,283,094	5,439,490	0	0	0
1986	27,851	0	27,851	600,635	688,585	1,887,710	3,176,930	0	0	0
1987	62,170	68,268	130,438	738,486	847,985	2,240,923	3,827,394	0	0	0
1988	67,741	77,071	144,812	775,956	892,349	2,276,137	3,944,442	0	0	0
1989	75,169	82,738	157,907	798,375	919,419	2,317,862	4,035,656	0	0	0
1990	112,539	76,835	189,374	712,499	821,600	2,048,433	3,582,532	0	0	0
1991	120,295	82,174	202,469	748,702	845,593	2,069,942	3,664,237	335,980	611,296	947,276
1992	125,864	89,635	215,499	771,261	854,814	2,056,696	3,682,771	326,876	594,731	921,607
1993	134,432	99,086	233,518	802,951	874,794	2,070,769	3,748,514	322,396	586,580	908,976
1994	140,801	106,578	247,379	822,752	863,890	2,056,880	3,743,522	313,829	570,993	884,822
1995	149,303	133,853	283,156	855,641	855,641	2,037,241	3,748,523	310,832	565,541	876,373
1996	155,727	147,532	303,259	877,108	837,240	1,993,428	3,707,776	304,148	553,378	857,526
1997	164,020	149,357	313,377	909,946	830,821	1,978,144	3,718,911	301,816	549,135	850,951
1998	164,676	144,498	309,174	863,262	788,196	1,876,657	3,528,115	286,331	520,962	807,293
1999	164,513	139,757	304,270	819,044	747,823	1,780,531	3,347,398	271,665	494,278	765,943
2000	166,046	135,814	301,860	781,063	713,145	1,697,964	3,192,172	259,067	471,357	730,424
2001	168,170	131,361	299,531	755,454	689,762	1,642,291	3,087,507	250,573	455,902	706,475
2002	166,209	125,070	291,279	719,275	656,729	1,563,641	2,939,645	238,573	434,069	672,642
2003	167,578	120,860	288,438	695,064	634,624	1,511,009	2,840,697	230,542	419,458	650,000
2004	165,714	114,859	280,573	660,553	603,114	1,435,986	2,699,653	219,096	398,631	617,727
2005	166,212	110,884	277,096	637,695	582,243	1,386,294	2,606,232	211,514	384,837	596,351
2006	162,161	105,222	267,383	605,130	552,510	1,315,501	2,473,141	200,713	365,185	565,898
2007	162,698	101,558	264,256	584,056	533,269	1,269,688	2,387,013	193,723	352,467	546,190
2008	158,833	96,055	254,888	552,414	504,378	1,200,899	2,257,691	183,227	333,371	516,598
2009	157,675	92,474	250,149	531,814	485,569	1,156,118	2,173,501	176,395	320,940	497,335
2010	153,143	87,181	240,324	501,377	457,779	1,089,951	2,049,107	166,299	302,572	468,871
2011	152,403	83,853	236,256	482,237	440,303	1,048,341	1,970,881	159,951	291,021	450,972
2012	147,924	79,145	227,069	455,160	415,581	989,479	1,860,220	150,970	274,681	425,651
2013	111,339	57,691	169,030	331,779	302,928	721,258	1,355,965	110,046	200,222	310,268
2014	104,264	52,373	156,637	301,194	275,003	654,769	1,230,966	99,901	181,765	281,666
2015	41,025	19,996	61,021	114,994	104,995	249,987	469,976	38,142	69,397	107,539
2016	16,301	7,733	24,034	44,474	40,607	96,683	181,764	14,751	26,839	41,590
2017	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0	0	0
2025	0	0	0	0	0	0	0	0	0	0
2026	0	0	0	0	0	0	0	0	0	0
2027	0	0	0	0	0	0	0	0	0	0
2028	0	0	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0	0	0
TOTAL	4,124,737	2,919,511	7,044,248	21,815,438	21,866,465	55,313,232	98,995,135	5,677,356	10,329,608	16,006,964

a) Unadjusted for prior overpayments or underpayments of charges.

FOR EACH CONTRACTOR FOR OFF-AQUEDUCT POWER FACILITIES^(a)

(in dollars)

Sheet 2 of 4

Calendar Year	SAN JOAQUIN VALLEY AREA								Total
	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	
				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	116,784	241,580	0	51,142	4,500,679	19,991	14,679	5,665	4,950,520
1984	264,044	572,359	76,145	1,348,274	13,757,533	39,342	41,547	206,392	16,305,636
1985	289,167	656,004	41,695	1,468,848	16,358,043	47,255	46,448	1,646,959	20,554,419
1986	166,265	393,970	23,974	884,848	9,829,838	29,568	27,796	946,967	12,303,226
1987	197,375	487,608	28,460	1,099,197	12,279,557	37,946	33,644	1,124,155	15,287,942
1988	200,476	515,506	28,907	1,145,260	12,538,444	38,542	35,487	1,039,683	15,542,305
1989	199,615	533,438	28,783	1,464,151	13,470,909	38,377	36,644	1,076,470	16,848,387
1990	172,576	478,601	24,884	1,489,309	11,957,626	33,179	32,246	982,915	15,171,336
1991	170,678	473,336	24,610	1,472,927	11,826,093	32,814	31,891	972,103	15,004,452
1992	166,053	460,509	23,943	1,433,011	11,505,612	31,924	31,027	945,760	14,597,839
1993	163,777	454,198	23,615	1,413,372	11,347,927	31,487	30,602	932,798	14,397,776
1994	159,425	442,129	22,988	1,375,815	11,046,380	30,650	29,789	908,011	14,015,187
1995	157,903	437,907	22,768	1,362,678	10,940,905	30,358	29,504	899,341	13,881,364
1996	154,507	428,490	22,278	1,333,372	10,705,612	29,705	28,870	880,000	13,582,834
1997	153,322	425,204	22,108	1,323,149	10,623,531	29,477	28,648	873,253	13,478,692
1998	145,456	403,389	20,973	1,255,266	10,078,500	27,965	27,179	828,452	12,787,180
1999	138,006	382,727	19,899	1,190,969	9,562,259	26,532	25,786	786,017	12,132,195
2000	131,606	364,979	18,976	1,135,741	9,118,834	25,302	24,591	749,567	11,569,596
2001	127,291	353,012	18,354	1,098,502	8,819,845	24,472	23,784	724,990	11,190,250
2002	121,195	336,106	17,475	1,045,895	8,397,463	23,300	22,645	690,271	10,654,350
2003	117,116	324,793	16,887	1,010,690	8,114,804	22,516	21,883	667,036	10,295,725
2004	111,301	308,667	16,049	960,508	7,711,893	21,398	20,797	633,917	9,784,530
2005	107,449	297,985	15,493	927,270	7,445,025	20,658	20,077	611,980	9,445,937
2006	101,962	282,768	14,702	879,918	7,064,836	19,603	19,052	580,729	8,963,570
2007	98,411	272,921	14,190	849,274	6,818,798	18,920	18,388	560,504	8,651,406
2008	93,079	258,135	13,421	803,263	6,449,374	17,895	17,392	530,138	8,182,697
2009	89,609	248,509	12,921	773,309	6,208,876	17,228	16,743	510,369	7,877,564
2010	84,480	234,286	12,181	729,051	5,853,529	16,242	15,785	481,159	7,426,713
2011	81,255	225,342	11,716	701,219	5,630,069	15,622	15,183	462,791	7,143,197
2012	76,693	212,690	11,058	661,847	5,313,952	14,745	14,330	436,806	6,742,121
2013	55,903	155,035	8,061	482,438	3,873,481	10,748	10,446	318,400	4,914,512
2014	50,750	140,743	7,318	437,964	3,516,405	9,757	9,483	289,048	4,461,468
2015	19,376	53,735	2,794	167,212	1,342,544	3,725	3,620	110,357	1,703,363
2016	7,494	20,782	1,081	64,670	519,231	1,441	1,400	42,681	658,780
2017	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0	0
2025	0	0	0	0	0	0	0	0	0
2026	0	0	0	0	0	0	0	0	0
2027	0	0	0	0	0	0	0	0	0
2028	0	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0	0
TOTAL	4,490,399	11,877,443	668,707	33,840,359	294,528,407	838,684	807,386	23,455,684	370,507,069

TABLE B-16B: MINIMUM OMP&R COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Sheet 3 of 4

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	1,644,842	507,305	858,626	53,771	1,357,558	1,896	0	0	353,791	43,324
1984	2,411,444	1,423,685	2,097,467	197,535	3,325,512	0	0	0	957,748	1,649,454
1985	2,565,877	1,717,700	2,474,904	238,910	3,933,276	0	0	0	1,311,092	1,092,577
1986	1,496,429	1,101,600	1,525,291	154,121	2,429,073	99,143	0	60,194	804,107	820,859
1987	1,801,900	1,713,567	1,932,099	210,800	3,132,166	126,101	0	399,320	984,395	1,242,923
1988	1,904,504	2,290,124	2,085,777	234,312	3,433,876	128,083	0	486,714	1,090,761	1,393,750
1989	1,896,318	2,280,281	2,199,599	254,423	3,670,524	136,034	0	573,895	1,086,073	1,488,322
1990	1,690,617	1,971,412	2,008,334	239,087	3,312,447	124,959	4,416,597	588,041	5,216,453	1,608,406
1991	1,744,717	1,949,726	1,986,243	246,776	3,276,011	130,854	4,368,014	639,729	3,662,941	1,614,790
1992	1,768,162	1,896,890	1,932,417	250,127	3,187,233	134,380	4,249,644	678,974	3,563,678	1,594,453
1993	1,813,687	1,870,893	1,905,933	256,600	3,143,552	139,514	4,191,402	725,475	3,514,837	1,595,703
1994	1,833,395	1,821,178	1,855,287	259,419	3,060,018	142,597	4,080,024	760,520	3,421,438	1,575,789
1995	1,883,145	1,803,789	1,837,572	266,488	3,030,800	147,961	4,041,067	807,062	3,388,769	1,583,016
1996	1,934,779	1,764,997	1,798,053	270,097	2,965,620	151,360	3,954,161	829,191	3,315,891	1,572,324
1997	2,011,370	1,751,464	1,784,267	277,295	2,942,883	150,200	3,923,844	862,016	3,290,467	1,583,441
1998	1,994,914	1,661,607	1,692,727	271,862	2,791,901	142,494	3,722,534	854,963	4,587,217	1,524,187
1999	1,975,023	1,576,496	1,606,022	266,280	2,648,894	135,195	3,531,858	846,438	7,133,242	1,466,973
2000	1,961,913	1,503,390	1,531,547	261,888	2,526,058	128,926	3,368,078	840,820	6,802,456	1,418,836
2001	2,011,441	1,552,975	1,481,331	260,996	2,443,234	124,698	3,257,645	824,094	6,579,417	1,392,836
2002	2,023,929	1,572,747	1,410,390	255,824	2,326,227	118,727	3,101,637	794,953	6,264,329	1,345,671
2003	2,060,158	1,610,782	1,362,916	254,293	2,247,926	114,730	2,997,235	778,171	6,053,471	1,319,255
2004	2,057,421	1,617,262	1,295,245	248,396	2,136,314	109,034	2,848,418	749,015	5,752,908	1,271,695
2005	2,082,332	1,644,763	1,250,424	246,296	2,062,387	105,261	2,749,850	734,537	5,553,830	1,245,011
2006	2,084,566	1,560,771	1,186,569	239,882	1,957,069	99,885	2,609,425	707,884	5,270,217	1,199,925
2007	2,116,760	1,506,416	1,145,246	237,477	1,888,913	96,407	2,518,550	693,710	5,086,678	1,175,985
2008	2,101,193	1,424,803	1,083,200	230,239	1,786,577	91,184	2,382,102	666,038	4,811,096	1,129,154
2009	2,118,256	1,371,672	1,042,807	227,070	1,719,955	87,784	2,293,273	650,743	4,631,689	1,103,299
2010	2,086,979	1,293,168	983,125	219,182	1,621,518	82,760	2,162,024	622,496	4,366,608	1,055,476
2011	2,111,169	1,303,206	945,594	216,136	1,559,616	79,600	2,079,488	598,732	4,199,911	1,030,738
2012	2,090,661	1,286,104	892,501	209,023	1,472,047	75,131	1,962,729	565,114	3,964,095	987,547
2013	1,595,395	978,346	650,568	156,024	1,073,014	54,765	1,430,686	411,927	2,889,535	730,551
2014	1,513,192	925,261	590,595	144,964	974,099	49,716	1,298,798	373,953	2,623,163	672,921
2015	602,454	367,425	225,486	56,616	371,906	18,981	495,874	142,773	1,001,509	260,627
2016	244,171	142,102	87,207	21,896	143,835	7,341	191,780	55,218	387,335	102,383
2017	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0	0	0
2025	0	0	0	0	0	0	0	0	0	0
2026	0	0	0	0	0	0	0	0	0	0
2027	0	0	0	0	0	0	0	0	0	0
2028	0	0	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0	0	0
TOTAL	63,233,113	50,763,907	48,745,369	7,434,105	79,952,039	3,335,701	78,226,737	19,322,710	123,921,147	40,892,201

FOR EACH CONTRACTOR FOR OFF-AQUEDUCT POWER FACILITIES^(a)

(in dollars)

Sheet 4 of 4

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	19,411,521	0	24,232,634	0	0	0	0	30,629,268
1984	0	47,191,623	0	59,254,468	0	0	0	0	80,486,702
1985	0	75,253,716	0	88,588,052	0	0	0	0	114,623,983
1986	0	101,723,345	0	110,214,162	0	0	0	0	125,722,169
1987	0	121,540,685	0	133,083,956	0	0	0	0	152,329,730
1988	0	123,383,687	68,704	136,500,292	0	0	0	0	156,131,851
1989	1,086,073	121,272,452	136,817	136,080,811	0	0	0	0	157,122,761
1990	1,025,902	110,534,580	197,141	132,933,976	0	0	0	0	151,877,218
1991	1,109,201	112,038,233	272,962	133,040,197	0	0	0	0	152,858,631
1992	1,171,162	111,647,883	341,440	132,416,443	0	0	0	0	151,834,159
1993	1,245,870	112,727,310	411,596	133,542,372	0	0	0	0	152,831,156
1994	1,301,110	112,272,035	528,142	132,910,952	0	0	0	0	151,801,862
1995	1,376,190	109,159,430	649,364	129,974,653	0	0	0	0	148,764,069
1996	1,346,594	108,548,623	829,548	129,281,238	0	0	0	0	147,732,633
1997	1,336,270	109,439,813	1,015,849	130,369,179	0	0	0	0	148,731,110
1998	1,267,713	105,460,115	1,212,973	127,185,207	0	0	0	0	144,616,969
1999	1,202,779	101,609,508	1,198,137	125,196,845	0	0	0	0	141,746,651
2000	1,147,003	98,376,968	1,202,712	121,070,595	0	0	0	0	136,864,647
2001	1,109,395	96,514,795	1,163,277	118,716,134	0	0	0	0	133,999,897
2002	1,056,266	93,190,835	1,107,568	114,569,103	0	0	0	0	129,127,019
2003	1,020,712	91,308,454	1,070,287	112,198,390	0	0	0	0	126,273,250
2004	970,032	87,967,012	1,017,146	108,039,898	0	0	0	0	121,422,381
2005	936,465	86,073,829	981,948	105,666,933	0	0	0	0	118,592,549
2006	888,643	82,738,696	931,804	101,475,336	0	0	0	0	113,745,328
2007	857,695	80,880,670	899,353	99,103,860	0	0	0	0	110,952,725
2008	811,228	77,466,732	850,629	94,834,175	0	0	0	0	106,046,049
2009	780,977	75,509,844	818,908	92,356,277	0	0	0	0	103,154,826
2010	736,280	72,066,789	772,041	88,068,446	0	0	0	0	98,253,461
2011	708,172	70,003,721	742,568	85,578,651	0	0	0	0	95,379,957
2012	668,410	66,722,629	700,874	81,596,865	0	0	0	0	90,851,926
2013	487,222	49,109,316	510,886	60,078,235	0	0	0	0	66,828,010
2014	442,307	45,011,956	463,790	55,084,715	0	0	0	0	61,215,452
2015	168,871	17,349,404	177,072	21,238,998	0	0	0	0	23,580,897
2016	65,311	6,766,030	68,483	8,283,092	0	0	0	0	9,189,260
2017	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0	0
2025	0	0	0	0	0	0	0	0	0
2026	0	0	0	0	0	0	0	0	0
2027	0	0	0	0	0	0	0	0	0
2028	0	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0	0
TOTAL	26,323,853	2,900,272,239	20,342,019	3,462,765,140	0	0	0	0	3,955,318,556

TABLE B-17: UNIT VARIABLE OMP&R COMPONENT

(in dollars per acre-foot)

Sheet 1 of 4

Calendar Year	NORTH BAY AQUEDUCT				SOUTH BAY AQUEDUCT		CALIFORNIA AQUEDUCT			
	Reach 1 Cache Slough Pumping Plant		Reach 3 Cordelia Pumping Plant ^(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	
	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1962	0	0	0	0	4 1511341	4 1511341	0	0	0	0
1963	0	0	0	0	4 5639383	4 5639383	0	0	0	0
1964	0	0	0	0	3 5452154	3 5452154	0	0	0	0
1965	0	0	0	0	4 1911773	4 1911773	0	0	0	0
1966	0	0	0	0	3 5074573	3 5074573	0	0	0	0
1967	0	0	0	0	3 9306767	5 1337448	1 2030681	1 2030681	0	0
1968	0	0	5 7570016	5 7570016	3 3315620	4 8750942	1 5435322	1 5435322	1 0732031	2 6167353
1969	0	0	3 1823595	3 1823595	3 6949191	4 8016170	1 1067151	1 1067151	0 7028165	1 8095316
1970	0	0	3 7584301	3 7584301	4 4256141	5 3721490	0 9465349	0 9465349	0 7813430	1 7278779
1971	0	0	4 2082507	4 2082507	3 8714396	4 7522833	0 8808437	0 8808437	0 4125312	1 2933749
1972	0	0	3 9577735	3 9577735	4 3250690	5 2281886	0 9030996	0 9030996	0 5554925	1 4585921
1973	0	0	3 8103903	3 8103903	5 2455409	6 1841800	0 9386391	0 9386391	0 5996892	1 5383283
1974	0	0	3 5878850	3 5878850	6 3321503	7 2293909	0 8972406	0 8972406	0 5736894	1 4709300
1975	0	0	2 1606725	2 1606725	3 7365711	4 8327731	1 0962020	1 0962020	0 4662594	1 5564614
1976	0	0	2 9283909	2 9283909	4 5191527	5 7132795	1 1941268	1 1941268	0 5163827	1 7105095
1977	0	0	2 7516411	2 7516411	4 7630172	6 5309908	1 7679736	1 7679736	0 5979675	2 4767411
1978	0	0	3 6000994	3 6000994	5 2147121	6 9368754	1 7221633	1 7221633	0 4080662	2 2129695
1979	0	0	2 4761469	2 4761469	4 9451428	7 0754583	2 1303155	2 1303155	0 6590292	2 7893447
1980	0	0	2 9774862	2 9774862	4 5213427	5 9819273	1 4605846	1 4605846	0 8563655	2 3169501
1981	0	0	2 4099544	2 4099544	4 1637286	6 2476721	2 0839435	2 0839435	0 7177400	2 8016835
1982	0	0	10 2102226	10 2102226	9 3606654	11 0454151	1 6847497	1 6847497	1 0614111	2 7461632
1983	0	0	12 3508696	12 3508696	19 2086003	26 9508237	7 7422234	7 7422234	3 6747584	11 4169818
1984	0	0	10 2158556	10 2158556	15 9437997	22 0660982	6 1222985	6 1222985	2 9555011	9 0777996
1985	0	0	9 5393258	9 5393258	14 0559757	19 4685096	5 4125339	5 4125339	2 6370667	8 0496006
1986	0 0000000	0 0000000	11 3581952	14 2462143	14 0312375	19 4353645	5 4041270	5 4041270	2 6340505	8 0381775
1987	2 8880191	2 8880191	11 974249	14 0636811	14 7871279	20 1262098	5 3749419	5 3749419	2 6131679	7 9881098
1988	2 8662562	2 8662562	12 3957307	15 8942788	15 8580879	20 1257828	5 3698543	5 3698543	2 6114699	9 4787031
1989	2 8670807	2 8670807	12 0210526	15 2195024	16 1798571	22 2887637	6 1089066	6 1089066	2 9602609	9 0691675
1990	3 1984498	3 1984498	12 503429	15 4211488	16 3667188	22 5800908	6 2133720	6 2133720	3 0097323	9 2231043
1991	3 2708059	3 2708059	12 2511480	15 5859322	16 4978534	22 7576367	6 2597833	6 2597833	3 0512536	9 3110369
1992	3 3347842	3 3347842	12 2983510	15 7087767	15 7107835	22 0035018	6 2927183	6 2927183	3 0845028	9 3772211
1993	3 4104257	3 4104257	12 3282937	16 4044981	16 2559527	22 763629	6 5106672	6 5106672	3 2085522	9 7192194
1994	3 7286290	3 7286290	12 7599041	16 5886786	16 3839516	22 9355048	6 5515532	6 5515532	3 2438429	9 7953961
1996	3 8087745	3 8087745	12 9934930	16 9268017	16 7003457	23 1766552	6 6763095	6 6763095	3 3599361	10 0362456
1997	3 9333187	3 9333187	16 8671079	16 6331649	16 6331649	23 2463666	6 6132017	6 6132017	3 3778397	9 9910414
1998	3 9370481	3 9370481	17 4944442	17 2314149	17 2314149	23 9980806	6 7666657	6 7666657	3 4978421	10 2645078
1999	4 1069719	4 1069719	17 5227394	17 2267394	17 2267394	23 9942755	6 7675361	6 7675361	3 5221137	10 2864498
2000	4 1415571	4 1415571	18 2862060	18 2862060	17 9333404	24 9699346	7 0365942	7 0365942	3 6731675	10 7097617
2001	4 3754120	4 3754120	19 0185333	19 0185333	18 6631170	25 9779661	7 3148491	7 3148491	3 8230929	11 1379420
2002	4 5497282	4 5497282	19 1176937	18 7676223	18 7676223	26 0767446	7 2391223	7 2391223	3 8510555	11 0242278
2003	4 5775586	4 5775586	19 4934416	19 4934416	19 1459628	26 4670658	7 3211030	7 3211030	3 8225965	11 1436995
2004	4 6671429	4 6671429	19 2944947	19 2944947	19 2944947	26 6704493	7 3759546	7 3759546	3 8280778	11 2240324
2005	4 7297710	4 7297710	20 0548594	20 0548594	19 6445266	27 1493291	7 5048025	7 5048025	3 9079765	11 4127790
2006	4 8619111	4 8619111	20 4389728	20 4389728	20 0361170	27 6848134	7 6486964	7 6486964	3 950365	11 6237329
2007	4 9562243	4 9562243	21 3268551	20 9031383	20 9031383	28 8714566	7 9683183	7 9683183	4 1235272	12 0915755
2008	5 1718409	5 1718409	20 3824255	20 3824255	20 3824255	28 1586064	7 7761809	7 7761809	4 0423191	11 801428
2009	5 0689560	5 0689560	21 1548351	21 1548351	21 1548351	29 2154958	8 0606607	8 0606607	4 1663748	12 2270355
2010	5 2609610	5 2609610	21 2588191	21 2588191	21 2588191	29 3577117	8 0988926	8 0988926	4 1841716	12 2830642
2011	5 3289964	5 3289964	22 7056016	22 7056016	22 1852340	30 6244942	8 4392602	8 4392602	4 3426776	12 7819378
2012	5 5626442	5 5626442	22 7549574	22 7549574	22 7549574	31 0557117	8 2607543	8 2607543	4 2588251	12 5195794
2013	5 5029649	5 5029649	23 3774370	23 3774370	22 7544668	31 4088294	8 6523826	8 6523826	4 4043952	13 0927778
2014	5 8107546	5 8107546	24 3450106	24 3450106	24 3450106	33 5812314	9 2362208	9 2362208	4 7119749	13 9481957
2015	6 2587822	6 2587822	25 0229149	25 0229149	25 0229149	34 5098452	9 4869303	9 4869303	4 8277596	14 3146899
2016	6 4706621	6 4706621	26 4950155	26 4950155	26 4950155	35 4299877	9 7340249	9 7340249	4 9050666	14 6390915
2017	6 6793445	6 6793445	26 2311809	26 2311809	26 2311809	36 1598215	9 8786406	9 8786406	4 9572838	14 8685126
2018	6 8531115	6 8531115	26 3592766	26 3592766	26 3592766	36 2851847	9 9299081	9 9299081	4 9375644	14 8674745
2019	6 8864745	6 8864745	26 3103617	26 3103617	26 3103617	36 1967661	9 8864044	9 8864044	4 9062529	14 7926573
2020	6 9571941	6 9571941	27 1212089	27 1212089	27 1212089	36 0250133	9 8412846	9 8412846	4 7590080	14 6300926
2021	6 9821173	6 9821173	26 2831809	26 2831809	26 2831809	35 1598215	9 8786406	9 8786406	4 6986212	14 5752618
2022	6 9261889	6 9261889	26 0282988	26 0282988	26 0282988	35 035120	9 7806822	9 7806822	4 5762621	14 3569443
2023	6 9524919	6 9524919	26 1988989	26 1988989	26 1988989	36 0455618	9 8466629	9 8466629	4 5666699	14 4532328
2024	6 9301954	6 9301954	27 0509217	27 0509217	27 0509217	35 9345277	9 8099905	9 8099905	4 5936676	14 4036581
2025	6 9105212	6 9105212	27 2217131	27 2217131	27 2217131	35 1282627	9 8633427	9 8633427	4 6220575	14 4854002
2026	6 9541531	6 9541531	26 9625479	26 9625479	26 9625479	35 7762341	9 7370426	9 7370426	4 5791499	14 3161925
2027	6 8879479	6 8879479	26 2010053	26 2010053	26 2010053	35 0644998	9 7416537	9 7416537	4 6064941	14 3686195
2028	6 9307492	6 9307492	26 2010691	26 2010691	26 2010691	35 9268765	9 7258074	9 7258074	4 5647043	14 2905117
2029	6 7765900	6 7765900	26 9963961	26 9963961	26 9963961	35 6819829	9 6100733	9 6100733	4 4591601	14 0692334
2030	6 9307655	6 9307655	26 4528076	26 4528076	26 4528076	36 2059309	9 7506431	9 7506431	4 5247878	14 2754309
2031	6 9867264	6 9867264	26 8125532	26 8125532	26 8125532	36 1823406	9 7697874	9 7697874	4 5591574	14 3289448
2032	6 8965961	6 8965961	26 9963961	26 9963961	26 9963961	35 6819829	9 6100733	9 6100733	4 4591601	14 0692334
2033	6 9980293	6 9980293	26 5272790	26 5272790	26 5272790	35 0644998	9 7416537	9 7416537	4 6064941	14 3686195
2034	6 7765900	6 7765900	27 9826142	27 9826142	27 9826142	36 9819687	9 9576442	9 9576442	4 6221587	14 5798029
2035	7 1485342	7 1485342								

a) Unit rates as shown constitute the rate for the indicated pumping plants, powerplants, and reservoirs. Cumulative unit rates as shown constitute the total rate, cumulative from the Sacramento-San Joaquin Delta, applicable to deliveries from or downstream of the indicated pumping plants and powerplants. Excludes extra peaking service costs.

OF TRANSPORTATION CHARGE^(a)

(in dollars per acre-foot)

Sheet 2 of 4

Calendar Year	CALIFORNIA AQUEDUCT (Continued)									
	Reach 14A		Reach 15A		Reach 16A		Reach 17E		Reach 18A	
	Buena Vista Pumping Plant		Wheeler Ridge Pumping Plant		Wind Gap Pumping Plant		A.D. Edmonston Pumping Plant		Alamo Powerplant	
	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate
(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	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0 3333333	2 0612112	0	0	0	0	0	0	0	0
1971	1 3594550	2 6528299	4 9729730	7 6258029	0	0	0	0	0	0
1972	1 0808850	2 5394771	1 1418280	3 6813051	2 2892599	5 9705650	7 3206022	13 2911672	0	0
1973	0 9844807	2 5228090	1 2143719	3 7371809	2 1051633	5 8423442	7 4512435	13 2935877	0	0
1974	0 9223291	2 3932591	1 0924098	3 4856689	1 8449022	5 4305711	6 9004732	12 3310443	0	0
1975	0 8190849	2 3755463	0 9574493	3 3329956	1 9610412	5 2940368	6 9962702	12 2903070	0	0
1976	0 9626676	2 6731771	1 0211874	3 6943645	2 2275746	5 9219391	7 9384515	13 8603906	0	0
1977	1 0884667	3 4544078	1 3629729	4 8173807	2 9115870	7 7289677	9 9329609	17 6619286	0	0
1978	1 0402589	3 2532284	1 1360690	4 3809274	2 2079627	6 5972601	7 9468381	14 5440982	0	0
1979	1 112491	3 905938	1 2670947	5 1676885	2 6990471	7 8667356	9 6503665	17 5710121	0	0
1980	1 3774380	3 6943881	1 5339836	5 2277717	3 2708674	8 4986351	11 3036047	19 8022438	0	0
1981	1 1409430	3 9426265	1 1927814	5 1354079	2 4900268	7 6254347	8 9914362	16 6168709	0	0
1982	1 7473162	4 4934814	1 8702574	6 3637368	4 0676991	10 4314379	14 8776867	25 3091246	0	0
1983	0 8380001	2 2369997	0 9770001	3 2139998	1 9799995	5 1939993	6 2790005	11 4729999	0	0
1984	6 0985457	17 5155275	7 4289955	24 9445230	15 8777068	40 8222298	55 0189568	95 8411866	0	0
1985	5 0678866	14 1456862	6 1673084	20 3129946	13 1321654	33 4451600	45 3658545	78 6110145	-2 5331428	76 2778717
1986	4 5001893	12 5497899	5 4745963	18 0243862	11 6311859	29 6555721	40 1109687	69 7665408	-8 4778816	61 2886592
1987	4 4933136	12 5314911	5 4861940	17 9976871	11 6129430	29 6106301	40 0472685	69 6578986	-8 4804180	61 1774806
1988	4 4564326	12 4445424	5 4212352	17 8657776	11 5155389	29 3813165	39 7059663	69 0872828	-8 4794480	60 6078348
1989	4 4551796	12 4369663	5 4197629	17 8567292	11 5124050	29 3691342	39 6959379	69 0650721	-8 4800994	60 5849727
1990	5 1685983	14 2377658	6 3328730	20 5706488	13 5223235	34 0929623	46 8803421	80 9733044	-8 5469627	72 4263417
1991	5 2736592	14 4967635	6 4661721	20 9620356	13 8149732	34 7779088	47 9674315	82 7453403	-8 6874923	74 0578480
1992	5 3245797	14 6358166	6 5299856	21 1656022	13 9544867	35 1200889	48 5243133	83 6444022	-8 5106690	75 1337332
1993	5 3416087	14 7188298	6 5459436	21 2647734	13 9853432	35 2501166	48 7618452	84 0119418	-8 4221730	75 3897888
1994	5 3798591	14 8545622	6 5919890	21 4465512	14 0989201	35 5457133	49 1976863	84 7431576	-8 3411440	76 4020136
1995	5 4982023	15 2174217	6 7355359	21 9529576	14 4257364	36 3786940	50 3519065	86 7306005	-10 4248250	76 3057755
1996	5 5543653	15 3497614	6 7990732	22 1488346	14 5368421	36 6856767	50 7524966	87 4381733	-10 5276721	76 9105012
1997	5 6734521	15 7096977	6 9380703	22 6477680	14 8661753	37 5139433	51 6932625	89 2072058	-10 5521936	78 6550122
1998	5 6128278	15 6038692	6 8371991	22 4410683	14 7217820	37 1628503	50 9391504	88 1020007	-10 1982310	77 9037697
1999	5 7203781	15 9848859	6 9600108	22 9448967	15 0125548	37 9574515	51 6571726	89 6146241	-9 5575860	80 0570381
2000	5 7341882	16 0238380	6 9799381	23 0037761	15 1156577	38 1194338	51 6434601	89 7628939	-9 5551070	80 2077889
2001	5 9831296	16 6928913	7 2727043	23 9659556	15 7284364	39 6940320	53 6999069	93 3939389	-9 5941347	83 7998042
2002	6 2320377	17 3699797	7 5746558	24 9446355	16 3714663	41 3161028	55 7309668	97 0470686	-9 5484477	87 4986202
2003	6 1543810	17 1786088	7 4637205	24 6423203	16 0525443	40 6948736	54 5896908	95 2845444	-8 7954892	86 4890752
2004	6 2207873	17 3712888	7 5443990	24 9156858	16 2549227	41 0706008	54 9028923	95 9734408	-8 4223038	87 5511370
2005	6 3009394	17 5249718	7 6332731	25 1582449	16 2807809	41 4390258	55 3017339	96 7407597	-8 4232625	88 3194332
2006	6 4295470	17 8423260	7 7899459	25 6322719	16 5662529	42 1985248	56 2374495	98 4359743	-8 4227177	90 0132566
2007	6 5180576	18 1417905	7 8963309	26 0381214	16 8633027	42 9014241	57 2889654	100 1903895	-8 4237179	91 7666716
2008	6 7782214	18 8697969	8 2135424	27 0833393	17 5449585	44 6287978	59 6604581	104 2887559	-8 4261192	95 8626367
2009	6 8219869	18 4323997	8 0230564	26 4545661	17 1321599	43 5876360	58 1811901	101 7688801	-8 4276541	93 3411520
2010	6 6537454	19 0807809	8 3056455	27 3863264	17 7444901	45 1309165	60 3154096	105 4463261	-8 4283107	97 0180154
2011	6 8849045	19 1679687	8 3437137	27 5116824	17 8269463	45 3386287	60 5934337	105 9320624	-8 4285065	97 5035559
2012	7 1628720	19 9448098	8 6826701	28 6274799	18 5613882	47 1886861	63 1620954	110 3509635	-8 4327393	101 9182242
2013	7 0157648	19 5354442	8 5032969	28 0386411	18 1726613	46 2113024	61 7636339	107 9749363	-8 4298811	99 5450552
2014	7 3342883	20 4270661	8 8917088	29 1387749	19 0142136	48 3329885	64 9097923	113 0239608	-8 4320434	104 5919174
2015	7 8109338	21 7591245	9 4729567	31 2320862	20 2735544	51 5059416	69 0873595	120 5930018	-8 4365544	112 1564417
2016	8 0143364	22 3290263	9 7209887	32 0500250	20 8109955	52 8610205	70 9544799	123 8155004	-8 4348463	115 3806541
2017	8 2162774	22 8553689	9 4672863	32 8226552	21 3445763	54 1672119	72 8222953	126 9895862	-8 4368470	118 5527392
2018	8 3768452	23 2453758	10 1630813	33 4084391	21 7688878	55 1773269	74 3076242	129 4849511	-8 4388349	121 0461162
2019	8 4141003	23 2815748	10 2084829	33 4900577	21 8307365	55 3207942	74 6521249	129 9729191	-8 4377240	121 5351951
2020	8 4005942	23 1932515	10 1920616	33 3853131	21 7579369	55 1432500	74 4807393	129 6239893	-8 4351084	121 1888809
2021	8 3857290	23 2014811	10 1812902	33 3827713	21 7874121	55 1701834	74 4689560	129 8391394	-8 4423294	121 3968100
2022	8 2794534	22 8797060	10 0816216	32 9613276	21 4221762	54 1350338	73 9747807	126 3882645	-8 4382791	119 9500054
2023	8 3092450	22 8845068	10 0980238	32 9825306	21 4033053	54 3858359	74 1350738	128 5209097	-3 0989649	125 4219448
2024	8 2311457	22 5880900	10 0027670	32 5908570	21 0498256	53 6406826	73 3651430	127 0582856	-3 0976518	123 9081738
2025	8 2839336	22 7371664	10 0671723	32 8043387	21 0437054	53 8480441	73 8341990	127 6822431	-3 0997578	124 5824853
2026	8 2616236	22 5652817	10 0399967	32 7052784	20 8873352	53 5926136	73 6085338	127 2011474	-3 0978887	124 1032587
2027	8 3111314	22 7965316	10 1033334	32 7965316	20 9219842	53 8188492	74 0662952	127 8851444	-3 0998054	124 7853390
2028	8 0981516	22 3795286	10 0087676	32 5282962	20 2358499	53 2518811	73 3716199	126 6235010	-3 0986105	123 5248905
2029	8 2191551	22 5877556	10 0193616	32 6071172	20 8518545	53 4589717	73 8207477	127 2797194	-3 1000794	124 1796400
2030	8 1868052	22 4773169	9 9710989	32 4484158	20 8514058	53 3003216	73 7280088	127 0283304	-3 0984030	123 924274
2031	8 1947830	22 5237278	10 0005743	32 5243021	21 0195751	53 5438772	74 1434410	127 6873182	-3 1005622	124 5867560
2032	8 0376749	22 1269063	9 8074455	31 9143538	20 7331108	52 6474646	73 0156663	125 6631309	-3 0989754	122 5641595
2033	8 0981516	22 3795286	10 0087676	32 5282962	21 0208232	53 2518811	73 3716199	126 6235010	-3 1001961	123 9277186
2034	7 7934120	21 6208138	9 5066530	31 1274848	20 3417553	51 4692401	71 2648162	122 7340563	-3 0991893	119 6348670
2035	8 1616032	22 7414061	9 9544050	32 6958111	21 4400224	54 1358433	75 0756321	129 2114675	-3 1011851	126 1102824

- b) For the period 1968 through 1986, 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)

Sheet 3 of 4

Calendar Year	CALIFORNIA AQUEDUCT (Continued)							
	Reach 22B		Reach 26A		Reach 29A		Reach 29G	
	Pearblossom Pumping Plant		Devil Canyon Powerplant		Oso Pumping Plant		William E. Warne Powerplant	
	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)	
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	14 2519509	27 5431181	-2 3717647	25 1713534	1 4212193	14 7123865	0	0
1973	3 4431782	17 7262422	-8 4298618	9 2963804	1 0210537	14 3146414	0	0
1974	3 1739313	15 7742225	-5 1043660	10 6698565	0 9241725	13 2552168	0	0
1975	3 1739313	15 4642383	-5 6510611	9 8131772	0 9362286	13 2265356	0	0
1976	3 9391330	17 7995236	-6 4449941	11 3545295	0 8622774	14 7226680	0	0
1977	3 4988957	21 1608243	-11 6274558	9 5333685	0 9076172	18 5695458	0	0
1978	4 0960690	18 6401672	-8 1314274	10 5087398	0 9832242	15 5273224	0	0
1979	5 1788746	22 6959767	-9 5825772	13 1133995	0 9554252	18 4725273	0	0
1980	4 3448459	24 1470897	-8 3797007	15 7673890	1 7923052	21 5945490	0	0
1981	3 7143949	20 3312658	-4 3565125	15 9747533	1 2092253	17 8260962	0	0
1982	7 3394724	32 6485970	-7 9155439	24 7330531	1 4270113	26 7361359	-2 1746823	24 5614536
1983	1 9269988	13 3999986	-23 0799933	-9 6800027	1 5289979	13 0019977	-12 9129974	0 0890003
1984	17 2227150	113 0639016	-31 3495960	81 7143056	7 5668958	103 4080824	-14 6084041	88 7996783
1985	14 2580928	90 5359645	-30 4855444	60 0504201	6 4295162	85 2405307	-15 4177922	69 8227385
1986	12 6104879	73 8991471	-30 1004262	43 7987209	5 7740364	75 5405772	-15 1954439	60 3451333
1987	12 5906403	73 7681209	-30 0214235	43 7466974	5 7659399	75 4238385	-14 9825457	60 4412928
1988	12 4833208	73 0911556	-30 0792599	43 0118957	5 7232874	74 8105702	-14 9477049	59 8628653
1989	12 4793321	73 0643048	-30 0908037	42 9735011	5 7216927	74 7867648	-14 9709093	59 8158555
1990	15 3375312	87 7638729	-33 6404780	54 1233949	6 1973116	87 1706160	-15 0537042	72 1169118
1991	15 8284127	89 8862607	-34 1797311	55 7065296	6 2697862	89 0151265	-15 0869235	73 9282030
1992	15 9402122	91 0739454	-34 1485544	56 9253910	6 3275653	89 9719675	-15 1118192	74 8601483
1993	16 0151509	91 4049397	-32 2167194	57 5004423	6 3752163	90 3871781	-15 0720814	75 3150967
1994	16 1182081	92 5202217	-31 3446619	58 7955598	6 4201702	91 1633278	-15 0680401	76 0701312
1995	18 2497831	94 5555586	-39 3312917	55 2242669	6 5551771	93 2857776	-13 6939449	79 5918327
1996	18 6161402	95 5266414	-39 7054567	55 8211847	6 5968311	94 0350044	-13 4029113	80 6320931
1997	19 0251660	97 6835282	-39 7527530	57 3436213	6 7038552	95 9110610	-12 8172674	83 9037936
1998	18 2762422	96 1800119	-38 1225591	58 0574528	6 7239191	94 8259198	-12 6722117	82 1537081
1999	17 6411885	97 6982266	-35 5132393	62 1849873	6 9828345	96 5974586	-12 3585703	84 2388883
2000	17 6371494	97 8449363	-35 3941678	62 4507685	6 9984954	96 7613893	-12 6232367	84 1381526
2001	18 4526562	102 2524604	-35 3249860	66 9274744	7 2630037	100 6569426	-12 2147038	88 4422388
2002	19 1336015	106 6322224	-35 4594645	71 1727579	7 5354210	104 5824896	-11 8635588	92 7189308
2003	17 6920786	104 1811538	-32 2167194	71 9644344	7 7821448	103 7821448	-11 0860974	94 0860974
2004	17 5515228	104 8550887	-30 6047531	74 2503356	7 7848528	103 7582936	-11 6869897	92 0713039
2005	17 5154228	105 8348560	-30 5919800	75 2428760	7 8999590	104 6407187	-11 5679986	93 0727201
2006	17 9015113	107 9147679	-30 4804613	77 4343066	8 0047139	106 4406882	-11 4713794	94 9693088
2007	18 1841789	109 9508505	-30 6072292	79 3436213	8 1241058	108 3144953	-11 1722370	97 1422583
2008	18 9305313	114 7931680	-30 5235316	84 2696364	8 4253129	112 7140688	-10 9341241	101 7799447
2009	18 4752960	111 8164480	-30 4159175	81 4005305	8 2444341	110 0132402	-11 2758841	98 7373561
2010	19 1500813	116 1680967	-30 4293699	85 7387268	8 5127276	113 9590537	-11 0105501	102 9485036
2011	19 2410676	116 7446235	-30 5248594	86 2197641	8 5488117	114 4808741	-11 0054240	103 4754501
2012	20 0528904	121 9711146	-30 3132884	91 6578262	8 8672202	119 2181837	-10 6857422	108 5324415
2013	19 6253434	119 1703986	-30 4016520	88 7671265	8 6774603	116 6523966	-10 7357733	105 9166233
2014	20 5521623	125 1440797	-30 4281741	94 7159056	9 0316370	122 0555978	-10 4596786	111 5959192
2015	21 9387798	134 0952215	-30 4540092	103 6412123	9 5834180	130 1764191	-10 4119153	119 7645038
2016	22 5318448	137 9124989	-30 3646305	107 5478684	9 8188180	133 6343184	-10 4158757	123 2184427
2017	23 1841789	141 6719164	-30 3516693	111 3202471	10 0527338	137 0423200	-10 3578138	126 6845062
2018	23 5861616	144 6322778	-30 3152897	114 3169881	10 2386023	139 7235534	-10 2061602	129 5173932
2019	23 6950831	145 2302782	-30 3858309	114 8444473	10 2817048	140 2546239	-10 1774769	130 0771470
2020	23 6569750	144 8458559	-30 3825100	114 4633459	10 2661059	139 8900952	-10 0076191	129 8824761
2021	23 7286507	145 1254607	-30 2067161	114 9187446	10 2955631	140 1347025	-10 1135923	130 0211102
2022	23 5455656	143 4955710	-30 2768454	113 2187256	10 2221186	138 6104031	-10 0564904	128 5539127
2023	23 6313713	149 0531161	-30 2561896	118 7971265	10 2564492	138 7755889	-10 0352793	128 7412796
2024	23 4053168	147 3134906	-30 2450870	117 0684036	10 1662367	137 1720623	-10 0952571	127 0768052
2025	23 5573291	148 1398144	-30 2023217	117 9374927	10 2273684	137 9096115	-10 0574153	127 8521962
2026	23 4942587	147 5975174	-30 2985320	117 2989854	10 2015643	137 4027117	-10 0635181	127 3391936
2027	23 6366340	148 4219730	-30 2245349	118 1974381	10 2588792	138 1440236	-10 0766194	128 0674042
2028	23 4193927	146 9442832	-30 2874230	116 6586802	9 9615364	136 5850374	-10 0724521	126 5125853
2029	23 5594819	147 7391219	-30 2200830	117 5190389	9 8091044	137 0888238	-10 0668056	127 0220182
2030	23 5608693	147 4902967	-30 2675443	117 2227524	9 7465245	136 7748549	-10 0885324	126 6863225
2031	23 7441329	148 3308889	-30 1936573	118 1372316	9 7579434	137 4452616	-10 0590776	127 3861840
2032	23 3085833	145 8727888	-30 2633285	115 6094103	9 5437530	135 2068839	-10 0908506	125 1160333
2033	23 5038080	147 4315266	-30 2910499	117 1404767	9 5819629	136 6098776	-10 0679440	126 5419336
2034	22 6419259	142 2767929	-30 2727828	112 0040101	9 0942860	131 8283423	-10 0834013	121 7449410
2035	23 7368520	149 8471344	-30 1941790	119 6529554	9 3871238	138 5985913	-10 0373867	128 5612046

OF TRANSPORTATION CHARGE^(a)

(in dollars per acre-foot)

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Calendar Year	CALIFORNIA AQUEDUCT (Continued)					
	Reach 29J		Reach 31A		Reach 33A	
	Castaic Powerplant		Las Perillas and Badger Hill Pumping Plants		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
	(29)	(30)	(31)	(32)	(33)	(34)
1962	0	0	0	0	0	0
1963	0	0	0	0	0	0
1964	0	0	0	0	0	0
1965	0	0	0	0	0	0
1966	0	0	0	0	0	0
1967	0	0	0	0	0	0
1968	0	0	1 5014866	4 1182219	0	0
1969	0	0	1 2624065	3 0719381	0	0
1970	0	0	1 6309699	3 3588478	0	0
1971	0	0	1 4985537	2 7919286	0	0
1972	-2 9350830	11 7773035	1 7489056	3 2074977	0	0
1973	-6 8099448	7 5046966	1 4609575	2 9992858	0	0
1974	-7 4013274	5 8538894	1 4255635	2 8964935	0	0
1975	-6 5604921	6 6660435	1 0379624	2 5944238	0	0
1976	-6 7213324	8 0013356	1 5465478	3 2570573	0	0
1977	-26 6745694	-8 1050236	1 5544740	3 9204151	0	0
1978	-12 0403532	3 4869692	1 9052093	4 1181788	0	0
1979	-18 3116870	0 1608403	1 5303317	4 3196764	0	0
1980	-26 0364188	-4 4418698	1 5143878	3 8313379	0	0
1981	-14 1872705	3 6388257	1 4545894	4 2562729	0	0
1982	-9 5722266	14 9892270	2 8057864	5 5519496	0	0
1983	-27 0050001	-26 9159998	0 0980023	1 4970019	0	0
1984	-31 5431504	57 2565279	7 0030585	18 4200403	0	0
1985	-29 2283409	40 5943976	5 4835218	14 5613214	0	0
1986	-27 4469933	32 8981400	4 8350989	12 8846995	0	0
1987	-26 6745694	33 5133422	4 8273615	12 9655390	0	0
1988	-26 7478075	33 1150578	4 7850000	12 7731098	0	0
1989	-26 5905319	33 2253236	4 7843746	12 7661613	0	0
1990	-26 5036631	45 6132487	5 2549205	14 3240880	0	0
1991	-26 4720258	47 4561772	5 3241940	14 5472983	0	0
1992	-26 3698162	48 4903321	5 3741972	14 6852341	0	0
1993	-26 3321886	48 9829081	5 4111234	14 7883445	0	0
1994	-26 3115790	49 7585513	5 4555408	14 9302439	0	0
1995	-25 3413933	54 2504394	5 5893738	15 3085932	0	0
1996	-25 2932567	55 3388364	5 6305429	15 4259390	0	0
1997	-25 2020516	57 8917420	5 7364187	15 7726643	0	0
1998	-25 1689221	56 9847860	5 7133410	15 7043824	0	0
1999	-25 1269098	59 1119785	5 9188377	16 1833455	0	0
2000	-25 1392475	58 9989051	5 9172297	16 2068795	0	0
2001	-25 0823026	63 3599362	6 1599453	16 8697070	0	0
2002	-25 0397151	67 6792157	6 4106122	17 5485542	0	0
2003	-25 0104548	66 0756426	6 4465114	17 4707392	0	0
2004	-24 9839700	67 0873339	6 5764687	17 7201682	0	0
2005	-24 9727092	68 1000109	6 6274897	17 8515221	0	0
2006	-24 9517020	70 0176068	6 7477206	18 1604996	0	0
2007	-24 9198369	72 2226216	6 8822228	18 5059581	0	0
2008	-24 8819874	76 8979573	7 1800396	19 2716151	0	0
2009	-24 9183225	73 8190336	7 0011804	18 8115932	0	0
2010	-24 8799867	78 0685169	7 2664904	19 4935259	0	0
2011	-24 8772064	78 5982437	7 3022130	19 5852772	0	0
2012	-24 8267581	83 7056834	7 6204307	20 4023685	0	0
2013	-24 8292103	81 0874130	7 4520275	19 9716069	0	0
2014	-24 7870731	86 8088461	7 8166377	20 9094155	0	0
2015	-24 7749591	94 9895447	8 3622959	22 3104916	0	0
2016	-24 7749431	98 4434996	8 5951502	22 9098401	0	0
2017	-24 7027070	101 9224992	8 8263316	23 4654231	0	0
2018	-24 7313686	104 7860246	9 0101726	23 8786852	0	0
2019	-24 7228851	105 3542619	9 0528008	23 9202753	0	0
2020	-24 6916912	105 1907849	9 0373723	23 8300296	0	0
2021	-24 7111944	105 3099158	9 0665146	23 8822667	0	0
2022	-24 7009081	103 8530046	8 9938751	23 5941677	0	0
2023	-24 6971980	104 0440816	9 0280362	23 6032980	0	0
2024	-24 7082119	102 3365855	8 9386112	23 2955555	0	0
2025	-24 7011047	103 1510915	8 9990892	23 4523220	0	0
2026	-24 7024480	102 6367456	8 9735438	23 3772019	0	0
2027	-24 7041111	103 3632931	9 0302064	23 5156066	0	0
2028	-24 7039121	101 8086732	8 9442296	23 2604221	0	0
2029	-24 7026115	102 3194067	8 9998095	23 3684100	0	0
2030	-24 7066939	101 9796286	8 9998327	23 2903444	0	0
2031	-24 7009045	102 6852795	9 0724768	23 4014216	0	0
2032	-24 7069692	100 4090641	8 9554711	23 0247045	0	0
2033	-24 7027348	101 3919988	9 0871572	23 3625881	0	0
2034	-24 7057345	97 0392065	8 7998476	22 6272674	0	0
2035	-24 6968679	103 8643367	9 2826160	23 8624189	0	0

TABLE B-18: VARIABLE OMP&R COMPONENT OF

(in dollars)

Sheet 1 of 4

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	21,723	0	21,723	76,194	40,671	664,047	780,912	0	0	0
1979	16,246	0	16,246	136,733	76,938	650,879	864,550	0	0	0
1980	19,970	0	19,970	100,436	66,004	526,410	692,850	0	0	0
1981	21,692	0	21,692	122,391	136,930	549,796	809,117	0	0	0
1982	12,385	0	12,385	144,949	69,763	963,834	1,178,546	0	0	0
1983	3,071	0	3,071	14,317	9,484	260,546	284,347	0	0	0
1984	28,407	0	28,407	700,722	797,745	2,371,672	3,870,139	0	0	0
1985	26,030	0	26,030	595,785	679,636	1,941,816	3,217,237	0	0	0
1986	28,017	0	28,017	545,118	624,939	1,713,229	2,883,286	0	0	0
1987	46,414	35,234	81,648	563,626	647,197	1,710,312	2,921,135	0	0	0
1988	49,153	38,866	88,019	604,862	695,591	1,774,262	3,074,715	0	0	0
1989	54,506	41,917	96,423	623,899	718,491	1,811,320	3,153,710	0	0	0
1990	102,656	50,228	152,884	713,240	822,456	2,050,566	3,586,262	0	0	0
1991	112,420	55,545	167,965	767,723	867,075	2,122,529	3,757,327	363,682	661,698	1,025,380
1992	122,194	63,494	185,688	819,275	908,029	2,184,733	3,912,037	367,131	667,973	1,035,104
1993	133,368	72,778	206,146	836,133	910,945	2,156,343	3,903,421	369,709	672,663	1,042,372
1994	145,194	82,476	227,670	888,213	932,624	2,220,531	4,041,368	373,257	679,117	1,052,374
1995	160,436	111,486	271,922	956,187	956,187	2,276,637	4,189,011	382,715	696,326	1,079,041
1996	172,728	128,280	301,008	1,009,162	963,291	2,293,550	4,266,003	385,649	701,664	1,087,313
1997	187,295	135,149	322,444	1,075,326	981,820	2,337,665	4,394,811	394,316	717,436	1,111,752
1998	197,514	137,954	335,468	1,069,333	976,347	2,324,636	4,370,316	392,610	714,329	1,106,939
1999	215,709	146,701	362,410	1,103,912	1,007,919	2,399,809	4,511,640	404,584	736,116	1,140,700
2000	228,651	150,753	379,404	1,103,737	1,007,760	2,399,428	4,510,925	405,172	737,186	1,142,358
2001	249,881	159,265	409,146	1,148,617	1,048,737	2,496,993	4,694,347	421,743	767,336	1,189,079
2002	269,778	165,610	435,388	1,194,986	1,091,075	2,597,797	4,883,858	438,713	798,213	1,236,926
2003	282,942	166,623	449,565	1,196,311	1,092,283	2,600,674	4,889,268	436,769	794,674	1,231,443
2004	300,199	169,884	470,083	1,217,485	1,111,616	2,646,707	4,975,808	443,005	806,020	1,249,025
2005	314,633	172,164	486,797	1,226,841	1,120,159	2,667,044	5,014,044	446,288	811,995	1,258,283
2006	329,902	176,974	506,876	1,248,869	1,140,272	2,714,933	5,104,074	454,012	826,048	1,280,060
2007	349,506	180,407	529,913	1,273,501	1,162,762	2,768,482	5,204,745	462,649	841,763	1,304,412
2008	376,419	188,255	564,674	1,328,087	1,212,601	2,887,146	5,427,834	481,790	876,588	1,358,378
2009	379,042	184,510	563,552	1,295,296	1,182,662	2,815,860	5,293,818	470,291	855,664	1,325,955
2010	405,120	191,499	596,619	1,343,912	1,227,051	2,921,550	5,492,513	487,338	886,683	1,374,021
2011	421,921	193,975	615,896	1,350,455	1,233,023	2,935,771	5,519,249	489,631	890,855	1,380,486
2012	452,977	202,480	655,457	1,408,727	1,286,229	3,062,449	5,757,405	510,060	928,022	1,438,082
2013	458,523	200,308	658,831	1,377,963	1,258,140	2,995,571	5,631,674	499,291	908,429	1,407,720
2014	496,771	211,511	708,282	1,444,807	1,319,171	3,140,882	5,904,860	522,736	951,086	1,473,822
2015	548,322	227,820	776,142	1,544,736	1,410,411	3,358,124	6,313,271	557,762	1,014,815	1,572,577
2016	579,975	235,532	815,507	1,587,453	1,449,413	3,450,985	6,487,851	572,746	1,042,077	1,614,823
2017	612,035	243,128	855,163	1,629,779	1,488,059	3,542,999	6,660,837	586,636	1,067,349	1,653,985
2018	641,937	249,453	891,390	1,662,551	1,517,982	3,614,241	6,794,774	596,967	1,086,146	1,683,113
2019	661,232	250,668	911,900	1,669,119	1,523,978	3,628,518	6,821,615	598,007	1,088,038	1,686,045
2020	678,235	253,242	931,477	1,665,052	1,520,264	3,619,676	6,804,992	595,750	1,083,933	1,679,683
2021	683,279	254,149	937,428	1,670,455	1,525,198	3,631,426	6,827,079	597,057	1,086,309	1,683,366
2022	677,805	252,113	929,918	1,657,151	1,513,051	3,602,500	6,772,702	589,854	1,073,204	1,663,058
2023	680,379	253,071	933,450	1,663,351	1,518,713	3,615,982	6,798,046	590,083	1,073,619	1,663,702
2024	673,640	250,564	924,204	1,646,961	1,503,748	3,580,351	6,731,060	582,389	1,059,622	1,642,011
2025	678,198	252,259	930,457	1,658,095	1,513,914	3,604,556	6,776,565	586,308	1,066,752	1,653,060
2026	676,273	251,543	927,816	1,652,989	1,509,251	3,593,452	6,755,692	584,431	1,063,336	1,647,767
2027	680,543	253,131	933,674	1,663,030	1,518,418	3,615,283	6,796,731	587,890	1,069,631	1,657,521
2028	674,064	250,721	924,785	1,645,707	1,502,602	3,577,623	6,725,932	581,511	1,058,023	1,639,534
2029	678,252	252,279	930,531	1,654,282	1,510,431	3,596,266	6,760,979	584,210	1,062,935	1,647,145
2030	678,254	252,280	930,534	1,652,636	1,508,929	3,592,688	6,754,253	582,259	1,059,384	1,641,643
2031	683,729	254,317	938,046	1,664,387	1,519,658	3,618,235	6,802,280	585,036	1,064,438	1,649,474
2032	674,910	251,036	925,946	1,641,371	1,498,643	3,568,198	6,708,212	575,618	1,047,302	1,622,920
2033	684,835	254,728	939,563	1,665,473	1,520,649	3,620,593	6,806,715	584,065	1,062,670	1,646,735
2034	663,182	246,674	909,856	1,612,967	1,472,709	3,506,450	6,592,126	565,681	1,029,224	1,594,905
2035	699,565	260,207	959,772	1,701,171	1,553,243	3,698,196	6,952,610	596,560	1,085,406	1,681,966
TOTAL	21,246,410	9,063,261	30,309,671	67,722,167	63,876,677	159,160,021	290,758,865	22,683,961	41,272,097	63,956,058

TRANSPORTATION CHARGE FOR EACH CONTRACTOR^(a)

(in dollars)

Sheet 2 of 4

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	470,866	0	5,595	16,550	609,070
1971	34,872	53,097	7,747	0	0	769,054	4,785	6,353	158,419	1,034,327
1972	44,601	61,907	8,452	0	0	1,123,600	2,042	7,375	376,900	1,624,877
1973	28,247	33,931	4,615	0	0	764,825	2,308	3,017	77,630	914,573
1974	28,096	49,114	4,413	0	46,752	671,406	2,207	3,114	106,332	911,434
1975	27,760	63,122	4,670	0	34,574	842,482	2,490	3,920	134,257	1,113,275
1976	38,108	70,851	5,131	0	94,653	965,096	2,737	4,910	100,597	1,282,083
1977	19,896	26,387	1,746	0	84,310	488,473	3,620	2,602	42,779	669,813
1978	46,791	116,601	1,005	0	205,193	1,718,276	4,624	6,727	26,673	2,125,890
1979	82,670	107,513	4,851	0	193,349	2,361,041	5,579	13,099	432,686	3,200,788
1980	53,187	94,995	2,072	0	129,078	1,827,720	5,097	8,325	174,800	2,295,274
1981	54,054	114,869	16,415	0	230,129	2,129,668	6,444	8,961	233,767	2,794,307
1982	70,509	112,593	991	0	152,758	2,638,428	4,805	6,466	50,944	3,037,494
1983	18,951	60,017	0	0	12,779	1,057,576	4,967	3,891	1,407	1,159,588
1984	233,934	514,906	68,502	0	1,057,043	12,364,563	35,393	37,163	185,675	14,497,179
1985	184,929	428,472	27,234	0	958,839	10,634,128	30,865	29,999	1,075,719	13,370,185
1986	163,636	396,845	24,149	0	890,828	9,853,316	29,783	27,604	953,877	12,340,038
1987	163,391	413,162	24,114	0	930,877	10,355,375	32,153	28,101	952,524	12,899,697
1988	162,219	427,363	23,965	0	948,746	10,341,200	31,953	29,025	861,917	12,826,388
1989	162,131	443,787	23,946	0	1,214,988	11,155,005	31,927	30,071	895,557	13,957,412
1990	181,915	523,291	27,208	0	1,644,637	13,058,065	36,277	34,821	1,074,696	16,580,910
1991	184,751	532,174	27,669	0	1,674,945	13,288,661	36,892	35,416	1,092,938	16,873,446
1992	186,502	537,246	27,933	0	1,691,226	13,416,167	37,244	35,681	1,103,358	17,035,357
1993	187,812	541,066	28,132	0	1,700,790	13,498,102	37,509	35,868	1,111,201	17,140,480
1994	189,614	546,690	28,424	0	1,716,914	13,627,537	37,899	36,179	1,122,752	17,306,009
1995	194,419	560,798	29,158	0	1,759,215	13,967,334	38,877	37,111	1,151,727	17,738,639
1996	195,910	565,195	29,387	0	1,773,425	14,081,626	39,181	37,344	1,160,754	17,882,822
1997	200,313	579,091	30,109	0	1,814,848	14,413,790	40,145	38,055	1,189,295	18,305,646
1998	199,446	576,483	29,974	0	1,802,304	14,326,670	39,964	37,695	1,183,938	18,196,474
1999	205,529	592,262	30,794	0	1,845,948	14,698,387	41,058	38,570	1,216,344	18,668,892
2000	205,828	593,713	30,869	0	1,851,345	14,735,962	41,158	38,575	1,219,323	18,716,773
2001	214,245	617,953	32,130	0	1,926,944	15,343,257	42,839	40,109	1,269,106	19,486,583
2002	222,867	642,659	33,414	0	2,004,122	15,962,524	44,551	41,695	1,319,847	20,271,679
2003	221,879	636,098	33,072	0	1,979,097	15,796,966	44,096	41,263	1,306,371	20,058,842
2004	225,046	642,992	33,431	0	1,998,847	15,974,457	44,574	41,730	1,320,529	20,281,606
2005	226,715	647,627	33,672	0	2,014,651	16,103,211	44,896	42,043	1,330,048	20,442,863
2006	230,638	658,517	34,238	0	2,049,650	16,386,007	45,651	42,777	1,352,414	20,799,892
2007	235,025	670,690	34,871	0	2,085,884	16,676,336	46,495	43,598	1,377,413	21,170,312
2008	244,750	697,684	36,275	0	2,169,655	17,350,001	48,366	45,419	1,432,852	22,025,002
2009	238,907	681,461	35,432	0	2,119,156	16,945,050	47,242	44,324	1,399,533	21,511,105
2010	247,567	705,500	36,681	0	2,193,894	17,545,286	48,908	45,946	1,448,903	22,272,685
2011	248,733	708,733	36,850	0	2,203,928	17,626,024	49,133	46,164	1,455,543	22,375,108
2012	259,110	737,517	38,346	0	2,293,490	18,345,097	51,128	48,104	1,514,659	23,287,451
2013	253,640	722,380	37,558	0	2,246,210	17,966,259	50,078	47,086	1,483,570	22,806,781
2014	265,549	755,453	39,278	0	2,348,990	18,791,831	52,372	49,319	1,551,494	23,854,286
2015	283,343	804,811	41,845	0	2,502,544	20,024,835	55,793	52,646	1,652,861	25,418,678
2016	290,955	825,958	42,944	0	2,568,228	20,552,510	57,259	54,076	1,696,291	26,088,221
2017	298,010	844,675	43,917	0	2,628,774	21,035,581	58,556	55,484	1,734,732	26,699,729
2018	303,260	857,913	44,606	0	2,673,520	21,390,185	59,474	56,494	1,761,919	27,147,371
2019	303,788	857,854	44,603	0	2,676,821	21,414,429	59,470	56,600	1,761,796	27,175,361
2020	302,641	853,537	44,378	0	2,665,728	21,325,268	59,171	56,353	1,752,930	27,060,006
2021	303,305	854,869	44,447	0	2,668,806	21,348,760	59,263	56,539	1,755,667	27,091,656
2022	299,645	842,437	43,801	0	2,631,782	21,054,052	58,401	56,095	1,730,134	26,716,347
2023	299,761	840,992	43,726	0	2,629,301	21,042,333	58,301	56,297	1,727,169	26,697,880
2024	295,854	828,395	43,071	0	2,592,239	20,751,864	57,428	55,750	1,701,298	26,325,899
2025	297,844	833,951	43,360	0	2,606,920	20,882,518	57,813	56,126	1,712,709	26,491,241
2026	296,891	831,091	43,211	0	2,596,903	20,809,917	57,615	55,917	1,706,834	26,398,379
2027	298,648	835,808	43,456	0	2,610,375	20,925,666	57,941	56,221	1,716,520	26,544,635
2028	295,407	826,044	42,948	0	2,581,278	20,685,751	57,265	55,501	1,696,469	26,240,663
2029	296,779	829,068	43,106	0	2,591,161	20,759,955	57,475	55,641	1,702,679	26,335,864
2030	295,788	824,562	42,871	0	2,580,071	20,663,871	57,162	55,437	1,693,425	26,213,187
2031	297,197	826,780	42,986	0	2,589,023	20,727,604	57,316	55,688	1,697,980	26,294,574
2032	292,413	811,795	42,207	0	2,543,859	20,358,963	56,277	54,777	1,667,204	25,827,495
2033	296,705	823,692	42,826	0	2,577,476	20,631,118	57,102	55,579	1,691,638	26,176,136
2034	287,366	797,842	41,482	0	2,493,831	19,959,562	55,310	53,840	1,638,549	25,327,782
2035	303,052	841,255	43,739	0	2,626,288	21,021,191	58,320	56,759	1,727,707	26,678,311
TOTAL	13,423,800	36,951,705	1,990,541	0	110,729,939	910,584,948	2,545,560	2,467,128	75,057,765	1,153,751,386

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)
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	779	0	0	12,781	0	4,492	1,516	0	32,093	0
1973	286	0	102,811	6,895	159,535	3,854	0	0	301,444	0
1974	15,558	0	100,954	9,891	157,742	4,932	221	0	177,172	6,529
1975	99,182	0	108,250	12,758	170,106	6,391	0	0	136,060	53,482
1976	385,090	0	135,276	17,835	213,595	8,163	0	0	139,356	68,933
1977	197,849	0	0	23,468	0	1,960	1,693	0	236,741	85,762
1978	644,256	0	187,967	22,536	285,195	3,024	0	0	42,612	81,664
1979	1,059,662	3	228,390	28,596	340,439	2,330	90,782	0	237	3,803
1980	1,433,822	-5,375	262,816	29,919	410,500	3,783	96,587	0	0	17,108
1981	1,318,964	20,964	246,110	30,192	386,295	21,104	81,326	0	255,932	57,813
1982	1,272,821	142,636	435,075	40,419	685,621	0	342,811	0	207,979	311,611
1983	378,161	-255,056	194,929	12,206	308,200	436	0	0	-58,023	-7,106
1984	2,055,027	675,627	1,782,792	167,899	2,826,599	0	0	0	588,343	1,013,259
1985	1,589,097	527,729	1,538,115	148,479	2,444,471	0	0	0	540,455	450,377
1986	1,295,092	477,024	1,345,703	135,973	2,143,073	0	0	52,096	420,467	429,228
1987	1,311,278	636,754	1,433,389	156,388	2,323,696	0	0	290,593	433,092	546,834
1988	1,351,797	827,876	1,509,478	169,572	2,485,100	0	0	345,465	464,527	593,564
1989	1,351,287	830,631	1,598,135	184,853	2,666,848	0	0	408,949	464,113	636,009
1990	1,665,806	1,140,332	2,027,346	241,350	3,343,804	0	4,458,404	579,411	3,247,403	1,001,282
1991	1,777,388	1,186,403	2,076,374	257,974	3,424,666	133,305	4,566,222	651,709	2,373,099	1,046,169
1992	1,878,343	1,212,259	2,103,810	272,311	3,469,917	142,755	4,626,557	721,284	2,425,022	1,084,998
1993	1,960,136	1,224,573	2,111,454	284,268	3,482,528	150,780	4,643,372	784,054	2,449,519	1,112,059
1994	2,062,855	1,243,964	2,137,219	298,842	3,525,022	160,445	4,700,026	855,702	2,504,690	1,153,570
1995	2,136,562	1,356,260	2,184,234	316,762	3,602,568	167,872	4,803,422	915,669	2,352,552	1,098,962
1996	2,261,168	1,383,471	2,206,667	331,478	3,639,565	176,895	4,852,754	969,071	2,377,983	1,127,587
1997	2,422,573	1,447,293	2,256,490	350,685	3,721,741	180,908	4,962,325	1,038,247	2,467,852	1,187,582
1998	2,508,501	1,424,621	2,221,757	356,829	3,664,459	179,179	4,885,946	1,075,071	3,634,398	1,207,596
1999	2,689,916	1,477,799	2,256,829	374,184	3,722,301	184,131	4,963,070	1,152,821	6,380,181	1,312,103
2000	2,807,273	1,474,972	2,260,219	386,488	3,727,893	184,478	4,970,523	1,203,117	6,407,449	1,336,447
2001	3,108,974	1,691,711	2,362,030	416,168	3,895,817	192,738	5,194,425	1,273,757	6,866,759	1,453,665
2002	3,430,646	1,922,090	2,463,204	446,789	4,062,688	201,247	5,416,917	1,347,480	7,302,325	1,568,647
2003	3,571,999	1,988,878	2,406,585	449,021	3,969,303	198,925	5,292,402	1,349,229	7,383,551	1,609,125
2004	3,799,720	2,133,378	2,422,152	464,508	3,994,980	201,368	5,326,638	1,383,309	7,618,083	1,683,998
2005	4,018,536	2,281,350	2,444,786	481,549	4,032,309	203,136	5,376,410	1,417,528	7,719,919	1,730,586
2006	4,320,637	2,345,590	2,492,831	503,961	4,111,553	207,030	5,482,070	1,467,216	7,944,760	1,808,864
2007	4,634,217	2,419,458	2,539,864	526,662	4,189,127	211,065	5,585,503	1,518,738	8,140,657	1,882,031
2008	5,080,721	2,576,081	2,651,723	563,634	4,373,619	220,483	5,831,493	1,610,493	8,646,065	2,029,213
2009	5,180,434	2,472,938	2,582,960	562,437	4,260,205	214,685	5,680,275	1,591,466	8,351,695	1,989,428
2010	5,627,044	2,615,294	2,683,483	598,265	4,426,004	223,142	5,901,340	1,678,412	8,796,793	2,126,320
2011	5,947,816	2,758,798	2,696,799	616,410	4,447,971	224,258	5,930,627	1,686,811	8,846,147	2,171,014
2012	6,522,970	3,071,998	2,817,533	659,863	4,647,100	234,412	6,196,133	1,763,185	9,404,094	2,342,773
2013	6,669,817	3,105,648	2,752,835	660,204	4,540,393	228,953	6,053,855	1,722,130	9,107,672	2,302,662
2014	7,321,852	3,463,673	2,890,827	709,567	4,767,989	240,561	6,357,319	1,809,441	9,717,851	2,492,922
2015	8,187,420	3,942,067	3,097,600	777,752	5,109,028	257,960	6,812,037	1,940,307	10,633,589	2,767,220
2016	8,826,620	4,085,405	3,185,778	799,893	5,254,466	265,375	7,005,956	1,996,085	11,034,411	2,916,698
2017	9,484,218	4,229,784	3,272,621	821,696	5,397,700	272,671	7,196,932	2,050,964	11,421,459	3,065,760
2018	10,107,351	4,348,619	3,341,004	838,868	5,510,490	278,407	7,347,320	2,094,097	11,728,922	3,196,303
2019	10,573,562	4,372,202	3,354,820	842,334	5,533,273	279,531	7,377,697	2,102,559	11,783,042	3,259,284
2020	10,967,595	4,365,418	3,345,939	840,104	5,518,627	278,734	7,358,169	2,096,568	11,743,940	3,296,544
2021	11,471,878	4,370,362	3,352,398	841,726	5,529,279	279,213	7,372,375	2,100,164	11,790,663	3,309,660
2022	11,814,836	4,309,899	3,314,747	832,274	5,467,182	275,886	7,289,575	2,075,136	11,616,241	3,260,700
2023	12,855,374	4,317,830	3,443,131	864,510	5,678,930	288,470	7,571,910	2,169,800	12,188,586	3,421,356
2024	13,195,725	4,248,297	3,402,942	854,419	5,612,644	284,989	7,483,525	2,143,612	12,011,219	3,371,570
2025	13,766,365	4,280,771	3,422,031	859,211	5,644,126	286,540	7,525,501	2,155,277	12,100,388	3,396,600
2026	14,283,043	4,259,424	3,409,503	856,065	5,623,465	285,438	7,497,954	2,146,987	12,034,878	3,378,212
2027	14,911,847	4,289,575	3,428,547	860,848	5,654,877	287,007	7,539,837	2,158,787	12,127,058	3,404,086
2028	15,317,087	4,225,060	3,394,413	852,276	5,598,578	284,107	7,464,769	2,136,981	11,968,995	3,359,719
2029	15,957,083	4,246,257	3,412,773	856,887	5,628,861	285,614	7,505,148	2,148,308	12,057,453	3,384,550
2030	16,482,613	4,232,154	3,407,025	855,442	5,619,380	285,038	7,492,508	2,143,979	12,027,056	3,376,016
2031	17,242,806	4,261,438	3,426,442	860,320	5,651,407	286,550	7,535,208	2,155,351	12,120,880	3,402,354
2032	16,962,879	4,166,977	3,369,661	846,062	5,557,752	281,897	7,410,335	2,120,360	11,861,525	3,329,551
2033	17,151,597	4,226,327	3,405,669	855,103	5,617,142	285,035	7,489,521	2,143,950	12,018,612	3,373,647
2034	16,557,466	4,027,128	3,286,594	825,206	5,420,744	275,160	7,227,661	2,069,683	11,491,612	3,225,716
2035	17,453,663	4,310,371	3,461,470	869,114	5,709,176	290,054	7,612,234	2,181,706	12,276,391	3,446,005
TOTAL	392,736,940	142,413,010	141,795,309	30,050,979	233,387,664	10,616,896	287,789,136	76,993,115	404,886,039	113,150,024

TRANSPORTATION CHARGE FOR EACH CONTRACTOR^(a)

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Geronio 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)	
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	1,103,798
1971	0	0	0	0	0	0	0	0	0	1,513,435
1972	0	847,235	0	898,896	0	0	0	0	0	3,261,922
1973	0	1,083,333	0	1,658,158	0	0	0	0	0	3,168,975
1974	0	1,872,299	0	2,345,298	0	0	0	0	0	3,919,920
1975	0	3,886,921	0	4,473,150	0	0	0	0	0	6,053,571
1976	0	5,485,263	0	6,453,511	0	0	0	0	0	8,478,786
1977	0	350,764	0	196,709	0	0	0	0	0	1,592,571
1978	0	3,925,760	0	5,193,014	0	0	0	0	0	8,121,539
1979	0	4,130,117	0	5,884,359	0	0	0	0	0	8,965,943
1980	0	4,821,399	0	7,070,559	0	0	0	0	0	10,078,653
1981	0	9,154,674	0	11,573,374	0	0	0	0	0	15,198,490
1982	0	13,399,978	0	16,838,951	0	0	0	0	0	21,067,376
1983	0	6,906,861	0	6,333,114	0	0	0	0	0	4,886,108
1984	0	23,792,846	0	32,902,392	0	0	0	0	0	51,298,117
1985	0	25,587,531	0	32,826,254	0	0	0	0	0	49,439,706
1986	0	48,308,396	0	54,607,052	0	0	0	0	0	69,858,393
1987	0	48,718,609	0	55,850,633	0	0	0	0	0	71,753,113
1988	0	47,776,670	24,835	55,548,884	0	0	0	0	0	71,538,006
1989	464,113	47,018,473	0	49,840	0	0	0	0	0	72,880,796
1990	638,655	64,978,962	120,659	83,443,414	0	0	0	0	0	103,763,470
1991	718,614	68,915,897	179,333	87,307,153	0	0	0	0	0	109,131,271
1992	796,956	72,257,175	237,984	91,229,371	0	0	0	0	0	113,397,557
1993	868,257	74,830,512	295,739	94,197,251	0	0	0	0	0	116,489,670
1994	952,488	78,247,996	393,638	98,236,457	0	0	0	0	0	120,863,898
1995	955,381	78,142,565	526,267	98,559,076	0	0	0	0	0	121,837,689
1996	965,706	80,926,956	700,819	101,920,120	0	0	0	0	0	125,457,266
1997	002,202	86,038,699	902,435	107,979,032	0	0	0	0	0	132,113,685
1998	004,395	86,498,458	1,121,772	109,782,982	0	0	0	0	0	133,792,179
1999	075,801	92,080,700	1,223,635	118,893,471	0	0	0	0	0	143,577,113
2000	080,399	93,487,099	1,305,674	120,632,031	0	0	0	0	0	145,381,491
2001	1,157,845	101,999,386	1,392,610	131,005,885	0	0	0	0	0	156,785,040
2002	1,231,289	110,571,281	1,478,782	141,443,385	0	0	0	0	0	168,271,236
2003	1,244,985	110,473,667	1,446,565	141,384,235	0	0	0	0	0	168,013,353
2004	1,284,530	114,262,160	1,466,666	146,041,490	0	0	0	0	0	173,018,012
2005	1,301,703	117,569,494	1,486,864	150,064,170	0	0	0	0	0	177,266,157
2006	1,339,613	122,559,246	1,525,110	156,108,481	0	0	0	0	0	183,799,383
2007	1,372,644	127,930,376	1,569,050	162,519,392	0	0	0	0	0	190,728,774
2008	1,457,864	138,011,127	1,662,368	174,714,884	0	0	0	0	0	204,090,772
2009	1,408,230	134,277,473	1,600,973	170,173,199	0	0	0	0	0	198,867,629
2010	1,483,280	143,761,214	1,685,770	181,606,361	0	0	0	0	0	211,342,199
2011	1,491,601	146,160,433	1,696,351	184,675,036	0	0	0	0	0	214,565,775
2012	1,585,680	157,278,495	1,798,247	198,322,483	0	0	0	0	0	229,460,878
2013	1,535,699	153,786,552	1,745,895	194,212,315	0	0	0	0	0	224,717,321
2014	1,638,586	166,248,363	1,860,112	209,519,063	0	0	0	0	0	241,460,313
2015	1,792,994	183,843,785	2,023,665	231,185,424	0	0	0	0	0	265,266,092
2016	1,860,578	192,266,481	2,092,745	241,590,491	0	0	0	0	0	276,596,893
2017	1,925,842	200,782,735	2,162,261	252,084,643	0	0	0	0	0	287,954,357
2018	1,977,683	208,137,928	2,219,378	261,126,370	0	0	0	0	0	297,643,018
2019	1,986,809	210,956,266	2,230,699	264,652,078	0	0	0	0	0	301,246,999
2020	1,980,217	212,260,733	2,227,275	266,279,863	0	0	0	0	0	302,756,021
2021	1,988,094	212,649,769	2,229,754	267,285,335	0	0	0	0	0	303,824,864
2022	1,958,685	209,632,074	2,200,564	264,047,799	0	0	0	0	0	300,129,824
2023	2,055,191	212,260,702	2,204,366	269,320,156	0	0	0	0	0	305,413,234
2024	2,025,284	208,890,207	2,170,914	265,695,347	0	0	0	0	0	301,318,521
2025	2,040,319	210,492,993	2,186,526	268,156,648	0	0	0	0	0	304,007,971
2026	2,029,273	209,407,274	2,176,247	267,387,767	0	0	0	0	0	303,117,417
2027	2,044,817	210,935,678	2,190,788	269,833,752	0	0	0	0	0	305,766,313
2028	2,018,164	207,830,308	2,159,693	266,610,150	0	0	0	0	0	302,141,064
2029	2,033,080	209,001,764	2,169,901	268,687,679	0	0	0	0	0	304,362,198
2030	2,027,953	208,337,845	2,163,125	268,450,134	0	0	0	0	0	303,989,751
2031	2,043,774	209,839,860	2,177,210	271,003,600	0	0	0	0	0	306,687,974
2032	2,000,042	205,181,029	2,131,714	265,219,784	0	0	0	0	0	300,304,357
2033	2,026,531	208,079,946	2,160,297	268,833,377	0	0	0	0	0	304,402,526
2034	1,937,669	198,346,603	2,064,312	256,755,554	0	0	0	0	0	291,180,223
2035	2,069,995	212,336,852	2,200,770	274,217,801	0	0	0	0	0	310,490,460
TOTAL	71,879,510	7,345,316,997	75,040,197	9,326,055,816	0	0	0	0	0	10,864,831,796

TABLE B-19: TOTAL TRANSPORTATION

(in dollars)

Sheet 1 of 4

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	153,228	189,353	457,015	799,596	0	0	0
1964	0	0	0	174,022	267,277	633,956	1,075,255	9,104	18,026	27,130
1965	0	0	0	249,751	369,761	1,178,086	1,797,598	14,995	29,064	44,059
1966	19,499	0	19,499	276,276	380,613	1,436,434	2,093,323	24,480	46,774	71,254
1967	43,804	0	43,804	352,235	459,522	1,709,264	2,521,021	43,170	81,429	124,599
1968	132,716	0	132,716	398,205	560,566	2,013,442	2,972,213	69,576	130,327	199,903
1969	260,066	0	260,066	453,994	496,369	2,113,512	3,063,875	124,729	232,211	356,940
1970	283,326	0	283,326	468,031	488,072	2,233,805	3,189,908	137,859	256,524	394,383
1971	233,639	0	233,639	429,010	507,454	2,201,075	3,137,539	139,087	258,872	397,959
1972	231,303	0	231,303	515,169	633,679	2,351,684	3,500,532	143,725	267,545	411,270
1973	227,528	28,577	256,105	479,696	504,511	2,369,951	3,354,158	142,412	265,175	407,587
1974	247,111	30,062	277,173	503,039	519,640	2,537,730	3,560,409	143,771	267,733	411,504
1975	244,618	33,105	277,723	551,416	560,458	2,441,368	3,553,242	160,426	298,503	458,929
1976	279,068	37,357	316,425	641,731	689,544	2,531,995	3,863,270	272,946	506,292	779,238
1977	303,137	41,347	344,484	605,058	668,278	2,508,111	3,781,447	283,780	526,738	810,518
1978	285,434	44,929	330,363	666,379	653,309	2,841,826	4,161,514	294,618	546,899	841,517
1979	299,115	48,487	347,602	721,893	690,375	2,842,679	4,254,947	290,405	539,242	829,647
1980	322,522	61,098	383,620	840,575	821,755	3,068,106	4,730,436	318,128	590,523	908,651
1981	360,246	76,537	436,783	797,013	828,897	2,929,982	4,555,892	340,413	631,729	972,142
1982	455,338	92,345	547,683	892,830	832,727	3,618,179	5,343,736	341,124	633,151	974,275
1983	413,565	128,403	541,968	863,311	856,251	4,327,341	6,046,903	373,414	692,768	1,066,182
1984	594,124	191,870	785,994	2,566,949	2,785,456	8,587,917	13,940,322	406,839	754,486	1,161,325
1985	860,402	430,239	1,290,641	2,751,224	2,962,948	8,706,546	14,420,718	420,513	779,712	1,200,225
1986	1,469,650	1,128,339	2,597,989	2,296,582	2,451,978	7,108,052	11,856,612	425,195	788,351	1,213,546
1987	2,250,498	2,225,980	4,476,478	2,376,176	2,564,157	7,298,091	12,238,424	425,584	789,068	1,214,652
1988	2,305,475	2,276,432	4,581,907	2,456,755	2,658,635	7,401,410	12,516,800	430,100	797,399	1,227,499
1989	2,327,324	2,298,613	4,625,937	2,503,204	2,713,190	7,491,246	12,707,640	436,709	809,593	1,246,302
1990	2,413,760	2,301,947	4,715,707	2,511,720	2,723,988	7,472,419	12,708,127	445,909	826,569	1,272,478
1991	2,431,892	2,312,959	4,744,851	2,604,767	2,794,814	7,571,567	12,971,148	1,229,982	2,257,581	3,487,563
1992	2,447,803	2,328,730	4,776,533	2,679,848	2,845,915	7,623,000	13,148,763	1,256,938	2,307,479	3,564,417
1993	2,467,626	2,347,526	4,815,152	2,728,418	2,868,832	7,608,742	13,205,992	1,256,224	2,306,225	3,562,449
1994	2,485,845	2,364,765	4,850,610	2,800,313	2,879,621	7,659,075	13,339,009	1,251,330	2,297,347	3,548,677
1995	2,509,656	2,421,114	4,930,770	2,901,307	2,895,057	7,695,837	13,492,201	1,258,165	2,309,848	3,568,013
1996	2,528,293	2,451,615	4,980,008	2,975,770	2,883,780	7,668,988	13,528,538	1,254,528	2,303,250	3,557,778
1997	2,551,298	2,460,363	5,011,661	3,074,868	2,895,979	7,698,036	13,668,883	1,261,169	2,315,396	3,576,565
1998	2,562,167	2,458,304	5,020,471	3,022,160	2,847,853	7,583,448	13,453,461	1,243,908	2,283,982	3,527,890
1999	2,580,276	2,462,399	5,042,675	3,012,738	2,839,252	7,562,993	13,414,983	1,241,753	2,280,148	3,521,901
2000	2,594,756	2,462,515	5,057,271	2,974,581	2,804,415	7,480,039	13,259,035	1,229,746	2,258,307	3,488,053
2001	2,618,770	2,467,031	5,085,801	2,995,121	2,823,209	7,525,094	13,343,424	1,238,835	2,274,976	3,513,811
2002	2,636,796	2,467,187	5,103,983	3,006,629	2,833,724	7,550,148	13,390,501	1,245,070	2,286,459	3,531,529
2003	2,651,343	2,464,005	5,115,348	3,009,162	2,837,410	7,567,783	13,414,355	1,235,139	2,268,377	3,503,516
2004	2,674,873	2,468,906	5,143,779	2,998,387	2,827,648	7,545,020	13,371,055	1,232,359	2,263,425	3,495,784
2005	2,689,828	2,467,237	5,157,065	2,984,940	2,815,373	7,515,796	13,316,109	1,228,200	2,255,880	3,484,080
2006	2,701,095	2,466,445	5,167,540	2,974,538	2,805,876	7,493,194	13,273,608	1,229,668	2,258,718	3,488,386
2007	2,721,285	2,466,268	5,187,553	2,978,246	2,809,263	7,501,269	13,288,778	1,231,678	2,262,437	3,494,115
2008	2,744,440	2,466,737	5,211,177	3,001,519	2,830,517	7,551,898	13,383,934	1,241,123	2,279,764	3,520,887
2009	2,745,843	2,461,343	5,207,186	2,947,930	2,781,585	7,435,379	13,164,894	1,222,312	2,245,449	3,467,761
2010	2,767,485	2,463,148	5,230,633	2,966,403	2,798,457	7,475,573	13,240,433	1,229,975	2,259,524	3,489,499
2011	2,782,847	2,461,883	5,244,730	2,952,580	2,785,785	7,445,048	13,183,413	1,225,583	2,251,533	3,477,116
2012	2,809,540	2,465,812	5,275,352	2,984,127	2,814,596	7,513,670	13,312,393	1,237,886	2,274,070	3,511,956
2013	2,778,449	2,442,129	5,220,578	2,716,659	2,568,925	6,804,027	12,089,611	1,185,741	2,179,112	3,364,853
2014	2,809,759	2,448,175	5,257,934	2,717,403	2,546,411	6,715,255	11,979,069	1,190,918	2,187,246	3,378,164
2015	2,798,275	2,432,343	5,230,618	2,593,093	2,403,576	6,152,360	11,149,029	1,159,761	2,130,495	3,290,256
2016	2,785,795	2,427,897	5,213,692	2,546,122	2,354,108	5,915,124	10,815,354	1,142,495	2,098,742	3,241,237
2017	2,777,338	2,427,864	5,205,202	2,512,534	2,323,178	5,794,401	10,630,113	1,123,557	2,063,734	3,187,291
2018	2,725,519	2,434,274	5,159,793	2,503,158	2,313,176	5,741,324	10,557,658	1,119,760	2,056,349	3,176,109
2019	2,699,786	2,435,508	5,135,294	2,470,874	2,283,817	5,651,905	10,406,596	1,117,053	2,051,201	3,168,254
2020	2,712,580	2,438,092	5,150,672	2,451,108	2,265,286	5,599,978	10,316,372	1,111,841	2,041,541	3,153,382
2021	2,715,040	2,439,012	5,154,052	2,414,193	2,229,301	5,500,591	10,144,085	1,111,856	2,041,458	3,153,314
2022	2,695,962	2,425,463	5,121,425	2,398,592	2,214,881	5,463,653	10,077,126	1,101,555	2,022,481	3,124,036
2023	2,697,436	2,397,859	5,095,295	2,404,191	2,219,968	5,473,920	10,098,079	1,101,323	2,021,996	3,123,319
2024	2,686,376	2,392,834	5,079,210	2,384,943	2,202,232	5,430,230	10,017,405	1,083,082	1,988,445	3,071,527
2025	2,681,964	2,391,511	5,073,475	2,395,328	2,211,537	5,450,790	10,057,655	1,086,649	1,994,902	3,081,551
2026	2,674,876	2,386,533	5,061,409	2,389,323	2,206,038	5,437,465	10,032,826	974,353	1,787,560	2,761,913
2027	2,675,844	2,384,155	5,059,999	2,397,660	2,213,555	5,453,744	10,064,959	975,127	1,788,462	2,763,589
2028	2,665,756	2,378,127	5,043,883	2,377,834	2,195,398	5,408,926	9,982,158	961,748	1,763,738	2,725,486
2029	2,664,209	2,376,150	5,042,359	2,383,873	2,200,334	5,419,717	10,003,324	962,610	1,765,160	2,727,770
2030	2,654,451	2,363,540	5,017,991	2,379,257	2,196,618	5,410,376	9,986,251	957,902	1,756,374	2,714,276
2031	2,643,343	2,350,169	4,993,512	2,384,081	2,200,967	5,420,244	10,005,292	950,756	1,743,053	2,693,809
2032	2,622,739	2,331,030	4,953,769	2,362,628	2,181,345	5,373,184	9,917,157	945,070	1,732,622	2,677,692
2033	2,602,417	2,298,720	4,901,137	2,386,038	2,202,692	5,423,734	10,012,464	955,509	1,751,679	2,707,188
2034	2,512,509	2,227,078	4,739,587	2,326,441	2,148,180	5,292,723	9,767,344	934,918	1,713,992	2,648,910
2035	2,316,656	2,002,445	4,319,101	2,410,646	2,225,054	5,475,549	10,111,249	964,663	1,768,272	2,732,935
TOTAL	136,166,204	119,764,867	255,931,071	149,386,953	145,308,088	398,492,039	693,187,080	58,158,829	106,913,492	165,072,321

a) Unadjusted for prior overpayments or underpayments of charges.

CHARGE FOR EACH CONTRACTOR^(a)

(in dollars)

Sheet 2 of 4

Calendar Year	SAN JOAQUIN VALLEY AREA									
	Devil's Den 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	2,783	0	0	0	0	0	2,783
1965	0	0	0	6,154	75,192	0	0	0	0	81,346
1966	0	0	0	12,284	140,284	0	0	0	0	152,568
1967	0	0	0	26,788	273,277	0	0	0	0	300,065
1968	73,452	185,323	10,446	55,574	453,591	1,548,521	13,053	11,242	209,584	2,560,786
1969	121,679	180,930	12,259	88,731	534,609	2,400,583	11,676	10,217	359,633	3,720,317
1970	144,773	203,016	19,024	95,866	584,275	2,925,221	11,809	12,737	295,632	4,292,353
1971	149,499	199,405	19,983	96,928	616,683	3,837,001	16,759	14,009	450,877	5,401,144
1972	171,114	221,619	20,787	99,269	642,645	4,992,780	14,189	19,916	1,085,209	7,267,528
1973	162,847	204,766	16,922	98,820	650,385	4,945,328	14,455	11,270	411,717	6,516,510
1974	172,732	285,317	16,891	99,796	709,431	5,249,580	14,548	12,297	602,261	7,162,853
1975	193,075	352,823	17,833	108,082	726,841	6,377,484	15,558	13,966	733,857	8,539,519
1976	214,314	307,182	18,379	109,394	785,577	6,738,931	15,929	15,572	568,574	8,773,852
1977	211,089	269,029	15,481	113,869	808,784	6,910,838	17,355	13,411	515,164	8,875,020
1978	240,827	369,665	14,632	118,301	927,443	8,582,563	18,268	18,103	518,970	10,808,772
1979	272,406	388,021	18,202	115,557	905,502	9,497,668	18,969	24,244	956,671	12,197,240
1980	260,445	415,758	16,699	127,752	905,726	10,166,434	19,843	24,013	753,829	12,690,499
1981	269,906	458,636	32,308	134,899	1,052,677	11,251,262	22,769	22,390	884,781	14,129,628
1982	289,741	470,873	17,569	137,423	1,020,637	12,626,559	21,904	21,435	753,082	15,359,223
1983	378,759	705,373	18,341	154,214	1,031,602	17,021,335	44,079	35,446	397,559	19,786,708
1984	763,632	1,587,876	167,304	170,063	3,555,039	39,800,239	98,422	98,438	1,241,987	47,483,000
1985	747,599	1,603,599	91,908	176,048	3,613,210	41,406,903	102,350	99,039	3,750,081	51,590,737
1986	605,376	1,298,308	69,876	177,768	2,933,337	34,237,312	82,431	78,841	2,903,511	42,386,760
1987	635,229	1,402,340	73,414	177,403	3,155,539	37,365,697	92,344	83,446	3,066,111	46,051,523
1988	638,341	1,456,833	73,753	179,000	3,228,875	38,065,375	93,059	86,563	2,915,430	46,737,229
1989	637,575	1,503,093	73,629	181,592	3,845,532	40,127,087	93,767	89,149	3,009,899	49,561,323
1990	630,623	1,539,310	72,990	185,420	4,346,348	40,845,523	94,208	89,657	3,142,020	50,946,099
1991	632,905	1,542,585	73,157	189,439	4,398,520	40,934,422	95,541	89,861	3,148,720	51,105,150
1992	637,466	1,533,343	72,677	196,481	4,397,118	40,674,593	95,616	89,277	3,129,723	50,826,294
1993	636,527	1,530,818	72,540	197,019	4,394,414	40,607,856	95,622	89,041	3,124,450	50,748,287
1994	634,004	1,524,428	72,209	197,040	4,373,112	40,437,226	95,177	88,540	3,111,319	50,533,055
1995	637,373	1,534,466	72,731	197,096	4,402,631	40,675,682	95,871	89,192	3,131,928	50,836,970
1996	635,495	1,529,492	72,473	197,115	4,387,643	40,555,933	95,524	88,791	3,121,703	50,684,169
1997	638,786	1,540,229	73,030	197,166	4,419,155	40,809,602	96,267	89,283	3,143,752	51,007,270
1998	630,033	1,515,772	71,758	197,152	4,338,645	40,176,548	94,572	87,454	3,093,525	50,205,459
1999	628,785	1,511,080	71,513	197,234	4,318,433	40,037,239	94,242	86,940	3,083,878	50,029,344
2000	622,686	1,494,788	70,665	197,234	4,268,618	39,631,553	93,112	85,750	3,050,415	49,514,821
2001	627,185	1,507,672	71,334	197,506	4,308,361	39,956,481	93,995	86,498	3,076,846	49,925,878
2002	630,280	1,517,602	71,850	197,888	4,336,552	40,194,133	94,646	87,134	3,097,223	50,227,308
2003	625,215	1,499,707	70,917	197,891	4,276,250	39,745,253	93,407	85,939	3,060,472	49,655,051
2004	624,120	1,494,648	70,654	198,946	4,255,727	39,638,096	92,987	85,557	3,050,043	49,510,778
2005	621,971	1,488,653	70,343	198,968	4,238,417	39,501,458	92,570	85,152	3,037,734	49,335,266
2006	623,425	1,484,725	70,126	201,035	4,229,942	39,459,582	92,281	84,864	3,029,410	49,275,390
2007	624,342	1,487,191	70,255	201,091	4,235,858	39,507,693	92,448	85,024	3,034,468	49,338,370
2008	628,919	1,499,713	70,905	201,215	4,274,343	39,820,438	93,310	85,857	3,060,166	49,734,866
2009	619,497	1,473,675	69,553	201,141	4,193,457	39,169,879	91,510	84,109	3,006,700	48,909,519
2010	623,189	1,483,771	70,075	201,252	4,224,580	39,422,343	92,204	84,780	3,027,420	49,229,614
2011	620,848	1,477,685	69,758	201,061	4,206,324	39,272,961	91,788	84,379	3,014,900	49,039,704
2012	626,858	1,494,150	70,613	201,193	4,257,287	39,684,989	92,922	85,475	3,048,697	49,562,184
2013	600,494	1,421,184	66,820	201,122	4,030,191	37,860,900	87,866	80,568	2,898,851	47,247,996
2014	607,476	1,440,347	67,815	198,491	4,089,383	38,339,809	89,190	81,848	2,938,190	47,852,549
2015	594,230	1,403,270	65,886	195,346	3,898,323	37,414,520	86,608	79,327	2,862,009	46,599,519
2016	590,102	1,391,709	65,284	189,313	3,796,941	37,125,539	85,801	78,544	2,838,255	46,161,488
2017	589,802	1,389,881	65,188	174,903	3,660,364	37,095,718	85,668	78,558	2,834,484	45,974,566
2018	595,157	1,403,297	65,886	151,829	3,585,900	37,455,093	77,905	79,573	2,862,026	46,276,666
2019	595,704	1,403,262	65,885	143,206	3,528,085	37,479,988	77,383	79,680	2,861,955	46,235,148
2020	593,943	1,396,203	65,517	140,949	3,479,014	37,341,348	76,685	79,166	2,847,466	46,020,291
2021	594,622	1,397,563	65,588	139,832	3,459,719	37,365,500	76,634	79,354	2,850,257	46,029,069
2022	589,618	1,379,201	64,634	138,298	3,398,315	36,907,324	75,389	78,562	2,812,561	45,443,902
2023	589,750	1,377,775	64,559	137,873	3,391,366	36,896,042	75,259	78,764	2,809,638	45,421,026
2024	578,900	1,363,713	63,854	132,590	3,342,787	36,471,934	74,317	78,177	2,781,293	44,887,565
2025	580,926	1,369,334	64,147	132,041	3,355,102	36,604,318	74,679	78,555	2,792,829	45,051,931
2026	579,956	1,366,442	63,995	131,756	3,342,919	36,530,883	74,444	78,345	2,786,892	44,955,632
2027	581,747	1,371,214	64,245	131,126	3,353,467	36,648,167	74,729	78,650	2,796,692	45,100,037
2028	578,450	1,361,347	63,730	128,604	3,322,046	36,405,413	74,025	77,928	2,776,431	44,787,974
2029	579,811	1,364,238	63,888	128,414	3,328,509	36,461,587	74,208	78,069	2,782,526	44,861,250
2030	578,813	1,359,707	63,652	128,154	3,314,706	36,364,810	73,839	77,865	2,773,228	44,734,774
2031	580,258	1,361,981	63,771	126,856	3,308,807	36,429,949	73,714	78,117	2,777,894	44,801,347
2032	575,395	1,346,849	62,985	126,563	3,267,789	36,057,287	72,596	77,203	2,746,827	44,328,494
2033	579,766	1,358,886	63,609	126,036	3,288,590	36,333,161	73,208	78,008	2,771,538	44,672,802
2034	570,252	1,332,735	62,254	125,354	3,197,446	35,653,407	71,246	76,261	2,717,848	43,806,803
2035	586,234	1,376,651	64,535	124,941	3,318,794	36,728,725	74,071	79,193	2,808,015	45,161,159
TOTAL	35,306,348	80,512,077	3,965,493	10,765,538	212,311,989	2,114,805,606	4,792,820	4,624,613	161,937,636	2,629,022,120

TABLE B-19: TOTAL TRANSPORTATION

(in dollars)

Sheet 3 of 4

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	34,157	0	0	0	0	0	0	0	52,977	0
1964	64,333	20,594	14,772	4,474	38,055	1,171	29,119	8,403	84,712	35,826
1965	121,286	39,055	25,671	7,359	41,688	2,131	51,474	15,572	138,097	36,138
1966	220,607	73,829	45,735	12,758	74,778	3,839	92,432	28,303	237,641	62,825
1967	426,755	151,813	88,027	23,990	144,526	7,447	179,061	55,227	442,842	118,109
1968	751,102	318,212	155,831	42,363	256,347	13,135	317,087	97,427	798,194	213,208
1969	1,081,170	479,546	230,012	62,501	378,683	19,085	467,676	140,953	1,230,834	328,429
1970	1,406,261	611,229	321,896	91,576	530,224	25,764	645,323	188,753	1,815,222	477,325
1971	1,739,719	768,142	441,451	130,994	727,394	32,496	873,466	236,071	2,590,119	672,909
1972	2,059,668	951,926	571,725	184,203	942,249	43,120	1,129,645	279,813	3,449,352	880,737
1973	2,151,054	990,735	706,407	186,817	1,154,347	44,223	1,193,227	292,690	4,035,081	963,082
1974	2,215,017	1,043,943	722,090	196,475	1,181,478	45,961	1,225,262	297,501	4,063,909	1,007,460
1975	2,392,115	1,098,853	763,272	209,315	1,249,730	49,249	1,292,383	309,783	4,226,214	1,108,383
1976	2,745,469	1,080,309	810,024	218,415	1,325,744	52,227	1,335,179	319,232	4,368,338	1,162,770
1977	2,687,342	1,158,099	706,026	229,284	1,163,745	48,109	1,407,066	334,977	4,620,899	1,226,186
1978	3,138,158	1,222,227	916,315	240,217	1,485,747	49,354	1,438,232	336,025	4,624,450	1,264,803
1979	3,555,470	1,202,757	953,585	241,102	1,535,790	49,091	1,531,883	337,480	4,488,545	1,169,488
1980	4,147,150	1,294,109	1,050,090	263,508	1,708,236	54,205	1,655,361	365,798	4,906,665	1,288,371
1981	4,261,836	1,463,866	1,086,579	272,049	1,771,755	75,596	1,761,616	395,860	5,312,255	1,379,590
1982	4,334,569	1,672,348	1,310,425	297,533	2,128,609	56,591	2,082,971	411,282	5,575,957	1,708,506
1983	5,868,138	2,066,388	2,094,186	360,688	3,381,321	72,187	2,091,548	510,272	6,301,342	1,616,328
1984	8,891,366	3,718,130	5,073,658	724,073	8,119,636	79,751	2,356,415	584,010	8,737,716	4,527,061
1985	8,808,059	4,597,329	5,264,817	767,674	8,441,588	83,683	2,463,969	613,175	9,471,389	3,514,066
1986	7,496,713	3,582,897	4,112,049	646,108	6,618,259	183,810	2,488,268	732,540	8,432,073	3,146,822
1987	7,605,437	4,327,873	4,573,504	721,649	7,447,489	207,282	2,405,435	1,283,846	8,602,899	3,668,321
1988	7,699,504	5,051,135	4,792,177	755,415	7,892,309	208,451	2,382,804	1,419,996	8,688,910	3,851,900
1989	7,722,886	5,063,915	4,997,798	785,433	8,315,881	216,965	2,402,569	1,574,837	8,592,820	3,974,865
1990	7,881,388	5,064,288	5,255,084	839,182	8,666,657	206,781	11,301,247	1,765,989	15,730,770	4,508,106
1991	8,081,078	5,141,723	5,275,983	849,736	8,701,111	346,563	11,374,218	1,894,307	13,059,125	4,514,233
1992	8,227,534	5,046,546	5,266,662	884,046	8,685,747	359,919	11,325,274	2,005,933	13,307,749	4,592,077
1993	8,364,649	5,114,311	5,238,788	889,657	8,639,772	373,242	11,287,675	2,116,443	13,055,619	4,576,611
1994	8,487,735	5,082,434	5,217,055	910,605	8,603,929	386,005	11,233,577	2,223,245	13,080,623	4,610,655
1995	8,611,973	5,108,641	5,267,981	961,665	8,687,936	398,810	11,298,747	2,329,847	13,359,213	4,653,815
1996	8,788,689	5,129,704	5,234,200	959,377	8,632,207	411,242	11,261,644	2,405,457	12,945,471	4,600,366
1997	9,028,030	5,179,920	5,267,897	982,357	8,687,789	414,129	11,342,112	2,507,666	12,949,115	4,659,831
1998	9,097,038	5,084,991	5,133,237	973,097	8,465,687	404,681	11,063,841	2,537,363	15,235,157	4,585,907
1999	9,260,434	5,040,758	5,107,731	1,016,134	8,423,625	402,372	10,951,668	2,606,873	21,082,762	4,741,877
2000	9,364,752	4,947,920	5,028,551	1,014,126	8,293,029	396,453	10,795,423	2,651,564	20,602,909	4,683,701
2001	9,720,940	5,231,796	5,058,837	1,015,122	8,342,971	400,589	10,912,654	2,706,203	20,346,033	4,679,408
2002	10,061,151	5,543,808	5,118,229	1,074,439	8,440,938	403,249	10,982,881	2,751,637	21,068,526	4,865,333
2003	10,238,279	5,613,137	5,007,670	1,067,605	8,258,582	396,916	10,753,192	2,736,522	20,805,004	4,853,141
2004	10,494,990	5,753,397	4,955,595	1,071,237	8,172,691	394,196	10,651,446	2,745,423	20,634,185	4,862,306
2005	10,739,302	5,922,523	4,932,203	1,084,448	8,134,101	392,206	10,603,192	2,765,256	20,506,265	4,876,316
2006	11,071,817	5,907,048	4,928,491	1,109,967	8,127,993	391,202	10,579,678	2,791,872	20,616,582	4,944,432
2007	11,423,034	5,976,591	4,935,463	1,124,426	8,139,483	391,908	10,608,000	2,830,197	20,532,781	4,978,106
2008	11,857,187	6,044,744	4,999,303	1,169,964	8,244,778	396,174	10,720,392	2,894,785	21,043,610	5,133,780
2009	11,972,008	5,807,993	4,868,590	1,140,078	8,029,173	386,932	10,478,605	2,860,153	20,116,186	4,979,326
2010	12,390,219	5,920,262	4,915,276	1,173,955	8,106,178	390,430	10,570,972	2,919,305	20,401,956	5,089,482
2011	12,734,306	6,045,716	4,905,745	1,207,318	8,090,475	388,371	10,517,033	2,903,824	20,608,429	5,172,440
2012	13,292,401	6,408,134	4,967,490	1,235,024	8,192,304	394,134	10,668,842	2,947,122	20,777,285	5,271,645
2013	13,907,988	6,807,002	4,655,104	1,176,102	7,663,377	368,270	9,992,884	2,752,591	19,241,892	4,939,092
2014	13,451,595	6,431,787	4,724,189	1,215,421	7,791,670	373,748	10,138,845	2,794,148	19,651,739	5,083,065
2015	13,555,391	6,323,568	4,573,409	1,212,458	7,542,989	359,588	9,773,539	2,687,591	19,249,715	5,001,331
2016	13,539,511	6,176,752	4,476,200	1,160,398	7,382,647	353,711	9,624,644	2,643,479	18,331,235	4,848,129
2017	13,749,251	6,093,847	4,448,892	1,166,790	7,337,615	350,115	9,539,400	2,616,602	18,440,818	4,901,383
2018	14,115,017	6,098,402	4,462,218	1,169,028	7,359,610	351,296	9,577,865	2,626,009	18,453,834	4,953,204
2019	14,272,776	5,946,923	4,411,845	1,160,694	7,276,536	346,834	9,465,953	2,593,672	18,223,515	4,931,305
2020	14,358,241	5,855,813	4,307,818	1,122,578	7,104,963	339,631	9,274,840	2,541,946	17,478,902	4,797,084
2021	14,600,290	5,678,181	4,200,824	1,079,722	6,928,507	334,571	9,087,681	2,507,175	16,660,529	4,601,618
2022	14,763,883	5,532,162	4,104,539	1,057,144	6,769,711	327,979	8,879,129	2,458,463	16,142,816	4,461,940
2023	15,755,753	5,532,935	4,232,979	1,104,512	6,981,564	339,627	9,129,322	2,546,525	16,929,195	4,655,816
2024	16,017,027	5,377,129	4,147,575	1,056,438	6,840,693	334,788	9,004,076	2,510,256	16,059,713	4,463,548
2025	16,555,813	5,404,869	4,148,288	1,066,138	6,841,870	335,674	8,987,547	2,517,263	16,204,177	4,487,144
2026	17,058,931	5,370,436	4,126,748	1,061,685	6,806,354	334,306	8,939,302	2,507,142	16,084,512	4,452,482
2027	17,675,916	5,385,239	4,133,273	1,057,692	6,817,112	335,669	8,967,227	2,517,415	16,005,215	4,441,446
2028	18,069,748	5,309,496	4,099,946	1,054,983	6,762,145	332,549	8,881,727	2,494,052	15,944,348	4,413,798
2029	18,693,811	5,314,114	4,112,268	1,055,802	6,782,477	333,782	8,914,429	2,503,356	15,963,762	4,423,793
2030	19,199,553	5,252,736	4,101,904	1,053,048	6,765,378	332,874	8,892,534	2,496,564	15,909,253	4,408,913
2031	19,860,229	5,223,591	4,102,836	1,056,825	6,766,923	332,662	8,889,333	2,495,125	15,982,033	4,423,141
2032	19,586,229	5,090,055	4,039,198	1,032,264	6,661,956	328,098	8,768,314	2,460,811	15,538,812	4,314,785
2033	19,678,757	5,124,757	4,065,925	1,046,754	6,706,041	329,624	8,810,765	2,472,307	15,792,107	4,370,128
2034	18,958,753	4,895,442	3,911,627	996,334	6,451,546	317,614	8,498,566	2,382,082	14,897,031	4,138,531
2035	19,733,247	5,177,364	4,092,526	1,068,864	6,749,938	330,488	8,836,426	2,478,863	16,190,834	4,448,532
TOTAL	700,771,947	298,847,319	256,394,314	56,661,212	421,914,386	18,374,925	497,456,132	128,670,249	917,130,794	255,796,610

CHARGE FOR EACH CONTRACTOR^(a)

(in dollars)

Sheet 4 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Geronio 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	708,170	0	795,304	0	0	0	0	59,889	1,654,789
1964	22,255	1,290,199	9,612	1,623,525	0	0	0	0	99,221	2,827,914
1965	22,357	2,230,794	18,191	2,749,813	0	0	413	413	171,041	4,844,270
1966	38,804	3,989,021	34,208	4,914,780	0	0	576	576	197,872	7,449,872
1967	72,845	7,868,519	69,740	9,648,901	0	0	573	573	256,562	12,895,525
1968	131,555	15,654,468	146,028	18,894,957	0	0	576	576	334,299	25,095,450
1969	202,887	23,675,120	220,233	28,517,129	0	0	3,255	3,255	406,238	36,327,820
1970	295,669	31,309,176	280,028	37,998,446	0	0	15,423	15,423	445,530	46,619,369
1971	417,702	40,845,224	350,348	49,826,035	0	0	16,320	16,320	435,388	59,448,024
1972	546,897	53,988,273	431,177	65,458,785	0	0	17,720	17,720	461,115	77,348,253
1973	598,147	58,355,453	444,542	71,115,805	0	0	17,681	17,681	435,661	82,103,507
1974	621,878	62,904,543	464,807	75,990,324	0	0	17,824	17,824	458,729	87,878,816
1975	655,358	67,905,077	487,743	81,747,475	0	0	18,753	18,753	468,321	95,063,962
1976	679,316	69,652,896	485,040	84,234,959	0	0	17,824	17,824	490,931	98,476,499
1977	707,723	67,867,793	516,662	82,673,911	0	0	18,579	18,579	483,800	96,987,759
1978	735,002	75,257,485	540,178	91,248,193	0	0	17,728	17,728	489,334	107,897,421
1979	723,421	73,908,832	535,536	90,232,980	0	0	20,926	20,926	507,043	108,390,385
1980	789,364	80,935,068	583,941	99,041,866	0	0	18,108	18,108	567,909	118,341,089
1981	819,543	90,815,293	645,776	110,061,614	0	0	21,540	21,540	577,103	130,754,702
1982	866,828	101,133,392	685,710	122,264,721	0	0	28,741	28,741	578,006	145,096,385
1983	978,439	112,884,211	821,728	139,046,776	0	0	20,075	20,075	590,905	167,099,517
1984	1,157,349	168,707,268	784,678	213,461,111	0	0	20,870	20,870	673,163	277,525,785
1985	1,224,118	229,348,181	1,034,549	275,632,597	0	0	20,267	20,267	762,984	344,918,169
1986	1,174,572	263,750,867	921,299	303,286,277	0	0	20,270	20,270	771,249	362,132,703
1987	1,164,643	283,232,491	899,231	326,140,100	0	0	20,302	20,302	748,815	390,890,294
1988	1,156,026	281,950,613	975,118	326,824,358	0	0	20,293	20,293	749,625	392,657,711
1989	2,696,479	279,655,881	1,078,400	327,076,729	0	0	20,289	20,289	751,452	395,989,672
1990	2,841,629	288,650,097	1,209,667	353,920,885	0	0	20,294	20,294	753,876	424,337,466
1991	2,974,956	294,712,944	1,363,107	358,289,084	0	0	20,307	20,307	754,895	431,372,998
1992	3,153,918	295,378,662	1,468,951	359,703,018	0	0	20,321	20,321	755,320	432,794,666
1993	3,271,145	302,262,398	1,623,979	366,814,289	0	0	20,328	20,328	755,186	439,921,683
1994	3,418,755	304,357,786	1,837,937	369,450,341	0	0	20,328	20,328	755,147	442,497,167
1995	3,556,037	301,868,353	2,069,372	368,172,390	0	0	20,328	20,328	755,276	441,775,948
1996	3,489,983	303,227,657	2,434,816	369,520,813	0	0	20,328	20,328	755,268	443,046,902
1997	3,508,491	308,701,501	2,822,768	376,051,606	0	0	20,328	20,328	755,348	450,091,661
1998	3,419,417	305,868,795	3,244,967	375,114,178	0	0	20,328	20,328	755,307	448,092,994
1999	3,497,067	308,018,705	3,328,041	383,478,027	0	0	20,328	20,328	755,564	456,262,822
2000	3,423,353	305,517,223	3,409,124	380,128,128	0	0	20,328	20,328	755,562	452,223,198
2001	3,400,511	311,076,648	3,462,600	386,354,312	0	0	20,332	20,332	756,394	458,999,952
2002	3,498,122	320,405,831	3,513,580	397,727,724	0	0	20,332	20,332	757,107	470,758,484
2003	3,459,084	317,079,232	3,432,437	393,700,801	0	0	20,332	20,332	769,156	466,178,559
2004	3,435,727	317,647,185	3,397,975	394,216,353	0	0	20,332	20,332	770,341	466,528,422
2005	3,415,462	318,176,383	3,380,924	394,928,581	0	0	20,332	20,332	770,409	467,011,842
2006	3,428,156	320,077,671	3,371,741	397,346,650	0	0	20,332	20,332	770,572	469,342,478
2007	3,419,604	325,338,416	3,400,114	403,098,123	0	0	20,332	20,332	770,753	475,198,024
2008	3,494,538	332,290,250	3,442,597	411,732,102	0	0	20,332	20,332	771,152	484,376,450
2009	3,356,500	323,758,093	3,322,769	401,075,506	0	0	20,332	20,332	770,912	472,616,110
2010	3,400,607	331,218,506	3,376,960	409,874,108	0	0	20,332	20,332	771,270	481,855,889
2011	3,422,124	329,688,604	3,348,821	409,033,206	0	0	20,328	20,328	770,679	480,769,176
2012	3,457,124	342,213,736	3,430,872	423,256,113	0	0	20,328	20,328	771,106	495,709,432
2013	3,203,211	315,912,988	3,173,064	392,073,565	0	0	20,328	20,328	723,617	460,740,548
2014	3,268,840	326,563,139	3,250,519	404,738,705	0	0	20,328	20,328	686,087	473,912,836
2015	3,187,119	317,957,535	3,115,646	394,339,879	0	0	19,915	19,915	629,999	461,259,215
2016	3,057,481	311,017,702	3,050,391	385,662,280	0	0	19,752	19,752	605,868	451,719,671
2017	3,063,872	309,633,974	3,013,633	384,356,192	0	0	19,754	19,754	563,884	449,937,002
2018	3,067,075	312,374,087	3,014,651	387,622,296	0	0	19,752	19,752	485,615	453,297,889
2019	3,024,548	304,947,173	2,948,285	379,550,059	0	0	17,073	17,073	419,744	444,932,168
2020	2,910,220	297,246,615	2,901,339	370,239,990	0	0	4,904	4,904	396,662	435,282,278
2021	2,786,887	294,359,502	2,828,444	365,653,931	0	0	4,061	4,061	374,016	430,512,253
2022	2,701,818	279,674,758	2,759,339	349,633,681	0	0	2,648	2,648	372,502	413,775,320
2023	2,821,213	283,163,651	2,762,692	355,955,759	0	0	2,648	2,648	371,807	420,067,933
2024	2,698,961	271,903,139	2,696,433	343,109,776	0	0	2,646	2,646	370,155	406,538,284
2025	2,714,720	277,492,489	2,709,017	349,465,009	0	0	2,644	2,644	368,407	413,100,672
2026	2,693,716	269,466,006	2,693,378	341,594,998	0	0	2,643	2,643	367,932	404,777,353
2027	2,685,525	275,747,583	2,701,778	348,471,090	0	0	2,640	2,640	367,057	411,829,371
2028	2,670,130	267,393,479	2,665,169	340,091,570	0	0	2,639	2,639	365,732	402,999,442
2029	2,675,520	272,028,095	2,667,137	345,468,346	0	0	2,637	2,637	364,472	408,470,158
2030	2,666,467	265,374,383	2,639,214	339,092,821	0	0	2,636	2,636	363,069	401,911,818
2031	2,675,494	268,830,280	2,623,681	343,262,153	0	0	2,634	2,634	360,185	406,118,932
2032	2,608,420	257,825,785	2,561,643	330,816,370	0	0	2,633	2,633	360,242	393,063,357
2033	2,643,339	263,099,739	2,576,877	336,717,120	0	0	2,632	2,632	359,381	399,372,724
2034	2,501,318	248,503,342	2,467,754	318,919,922	0	0	2,631	2,631	355,621	380,240,818
2035	2,693,801	267,833,642	2,600,254	342,234,779	0	0	2,631	2,631	353,530	404,915,384
TOTAL	161,261,182	143,576,960	20,172,564	100	0	0	1,045,257	1,045,257	40,484,369	23,957,306,318

TABLE B-20A: CALCULATION OF DELTA WATER RATES

[values in millions of dollars (\$) or millions of acre-feet (AF)
discounted to 1984 at 4.736 percent per annum]

Procedure	Capital Cost Component	Minimum Operation, Maintenance, Power and Replacement Component ^(a)	Total Delta Water Rate
<u>In accordance with amendment to Articles 22(e) and 22(g)</u> (for all contractors except Solano County Flood Control and Water Conservation District)			
<u>Commencing in 1985</u>			
Total costs of "initial conservation facilities" to be reimbursed, and project water entitlements during the project repayment period	\$1,535.84 ^(b) 109.84 AF	\$809.58 ^(c) 109.84 AF	\$2,345.42 109.84 AF
<u>Less</u> , project power revenues to be realized during the project repayment period	661.58	209.11	870.69
<u>Less</u> , Delta Water Charges paid, and project water entitlements, prior to 1985	278.74 ^(d) 32.58 AF	103.03 32.58 AF	381.77 32.58 AF
Subtotal	\$595.52 77.26 AF	\$497.44 77.26 AF	\$1,092.96 77.26 AF
Rate applicable 1985 through 2035	\$7.71 per acre-foot	\$6.44 per acre-foot	\$14.15 per acre-foot
<u>Calculation under original provisions of Article 22(e) and 22(g)</u> (for Solano County Flood Control and Water Conservation District)			
<u>Commencing in 1985</u>			
Total costs of "initial" project conservation facilities to be reimbursed and project water entitlements during the project repayment period	\$1,573.20 ^(b) 109.84 AF	\$809.58 ^(c) 109.84 AF	\$2,382.78 109.84 AF
<u>Less</u> , project power revenues to be realized during the project repayment period	661.58	209.11	870.69
<u>Less</u> , Delta Water Charges paid, and project water entitlements, prior to 1985	278.74 ^(d) 32.58 AF	103.03 32.58 AF	381.77 32.58 AF
Total	\$632.88 77.26 AF	\$497.44 77.26 AF	\$1,130.32 77.26 AF
Rate applicable 1985 through 2035	\$8.19 per acre-foot	\$6.44 per acre-foot	\$14.63 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
<u>Initial Conservation Facilities</u>			
Oroville Division			
Water supply and power costs ^(b)	\$13.90	\$5.82	\$19.72
<u>Less, Oroville power revenues</u>	<u>-8.56</u>	<u>-2.71</u>	<u>-11.27</u>
Subtotal	5.34	3.11	8.45
Delta Facilities	1.78	1.60	3.38
California Aqueduct, portion of Reaches 1, 2A, 2B, and 3	1.75	1.24	2.99
San Luis Facilities	2.66	1.82	4.48
Planning and preoperating costs through 1983	0.17	0	0.17
<u>Less, Capital Cost Credits</u>	<u>-0.38</u>	0	<u>-0.38</u>
<u>Less, Delta Water Charges paid prior to 1985</u>	<u>-3.61</u>	<u>-1.33</u>	<u>-4.94</u>
Rate applicable 1985 through 2035	\$7.71	\$6.44	\$14.15

- 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)

Sheet 1 of 4

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	13,899	13,899	381,970	435,728	1,244,939	2,062,637	106,103	192,937	299,040
1986	71,372	13,899	85,271	396,117	454,120	1,244,939	2,095,176	141,470	257,617	399,087
1987	76,323	292,613	368,936	410,264	471,096	1,244,939	2,126,299	176,838	321,194	498,032
1988	81,275	395,028	476,303	424,411	488,072	1,244,939	2,157,422	219,279	399,257	618,536
1989	87,641	504,758	592,399	438,558	505,049	1,273,233	2,216,840	282,941	514,131	797,072
1990	95,422	614,488	709,910	452,705	522,025	1,301,527	2,276,257	353,676	643,492	997,168
1991	103,132	614,488	717,620	480,999	543,246	1,329,821	2,354,066	353,676	643,492	997,168
1992	110,913	614,488	725,401	509,293	564,466	1,358,115	2,431,874	353,676	643,492	997,168
1993	120,108	614,488	734,596	537,587	585,687	1,386,409	2,509,683	353,676	643,492	997,168
1994	129,233	614,488	743,721	565,881	594,175	1,414,703	2,574,759	353,676	643,492	997,168
1995	138,358	614,488	752,846	594,175	594,175	1,414,703	2,603,053	353,676	643,492	997,168
1996	147,483	614,488	761,971	622,469	594,175	1,414,703	2,631,347	353,676	643,492	997,168
1997	156,597	614,488	771,025	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
1998	165,662	614,488	780,150	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
1999	174,433	614,488	788,921	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2000	184,619	614,488	799,107	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2001	193,319	614,488	807,807	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2002	200,676	614,488	815,164	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2003	209,376	614,488	823,864	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2004	217,864	614,488	832,352	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2005	226,352	614,488	840,840	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2006	232,719	614,488	847,207	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2007	241,914	614,488	856,402	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2008	249,695	614,488	864,183	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2009	257,476	614,488	871,964	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2010	265,257	614,488	879,745	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2011	274,452	614,488	888,940	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2012	282,233	614,488	896,721	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2013	291,429	614,488	905,917	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2014	300,624	614,488	915,112	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2015	309,820	614,488	924,308	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2016	318,308	614,488	932,796	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2017	326,796	614,488	941,284	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2018	335,285	614,488	949,773	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2019	343,773	614,488	958,261	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2020	352,261	614,488	966,749	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2021	353,676	614,488	968,164	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2022	353,676	614,488	968,164	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2023	353,676	614,488	968,164	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2024	353,676	614,488	968,164	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2025	353,676	614,488	968,164	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2026	353,676	614,488	968,164	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2027	353,676	614,488	968,164	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2028	353,676	614,488	968,164	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2029	353,676	614,488	968,164	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2030	353,676	614,488	968,164	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2031	353,676	614,488	968,164	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2032	353,676	614,488	968,164	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2033	353,676	614,488	968,164	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2034	353,676	614,488	968,164	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
2035	353,676	614,488	968,164	650,763	594,175	1,414,703	2,659,641	353,676	643,492	997,168
TOTAL	12,577,280	29,599,815	42,177,095	34,483,458	33,530,807	86,195,847	154,210,112	17,360,270	31,573,849	48,934,119

CHARGE FOR EACH CONTRACTOR

(in dollars)

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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	37,169	0	881,371	6,984,026	27,272	70,658	933,481	9,646,770
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	1,140,169	9,934,654	39,893	61,770	805,723	12,764,627
1985	179,667	667,740	42,441	0	1,328,406	11,616,125	48,100	69,320	1,314,259	15,266,058
1986	179,667	697,449	42,441	0	1,392,068	12,305,086	52,344	72,150	1,375,091	16,116,296
1987	179,667	727,157	42,441	0	1,472,706	13,006,778	56,588	73,565	1,434,509	16,993,411
1988	179,667	756,866	42,441	0	1,540,611	13,661,786	56,588	76,394	1,493,926	17,808,279
1989	179,667	786,575	42,441	0	1,601,444	14,134,297	56,588	79,223	1,554,758	18,434,993
1990	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
1991	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
1992	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
1993	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
1994	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
1995	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
1996	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
1997	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
1998	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
1999	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2000	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2001	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2002	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2003	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2004	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2005	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2006	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2007	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2008	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2009	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2010	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2011	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2012	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2013	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2014	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2015	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2016	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2017	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2018	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2019	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2020	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2021	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2022	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2023	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2024	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2025	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2026	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2027	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2028	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2029	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2030	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2031	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2032	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2033	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2034	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
2035	179,667	816,284	42,441	0	1,691,985	14,625,198	56,588	80,638	1,676,423	19,169,224
TOTAL	11,073,966		2,674,726	0	94,997,887		3,218,268		95,195,346	
		47,097,876				819,460,827		4,785,907		1,078,504,803

TABLE B-21: TOTAL DELTA WATER

(in dollars)

Sheet 3 of 4

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	313,057	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	1,152,980	308,405
1986	594,175	437,143	257,617	65,642	410,264	26,031	585,687	209,376	1,202,497	328,211
1987	622,469	465,437	274,891	69,745	445,631	27,728	618,225	218,147	1,259,086	348,017
1988	650,763	499,390	292,164	73,847	480,999	29,284	650,763	226,918	1,315,674	367,823
1989	1,778,282	529,099	309,438	77,950	516,367	30,982	686,131	235,690	1,372,262	387,629
1990	1,868,823	555,978	326,796	82,053	539,002	32,538	718,669	244,744	1,435,923	407,434
1991	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
1992	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
1993	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
1994	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
1995	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
1996	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
1997	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
1998	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
1999	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2000	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2001	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2002	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2003	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2004	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2005	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2006	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2007	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2008	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2009	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2010	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2011	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2012	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2013	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2014	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2015	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2016	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2017	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2018	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2019	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2020	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2021	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2022	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2023	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2024	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2025	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2026	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2027	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2028	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2029	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2030	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2031	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2032	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2033	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2034	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
2035	1,957,949	587,102	326,796	82,053	539,002	32,538	718,669	244,744	1,451,485	407,434
TOTAL	102,717,017	31,660,883	17,984,989	4,509,532	29,493,630	1,785,628	39,554,140	13,762,719	82,189,255	22,876,333

CHARGE FOR EACH CONTRACTOR

(in dollars)

Sheet 4 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Geronio 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	27,556,606
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	29,199,243	0	16,117	14,694	30,811	0	49,027,703
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	37,126,030
1985	166,935	22,050,974	84,882	26,202,406	24,050	16,976	12,166	53,192	0	43,897,232
1986	182,497	23,474,165	113,176	27,886,481	29,709	16,976	12,591	59,276	0	46,641,587
1987	198,058	24,895,941	141,470	29,584,845	35,368	16,976	13,015	65,359	0	49,636,882
1988	213,620	26,319,132	183,911	31,304,288	41,026	16,976	13,581	71,583	0	52,436,411
1989	229,182	27,742,324	226,352	34,121,688	46,685	16,976	14,147	77,808	0	56,240,800
1990	244,744	28,456,749	282,941	35,196,394	53,759	16,976	14,713	85,448	0	58,434,401
1991	244,744	28,456,749	282,941	35,332,206	135,811	389,043	15,279	540,133	0	59,110,417
1992	244,744	28,456,749	282,941	35,332,206	135,811	389,043	15,845	540,699	0	59,196,572
1993	244,744	28,456,749	282,941	35,332,206	135,811	389,043	16,411	541,265	0	59,284,142
1994	244,744	28,456,749	282,941	35,332,206	135,811	389,043	16,976	541,830	0	59,358,908
1995	244,744	28,456,749	282,941	35,332,206	135,811	389,043	17,684	542,538	0	59,397,035
1996	244,744	28,456,749	282,941	35,332,206	135,811	389,043	18,391	543,245	0	59,435,161
1997	244,744	28,456,749	282,941	35,332,206	135,811	389,043	19,098	543,952	0	59,473,216
1998	244,744	28,456,749	282,941	35,332,206	135,811	389,043	19,806	544,660	0	59,483,049
1999	244,744	28,456,749	282,941	35,332,206	135,811	389,043	20,513	545,367	0	59,492,527
2000	244,744	28,456,749	282,941	35,332,206	135,811	389,043	21,362	546,216	0	59,503,562
2001	244,744	28,456,749	282,941	35,332,206	135,811	389,043	22,211	547,065	0	59,513,111
2002	244,744	28,456,749	282,941	35,332,206	135,811	389,043	23,060	547,914	0	59,521,317
2003	244,744	28,456,749	282,941	35,332,206	135,811	389,043	23,908	548,762	0	59,530,865
2004	244,744	28,456,749	282,941	35,332,206	135,811	389,043	24,757	549,611	0	59,540,202
2005	244,744	28,456,749	282,941	35,332,206	135,811	389,043	25,606	550,460	0	59,549,539
2006	244,744	28,456,749	282,941	35,332,206	135,811	389,043	26,596	551,450	0	59,556,896
2007	244,744	28,456,749	282,941	35,332,206	135,811	389,043	27,587	552,441	0	59,567,082
2008	244,744	28,456,749	282,941	35,332,206	135,811	389,043	28,577	553,431	0	59,575,853
2009	244,744	28,456,749	282,941	35,332,206	135,811	389,043	29,567	554,421	0	59,584,624
2010	244,744	28,456,749	282,941	35,332,206	135,811	389,043	30,558	555,412	0	59,593,396
2011	244,744	28,456,749	282,941	35,332,206	135,811	389,043	31,689	556,443	0	59,603,722
2012	244,744	28,456,749	282,941	35,332,206	135,811	389,043	32,821	557,474	0	59,612,635
2013	244,744	28,456,749	282,941	35,332,206	135,811	389,043	34,094	558,494	0	59,623,104
2014	244,744	28,456,749	282,941	35,332,206	135,811	389,043	35,368	560,222	0	59,633,573
2015	244,744	28,456,749	282,941	35,332,206	135,811	389,043	36,782	561,636	0	59,644,183
2016	244,744	28,456,749	282,941	35,332,206	135,811	389,043	38,197	563,051	0	59,654,086
2017	244,744	28,456,749	282,941	35,332,206	135,811	389,043	38,197	563,051	0	59,662,574
2018	244,744	28,456,749	282,941	35,332,206	135,811	389,043	38,197	563,051	0	59,671,063
2019	244,744	28,456,749	282,941	35,332,206	135,811	389,043	38,197	563,051	0	59,679,551
2020	244,744	28,456,749	282,941	35,332,206	135,811	389,043	38,197	563,051	0	59,688,039
2021	244,744	28,456,749	282,941	35,332,206	135,811	389,043	38,197	563,051	0	59,689,454
2022	244,744	28,456,749	282,941	35,332,206	135,811	389,043	38,197	563,051	0	59,689,454
2023	244,744	28,456,749	282,941	35,332,206	135,811	389,043	38,197	563,051	0	59,689,454
2024	244,744	28,456,749	282,941	35,332,206	135,811	389,043	38,197	563,051	0	59,689,454
2025	244,744	28,456,749	282,941	35,332,206	135,811	389,043	38,197	563,051	0	59,689,454
2026	244,744	28,456,749	282,941	35,332,206	135,811	389,043	38,197	563,051	0	59,689,454
2027	244,744	28,456,749	282,941	35,332,206	135,811	389,043	38,197	563,051	0	59,689,454
2028	244,744	28,456,749	282,941	35,332,206	135,811	389,043	38,197	563,051	0	59,689,454
2029	244,744	28,456,749	282,941	35,332,206	135,811	389,043	38,197	563,051	0	59,689,454
2030	244,744	28,456,749	282,941	35,332,206	135,811	389,043	38,197	563,051	0	59,689,454
2031	244,744	28,456,749	282,941	35,332,206	135,811	389,043	38,197	563,051	0	59,689,454
2032	244,744	28,456,749	282,941	35,332,206	135,811	389,043	38,197	563,051	0	59,689,454
2033	244,744	28,456,749	282,941	35,332,206	135,811	389,043	38,197	563,051	0	59,689,454
2034	244,744	28,456,749	282,941	35,332,206	135,811	389,043	38,197	563,051	0	59,689,454
2035	244,744	28,456,749	282,941	35,332,206	135,811	389,043	38,197	563,051	0	59,689,454
TOTAL	12,904,799	13,985,873	1,948,043,356	6,362,682	1,567,858	25,721,148	0	3,297,590,633		

TABLE B—22: TOTAL TRANSPORTATION^(a) AND

(in dollars)

Sheet 1 of 4

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	153,228	189,353	457,015	799,596	0	0	0
1964	0	0	0	174,022	267,277	633,956	1,075,255	9,104	18,026	27,130
1965	0	0	0	249,751	369,761	1,178,086	1,797,598	14,995	29,064	44,059
1966	19,499	0	19,499	276,276	380,613	1,436,434	2,093,323	24,480	46,774	71,254
1967	43,804	0	43,804	366,235	509,572	1,886,364	2,762,171	43,170	81,429	124,599
1968	132,716	0	132,716	417,361	590,267	2,206,687	3,214,315	69,576	130,327	199,903
1969	260,066	0	260,066	484,318	540,465	2,328,995	3,353,778	124,729	232,211	356,940
1970	283,326	0	283,326	548,939	595,802	2,819,005	3,963,746	137,859	256,524	394,383
1971	233,639	0	233,639	486,330	630,534	2,838,195	3,955,059	139,087	258,872	397,959
1972	231,303	0	231,303	614,837	777,556	3,059,012	4,451,405	143,725	267,545	411,270
1973	227,528	28,577	256,105	600,576	671,610	3,152,118	4,424,304	142,412	265,175	407,587
1974	247,111	30,062	277,173	640,723	701,979	3,356,394	4,699,096	143,771	267,733	411,504
1975	244,618	33,105	277,723	697,620	747,782	3,245,491	4,690,893	160,426	298,503	458,929
1976	279,068	37,357	316,425	810,220	898,196	3,394,031	5,102,447	272,946	506,292	779,238
1977	303,137	41,347	344,484	777,989	876,923	3,335,173	4,990,085	283,780	526,738	810,518
1978	285,434	44,929	330,363	872,757	896,540	3,768,420	5,537,717	294,618	546,899	841,517
1979	299,115	48,487	347,602	959,664	963,583	3,848,634	5,771,881	290,405	539,242	829,647
1980	322,522	79,423	401,945	1,113,292	1,129,181	4,158,973	6,401,446	330,524	594,002	924,526
1981	360,246	101,977	462,223	1,212,577	1,298,665	4,519,966	7,031,208	358,481	642,143	1,000,624
1982	455,338	127,262	582,600	1,350,818	1,351,780	5,297,468	8,000,066	379,290	732,939	1,112,229
1983	413,565	140,438	554,003	1,180,014	1,216,026	5,442,136	7,838,176	411,418	761,670	1,173,088
1984	594,124	214,323	808,447	2,901,536	3,166,370	9,720,365	15,788,271	464,748	859,984	1,324,732
1985	860,402	444,138	1,304,540	3,133,194	3,398,676	9,951,485	16,483,355	526,616	972,649	1,499,265
1986	1,541,022	1,142,238	2,683,260	2,692,699	2,906,098	8,352,991	13,951,788	566,665	1,045,968	1,612,633
1987	2,326,821	2,518,593	4,845,414	2,786,440	3,035,253	8,543,030	14,364,723	602,422	1,110,262	1,712,684
1988	2,386,750	2,671,460	5,058,210	2,881,166	3,146,707	8,646,349	14,674,222	649,379	1,196,656	1,846,035
1989	2,414,965	2,803,371	5,218,336	2,941,762	3,218,239	8,764,479	14,924,480	719,650	1,323,724	2,043,374
1990	2,509,182	2,916,435	5,425,617	2,964,425	3,246,013	8,773,946	14,984,384	799,585	1,470,061	2,269,646
1991	2,535,024	2,927,447	5,462,471	3,085,766	3,338,060	8,901,388	15,325,214	1,583,658	2,901,073	4,484,731
1992	2,558,716	2,943,218	5,501,934	3,189,141	3,410,381	8,981,115	15,580,637	1,610,614	2,950,971	4,561,585
1993	2,587,734	2,962,014	5,549,748	3,266,005	3,454,519	8,995,151	15,715,675	1,609,900	2,949,717	4,559,617
1994	2,615,078	2,979,253	5,594,331	3,366,194	3,473,796	9,073,778	15,913,768	1,605,006	2,940,839	4,545,845
1995	2,648,014	3,035,602	5,683,616	3,495,482	3,489,232	9,110,540	16,095,254	1,611,841	2,953,340	4,565,181
1996	2,675,876	3,066,103	5,741,979	3,598,239	3,477,955	9,083,691	16,159,885	1,608,204	2,946,742	4,554,946
1997	2,707,835	3,074,851	5,782,686	3,725,631	3,490,154	9,112,739	16,328,524	1,614,845	2,958,888	4,573,733
1998	2,727,829	3,072,792	5,800,621	3,672,923	3,442,028	8,998,151	16,133,102	1,597,584	2,927,474	4,525,058
1999	2,754,709	3,076,887	5,831,596	3,663,501	3,433,427	8,977,696	16,074,624	1,595,429	2,923,640	4,519,069
2000	2,779,375	3,077,003	5,856,378	3,625,344	3,398,590	8,894,742	15,918,676	1,583,422	2,901,799	4,485,221
2001	2,812,089	3,081,519	5,893,608	3,645,884	3,417,384	8,939,797	16,003,065	1,592,511	2,918,468	4,510,979
2002	2,837,472	3,081,675	5,919,147	3,657,392	3,427,899	8,964,851	16,050,142	1,598,746	2,929,951	4,528,697
2003	2,860,719	3,078,493	5,939,212	3,659,925	3,431,585	8,982,486	16,073,996	1,588,815	2,911,869	4,500,684
2004	2,892,737	3,083,394	5,976,131	3,649,150	3,421,823	8,959,723	16,030,696	1,586,035	2,906,917	4,492,952
2005	2,916,180	3,081,725	5,997,905	3,635,703	3,409,548	8,930,499	15,975,750	1,581,876	2,899,372	4,481,248
2006	2,933,814	3,080,933	6,014,747	3,625,301	3,400,051	8,907,897	15,933,249	1,583,344	2,902,210	4,485,554
2007	2,963,199	3,080,756	6,043,955	3,629,009	3,403,438	8,915,972	15,948,419	1,585,354	2,905,929	4,491,283
2008	2,994,135	3,083,225	6,077,360	3,652,282	3,424,692	8,966,601	16,043,575	1,594,799	2,923,256	4,518,055
2009	3,003,319	3,075,831	6,079,150	3,598,693	3,375,760	8,850,082	15,824,535	1,575,988	2,888,941	4,464,929
2010	3,032,742	3,077,636	6,110,378	3,617,166	3,392,632	8,890,276	15,900,074	1,583,651	2,903,016	4,486,667
2011	3,057,299	3,076,371	6,133,670	3,603,343	3,379,960	8,859,751	15,843,054	1,579,259	2,895,025	4,474,284
2012	3,091,773	3,080,300	6,172,073	3,634,890	3,408,771	8,928,373	15,972,034	1,591,562	2,917,562	4,509,124
2013	3,069,878	3,056,617	6,126,495	3,367,422	3,163,100	8,218,730	14,749,252	1,539,417	2,822,604	4,362,021
2014	3,110,383	3,062,663	6,173,046	3,368,166	3,140,586	8,129,958	14,638,710	1,544,594	2,830,738	4,375,332
2015	3,108,095	3,046,831	6,154,926	3,243,856	2,997,751	7,567,063	13,808,670	1,513,437	2,773,987	4,287,424
2016	3,104,103	3,042,385	6,146,488	3,196,885	2,948,283	7,329,827	13,474,995	1,496,171	2,742,234	4,238,405
2017	3,104,134	3,042,352	6,146,486	3,163,297	2,917,353	7,209,104	13,289,754	1,477,233	2,707,226	4,184,459
2018	3,060,804	3,048,762	6,109,566	3,153,921	2,907,351	7,156,027	13,217,299	1,473,436	2,699,841	4,173,277
2019	3,043,559	3,049,996	6,093,555	3,121,637	2,877,992	7,066,608	13,066,237	1,470,729	2,694,693	4,165,422
2020	3,064,841	3,052,580	6,117,421	3,101,871	2,859,461	7,014,681	12,976,013	1,465,517	2,685,033	4,150,550
2021	3,068,716	3,053,500	6,122,216	3,064,956	2,823,476	6,915,294	12,803,726	1,465,532	2,684,950	4,150,482
2022	3,049,638	3,039,951	6,089,589	3,049,355	2,809,056	6,878,356	12,736,767	1,455,231	2,665,973	4,121,204
2023	3,051,112	3,012,347	6,063,459	3,054,954	2,814,143	6,888,623	12,757,720	1,454,999	2,665,488	4,120,487
2024	3,040,052	3,007,322	6,047,374	3,035,706	2,796,407	6,844,933	12,677,046	1,436,758	2,631,937	4,068,695
2025	3,035,640	3,005,999	6,041,639	3,046,091	2,805,712	6,865,493	12,717,296	1,440,325	2,638,394	4,078,719
2026	3,028,552	3,001,021	6,029,573	3,040,086	2,800,213	6,852,168	12,692,467	1,328,029	2,431,052	3,759,081
2027	3,029,520	2,998,643	6,028,163	3,048,423	2,807,730	6,868,447	12,724,600	1,328,803	2,431,954	3,760,757
2028	3,019,432	2,992,615	6,012,047	3,028,597	2,789,573	6,823,629	12,641,799	1,315,424	2,407,230	3,722,654
2029	3,019,885	2,990,638	6,010,523	3,034,036	2,794,509	6,834,420	12,662,965	1,316,256	2,408,652	3,724,938
2030	3,008,127	2,978,028	5,986,155	3,030,020	2,790,793	6,825,079	12,645,892	1,311,578	2,399,866	3,711,444
2031	2,997,019	2,964,657	5,961,676	3,034,844	2,795,142	6,834,947	12,664,933	1,304,432	2,386,545	3,690,977
2032	2,976,415	2,945,518	5,921,933	3,013,391	2,775,520	6,787,887	12,576,798	1,298,746	2,376,114	3,674,860
2033	2,956,093	2,913,208	5,869,301	3,036,801	2,796,867	6,838,437	12,672,105	1,309,185	2,395,171	3,704,356
2034	2,866,185	2,841,566	5,707,751	2,977,204	2,742,355	6,707,426	12,426,985	1,288,594	2,357,484	3,646,078
2035	2,670,332	2,616,933	5,287,265	3,061,409	2,819,229	6,890,252	12,770,890	1,318,339	2,411,764	3,730,103
TOTAL	148,743,484	149,364,682	298,108,166	183,870,411	178,838,895	484,687,886	847,397,192	75,519,099	138,487,341	214,006,440

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)

Sheet 2 of 4

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	2,783	0	0	0	0	0	2,783
1965	0	0	0	6,154	75,192	0	0	0	0	81,346
1966	0	0	0	12,284	140,284	0	0	0	0	152,568
1967	0	0	0	26,788	273,277	0	0	0	0	300,065
1968	86,512	226,018	20,915	55,574	453,591	1,714,043	16,230	19,315	308,192	2,900,390
1969	139,483	242,197	15,540	88,731	534,609	2,738,269	15,876	19,022	462,111	4,255,838
1970	182,678	307,421	38,974	95,866	584,275	3,890,136	20,454	30,027	523,727	5,673,558
1971	198,007	329,001	41,703	96,928	616,683	5,214,773	26,171	34,281	715,137	7,272,684
1972	233,005	382,375	44,900	99,269	642,645	7,168,615	25,442	63,047	1,990,266	10,649,564
1973	240,175	400,307	43,586	98,820	1,037,023	7,318,495	27,788	38,823	785,024	9,990,041
1974	262,971	509,519	44,800	99,796	1,155,976	8,031,175	28,502	42,067	1,047,399	11,222,205
1975	290,849	682,511	45,246	108,082	1,208,401	9,418,532	30,178	47,668	1,561,448	13,392,915
1976	328,926	721,427	47,767	109,394	1,335,126	10,670,716	31,602	51,538	1,445,725	14,742,221
1977	330,449	581,561	43,676	113,869	1,378,329	10,982,056	33,332	53,700	1,141,374	14,658,346
1978	374,551	711,873	46,220	118,301	1,602,382	13,533,522	38,274	59,168	1,185,486	17,669,777
1979	417,584	783,544	52,496	115,557	1,678,259	15,399,654	41,832	69,969	1,728,284	20,287,179
1980	417,877	971,099	53,888	127,752	1,787,097	17,150,460	47,115	94,671	1,687,310	22,337,269
1981	499,370	1,199,425	86,512	134,899	2,404,164	22,391,992	64,325	100,082	2,257,949	29,138,718
1982	532,093	1,253,269	74,817	137,423	2,539,630	25,329,995	69,611	107,308	2,283,525	32,327,671
1983	539,644	1,248,835	56,345	154,214	2,089,391	26,162,650	79,550	93,719	4,776,065	30,900,413
1984	927,065	2,168,255	205,910	170,063	4,888,239	49,541,862	138,315	160,208	2,047,710	60,247,627
1985	927,266	2,271,339	134,349	176,048	5,153,821	52,810,823	150,450	168,359	5,064,340	66,856,795
1986	785,043	1,995,757	112,317	177,768	4,537,610	46,330,192	134,775	150,991	4,278,602	58,503,055
1987	814,896	2,129,497	115,855	177,403	4,840,450	50,160,270	148,932	157,011	4,500,620	63,044,934
1988	818,008	2,213,699	116,194	179,000	4,981,692	51,514,955	149,647	162,957	4,409,356	64,545,508
1989	817,242	2,289,668	116,070	181,592	5,659,181	54,049,178	150,355	168,372	4,564,657	67,996,315
1990	810,290	2,355,594	115,431	185,420	6,250,538	55,258,516	150,796	170,295	4,818,443	70,115,323
1991	812,572	2,358,869	115,598	189,439	6,302,710	55,347,415	152,129	170,499	4,825,143	70,274,374
1992	817,133	2,349,627	115,118	196,481	6,301,308	55,087,586	152,204	169,915	4,806,146	69,995,518
1993	816,194	2,347,102	114,981	197,019	6,298,604	55,020,849	152,210	169,679	4,800,873	69,917,511
1994	813,671	2,340,712	114,650	197,040	6,277,302	54,850,219	151,765	169,178	4,787,742	69,702,279
1995	817,040	2,350,750	115,172	197,096	6,306,821	55,088,675	152,459	169,830	4,808,351	70,006,194
1996	815,162	2,345,776	114,914	197,115	6,291,833	54,968,926	152,112	169,429	4,798,126	69,853,393
1997	818,453	2,356,513	115,471	197,166	6,323,345	55,222,595	152,155	169,921	4,820,175	70,176,494
1998	809,700	2,332,056	114,199	197,152	6,242,835	54,589,541	151,160	168,092	4,769,948	69,374,683
1999	808,452	2,327,364	113,954	197,234	6,222,623	54,450,232	150,830	167,578	4,760,301	69,198,568
2000	802,353	2,311,072	113,106	197,234	6,172,808	54,044,546	149,700	166,388	4,726,838	68,684,045
2001	806,852	2,323,956	113,775	197,506	6,212,551	54,369,474	150,583	167,136	4,753,269	69,095,102
2002	809,947	2,333,886	114,291	197,888	6,240,742	54,607,126	151,234	167,772	4,773,646	69,396,532
2003	804,882	2,315,991	113,358	197,891	6,180,440	54,158,246	149,995	166,577	4,736,895	68,824,275
2004	803,787	2,310,932	113,095	198,946	6,159,917	54,051,089	149,575	166,195	4,726,466	68,680,002
2005	801,638	2,304,937	112,784	198,968	6,142,607	53,914,451	149,158	165,790	4,714,157	68,504,490
2006	803,092	2,301,009	112,567	201,035	6,134,132	53,872,575	148,869	165,502	4,705,833	68,444,614
2007	804,009	2,303,475	112,696	201,091	6,140,048	53,920,686	149,036	165,662	4,710,891	68,507,594
2008	808,586	2,315,997	113,346	201,215	6,178,533	54,233,431	149,898	166,495	4,736,589	68,904,090
2009	799,164	2,289,959	111,994	201,141	6,097,645	53,582,872	148,098	164,747	4,683,123	68,078,743
2010	802,856	2,300,055	112,516	201,252	6,128,770	53,835,336	148,792	165,418	4,703,843	68,398,838
2011	800,515	2,293,969	112,199	201,061	6,110,514	53,685,954	148,376	165,017	4,691,323	68,208,928
2012	806,525	2,310,434	113,054	201,193	6,161,477	54,097,982	149,510	166,113	4,725,120	68,731,408
2013	780,161	2,237,468	109,261	201,122	5,934,381	52,273,893	144,454	161,206	4,575,274	66,417,220
2014	787,143	2,256,631	110,256	198,491	5,993,573	52,752,802	145,778	162,486	4,614,613	67,021,773
2015	773,897	2,219,554	108,327	195,346	5,802,513	51,827,513	143,196	159,965	4,538,432	65,768,743
2016	769,769	2,207,993	107,725	189,313	5,701,131	51,538,532	142,389	159,182	4,514,678	65,330,712
2017	769,469	2,206,165	107,629	174,903	5,564,554	51,508,711	142,256	159,196	4,510,907	65,143,790
2018	774,824	2,219,581	108,327	151,829	5,490,090	51,868,086	134,493	160,211	4,538,449	65,445,890
2019	775,371	2,219,546	108,326	143,206	5,432,275	51,892,981	133,971	160,318	4,538,378	65,404,372
2020	773,610	2,212,487	107,958	140,949	5,383,204	51,754,341	133,273	159,804	4,523,889	65,189,515
2021	774,289	2,213,847	108,029	139,832	5,363,909	51,778,493	133,222	159,992	4,526,680	65,198,293
2022	769,285	2,195,485	107,075	138,298	5,302,505	51,320,317	131,977	159,200	4,488,984	64,613,126
2023	769,417	2,194,059	107,000	137,873	5,295,556	51,309,035	131,847	159,402	4,486,061	64,590,250
2024	758,567	2,179,997	106,295	132,590	5,246,977	50,884,927	130,905	158,815	4,457,716	64,056,789
2025	760,593	2,185,618	106,588	132,041	5,259,292	51,017,311	131,267	159,193	4,469,252	64,221,155
2026	759,623	2,182,726	106,436	131,756	5,247,109	50,943,876	131,032	158,983	4,463,315	64,124,856
2027	761,414	2,187,498	106,686	131,126	5,257,657	51,061,160	131,317	159,288	4,473,115	64,269,261
2028	758,117	2,177,631	106,171	128,604	5,226,236	50,818,406	130,613	158,566	4,452,854	63,957,198
2029	759,478	2,180,522	106,329	128,404	5,232,699	50,874,580	130,796	158,707	4,458,949	64,030,474
2030	758,480	2,175,991	106,093	128,154	5,218,896	50,777,803	130,427	158,503	4,449,651	63,903,998
2031	759,925	2,178,265	106,212	126,856	5,212,997	50,842,942	130,302	158,755	4,454,317	63,970,571
2032	755,062	2,163,133	105,426	126,563	5,166,979	50,470,280	129,184	157,841	4,423,250	63,497,718
2033	759,433	2,175,170	106,050	126,036	5,192,780	50,746,154	129,796	158,646	4,447,961	63,842,026
2034	749,919	2,149,019	104,695	125,354	5,101,536	50,066,400	127,834	156,899	4,394,271	62,976,027
2035	765,901	2,192,935	106,976	124,941	5,222,984	51,141,718	130,659	159,831	4,484,438	64,330,383
TOTAL	46,380,314	127,609,953	6,640,219	10,765,538	318,325,363	2,923,250,946	8,011,088	9,410,520	257,132,982	3,707,526,923

b) See Table B-21 for total Delta Water Charge for each contractor.

TABLE B-22: TOTAL TRANSPORTATION^(a) AND

(in dollars)

Sheet 3 of 4

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	34,157	0	0	0	0	0	0	0	52,977	0
1964	64,333	20,594	14,772	4,474	38,055	1,171	29,119	8,403	84,712	35,826
1965	121,286	39,055	25,671	7,359	41,688	2,131	51,474	15,572	138,097	36,138
1966	220,607	73,829	45,735	12,758	74,778	3,839	92,432	28,303	237,641	62,825
1967	426,755	151,813	88,027	23,990	144,526	7,447	179,061	55,227	442,842	118,109
1968	751,102	318,212	155,831	42,363	256,347	13,135	317,087	97,427	798,194	213,208
1969	1,081,170	479,546	230,012	62,501	378,683	19,085	467,676	140,953	1,230,834	328,429
1970	1,406,261	611,229	321,896	91,576	530,224	25,764	645,323	188,753	1,815,222	477,325
1971	1,739,719	768,142	441,451	130,994	727,394	32,496	873,466	236,071	2,590,119	672,909
1972	2,220,424	964,786	613,522	188,865	1,006,552	44,487	1,197,163	292,834	3,819,091	965,939
1973	2,373,261	1,020,570	757,959	194,096	1,234,341	46,800	1,288,331	318,821	4,089,989	977,420
1974	2,494,107	1,096,970	781,629	207,266	1,274,508	49,682	1,347,131	337,132	4,529,059	1,121,887
1975	2,711,937	1,167,386	827,236	222,565	1,350,245	54,001	1,433,105	360,772	4,705,947	1,228,088
1976	3,176,487	1,173,370	884,473	235,460	1,443,294	58,496	1,509,545	386,823	4,907,110	1,299,912
1977	3,157,264	1,265,241	785,170	248,363	1,285,925	54,970	1,596,914	412,232	5,161,309	1,365,283
1978	3,738,338	1,363,322	1,013,628	264,645	1,633,160	59,041	1,675,145	434,370	5,256,218	1,430,116
1979	4,275,643	1,377,656	1,068,618	270,938	1,707,260	60,980	1,816,523	454,765	5,203,002	1,359,248
1980	5,004,968	1,513,522	1,185,010	299,457	1,918,972	68,461	1,992,538	504,388	5,718,617	1,504,065
1981	5,616,936	1,827,033	1,305,292	329,686	2,115,047	98,542	2,296,429	607,256	6,549,913	1,710,234
1982	5,886,003	2,094,078	1,564,723	363,941	2,529,348	82,926	2,396,028	646,382	6,917,880	2,072,988
1983	6,979,132	2,378,024	2,278,469	408,447	3,672,688	91,189	2,526,065	674,197	7,245,117	1,868,424
1984	9,341,771	4,064,299	5,276,572	776,320	8,441,354	100,470	2,828,697	758,510	9,741,476	4,793,444
1985	9,373,940	5,009,008	5,505,161	829,214	8,823,558	108,157	3,015,703	813,780	10,624,372	3,822,471
1986	8,090,888	4,020,040	4,369,666	711,750	7,028,523	209,841	3,073,955	941,916	9,634,570	3,475,033
1987	8,227,906	4,793,310	4,848,395	791,394	7,893,120	235,010	3,023,660	1,501,993	9,861,985	4,016,338
1988	8,350,267	5,550,525	5,084,341	829,262	8,373,308	237,735	3,033,567	1,646,914	10,004,584	4,219,723
1989	9,501,168	5,593,014	5,307,236	863,383	8,832,248	247,947	3,088,700	1,810,527	9,965,082	4,362,494
1990	9,750,211	5,620,266	5,581,880	921,235	9,205,659	239,319	12,019,916	2,010,733	17,166,693	4,915,540
1991	10,039,027	5,728,825	5,602,779	931,789	9,240,113	379,101	12,092,887	2,139,051	14,510,610	4,921,667
1992	10,185,483	5,633,648	5,593,458	966,099	9,224,749	392,457	12,043,943	2,250,677	14,759,234	4,999,511
1993	10,322,598	5,701,413	5,565,584	971,710	9,178,774	405,780	12,006,344	2,361,187	14,507,104	4,984,045
1994	10,445,684	5,669,536	5,543,851	992,658	9,142,931	418,543	11,952,246	2,467,989	14,532,108	5,018,089
1995	10,569,922	5,695,743	5,594,777	1,043,718	9,226,938	431,348	12,017,416	2,574,591	14,810,698	5,061,249
1996	10,746,638	5,716,806	5,560,996	1,041,430	9,171,209	443,780	11,980,313	2,650,201	14,396,956	5,007,800
1997	10,985,979	5,767,022	5,594,693	1,064,410	9,226,791	446,667	12,060,781	2,752,410	14,400,600	5,067,265
1998	11,054,987	5,672,093	5,460,033	1,055,150	9,004,689	437,219	11,782,510	2,782,107	16,686,642	4,993,341
1999	11,218,363	5,627,860	5,434,527	1,098,187	8,962,627	434,910	11,670,337	2,851,617	17,253,247	5,149,311
2000	11,322,701	5,535,022	5,355,347	1,096,179	8,832,031	428,991	11,514,092	2,896,308	22,054,394	5,091,135
2001	11,678,889	5,818,898	5,385,633	1,097,175	8,881,973	433,127	11,631,323	2,950,947	21,797,518	5,086,842
2002	12,019,100	6,130,910	5,445,025	1,156,492	8,979,940	435,787	11,701,550	2,996,381	22,520,011	5,272,767
2003	12,196,228	6,200,239	5,334,466	1,149,658	8,797,584	429,454	11,471,861	2,981,266	22,256,489	5,260,575
2004	12,452,939	6,340,499	5,282,391	1,153,290	8,711,693	426,734	11,370,115	2,990,167	22,085,670	5,269,740
2005	12,697,251	6,509,625	5,258,999	1,166,501	8,673,103	424,744	11,321,861	3,010,000	21,957,750	5,283,750
2006	13,029,766	6,494,150	5,255,287	1,192,020	8,666,995	423,740	11,298,347	3,036,616	22,068,067	5,351,866
2007	13,380,983	6,563,693	5,262,259	1,206,479	8,783,485	424,446	11,326,669	3,074,941	21,984,266	5,385,540
2008	13,815,136	6,631,846	5,326,099	1,252,017	8,783,780	428,712	11,439,061	3,139,529	22,495,095	5,541,214
2009	13,929,957	6,394,195	5,195,386	1,222,131	8,568,175	419,470	11,197,274	3,104,897	21,567,671	5,386,760
2010	14,348,168	6,507,364	5,242,072	1,256,008	8,645,180	422,968	11,289,641	3,164,049	21,853,441	5,496,916
2011	14,692,255	6,632,818	5,232,541	1,289,371	8,629,477	420,909	11,235,702	3,148,568	22,059,914	5,579,874
2012	15,250,350	6,995,236	5,294,286	1,317,077	8,731,306	426,672	11,387,511	3,191,866	22,228,770	5,679,079
2013	14,865,937	6,674,104	4,981,900	1,258,155	8,202,379	400,808	10,711,553	2,997,335	20,693,377	5,346,526
2014	15,409,544	7,018,889	5,050,985	1,297,474	8,330,672	406,286	10,857,514	3,038,892	21,103,224	5,490,499
2015	15,313,340	6,910,670	4,900,205	1,294,511	8,081,991	392,126	10,492,208	2,932,335	20,701,200	5,408,765
2016	15,497,460	6,763,854	4,802,996	1,242,451	7,921,649	386,249	10,343,313	2,888,223	19,782,720	5,255,563
2017	15,707,200	6,680,949	4,775,698	1,248,843	7,876,617	382,553	10,258,069	2,861,346	19,892,303	5,308,817
2018	16,072,966	6,685,504	4,789,014	1,251,081	7,898,612	383,834	10,296,534	2,870,753	19,905,319	5,360,638
2019	16,230,725	6,534,025	4,738,641	1,242,747	7,815,538	379,372	10,184,622	2,838,416	19,675,000	5,338,739
2020	16,316,190	6,442,915	4,634,614	1,204,631	7,643,965	372,169	9,993,509	2,786,690	18,930,387	5,204,518
2021	16,558,239	6,265,283	4,527,620	1,161,775	7,467,509	367,109	9,806,350	2,751,919	18,112,014	5,009,052
2022	16,721,832	6,119,264	4,431,335	1,139,197	7,308,713	360,517	9,597,798	2,703,207	17,594,301	4,869,374
2023	17,713,702	6,120,012	4,559,775	1,186,565	7,520,566	372,165	9,847,991	2,791,269	18,380,680	5,063,250
2024	17,974,976	5,964,231	4,474,371	1,138,491	7,379,695	367,326	9,722,745	2,755,000	17,511,198	4,870,982
2025	18,513,762	5,991,971	4,475,084	1,148,191	7,380,872	368,212	9,706,216	2,762,007	17,655,662	4,894,578
2026	19,016,880	5,957,538	4,453,544	1,143,738	7,345,356	366,844	9,657,971	2,751,886	17,535,997	4,859,916
2027	19,633,865	5,972,341	4,460,069	1,139,745	7,356,114	368,207	9,685,896	2,762,159	17,456,700	4,848,880
2028	20,027,697	5,896,598	4,426,742	1,137,036	7,301,147	365,087	9,600,396	2,738,796	17,395,833	4,821,232
2029	20,651,760	5,901,216	4,439,064	1,137,855	7,321,479	366,320	9,633,098	2,748,100	17,415,247	4,831,227
2030	21,157,502	5,839,838	4,428,700	1,135,101	7,304,380	365,412	9,611,203	2,741,308	17,360,738	4,816,347
2031	21,818,178	5,810,693	4,429,632	1,138,878	7,305,925	365,200	9,608,002	2,739,869	17,433,518	4,830,575
2032	21,544,178	5,677,157	4,365,994	1,114,317	7,200,958	360,636	9,486,983	2,705,555	16,990,297	4,722,219
2033	21,636,706	5,711,859	4,392,721	1,128,807	7,245,043	362,162	9,529,434	2,717,051	17,243,592	4,777,562
2034	20,916,684	5,482,544	4,238,423	1,078,387	6,990,548	350,152	9,217,235	2,626,826	16,348,516	4,545,965
2035	21,691,196	5,764,466	4,419,322	1,150,917	7,288,940	363,026	9,555,095	2,723,607	17,642,319	4,855,966
TOTAL	803,488,964	330,508,202	274,379,303	61,170,744	451,408,016	20,160,553	537,010,272	142,432,968	999,320,049	278,672,942

DELTA WATER^(b) CHARGE FOR EACH CONTRACTOR

(in dollars)

Sheet 4 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				FUTURE CONTRACTOR		GRAND TOTAL
	San Geronio 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	708,170	0	795,304	0	0	0	0	59,889	1,654,789	
1964	22,255	1,290,199	9,612	1,623,525	0	0	0	0	99,221	2,827,914	
1965	22,357	2,230,794	18,191	2,749,813	0	0	0	413	171,041	4,844,270	
1966	38,804	3,989,021	34,208	4,914,780	0	0	576	576	197,872	7,449,872	
1967	72,845	7,868,519	69,740	9,648,901	0	0	573	573	256,562	13,136,675	
1968	131,555	15,654,468	146,028	18,894,957	0	1,050	1,451	2,501	334,299	25,679,081	
1969	202,887	23,675,120	220,233	28,517,129	0	1,225	4,184	5,409	406,238	37,155,398	
1970	295,669	31,309,176	280,028	37,998,446	0	3,848	17,418	21,266	445,530	48,780,255	
1971	417,702	40,845,224	350,348	49,826,035	0	4,546	19,506	24,052	435,388	62,144,816	
1972	546,897	56,031,484	431,177	68,323,221	0	4,929	21,498	26,427	461,115	84,554,305	
1973	598,147	60,673,346	444,542	74,017,623	0	7,059	22,125	29,184	435,661	89,560,505	
1974	621,878	67,136,476	464,807	81,462,532	0	8,336	22,755	31,091	458,729	98,562,330	
1975	655,358	72,978,363	487,743	88,182,746	0	9,416	23,870	33,286	468,321	107,504,813	
1976	679,316	76,075,063	485,040	92,314,389	0	7,004	23,604	30,608	490,931	113,776,259	
1977	707,723	74,972,071	516,662	91,529,127	0	16,917	24,406	41,323	483,800	112,857,683	
1978	735,002	84,273,874	540,178	102,417,037	0	12,635	24,572	37,207	489,334	127,322,952	
1979	723,421	84,844,024	535,536	103,697,614	0	16,575	28,699	45,274	507,043	131,486,240	
1980	873,658	94,037,864	596,337	115,217,857	0	19,834	26,909	46,743	567,909	145,897,695	
1981	960,473	111,725,392	681,912	135,824,145	0	21,682	34,910	56,592	577,103	174,090,613	
1982	1,034,757	125,131,952	742,958	151,463,964	0	16,117	43,435	59,552	578,006	194,124,088	
1983	1,102,587	130,087,518	872,400	160,184,257	0	15,202	30,209	45,411	590,905	201,286,253	
1984	1,296,331	187,473,726	849,022	235,741,992	20,590	15,442	31,551	67,583	673,163	314,651,815	
1985	1,391,053	251,399,155	1,119,431	301,835,003	24,050	16,976	32,433	73,459	762,984	388,815,401	
1986	1,357,069	287,225,032	1,034,475	331,172,758	29,709	16,976	32,861	79,546	771,249	408,774,289	
1987	1,362,701	308,128,432	1,040,701	355,724,945	35,368	16,976	33,317	85,661	748,815	440,527,176	
1988	1,369,646	308,269,745	1,159,029	358,128,646	41,026	16,976	33,874	91,876	749,625	445,094,122	
1989	2,925,661	307,398,205	1,302,752	361,198,417	46,685	16,976	34,436	98,097	751,452	452,230,471	
1990	3,086,373	317,106,846	1,492,608	389,117,279	53,759	16,976	35,007	105,742	753,876	482,771,867	
1991	3,219,700	323,169,693	1,646,048	393,621,290	135,811	389,043	35,586	560,440	754,895	490,483,415	
1992	3,398,662	323,835,411	1,751,892	395,035,224	135,811	389,043	36,166	561,020	755,320	491,991,238	
1993	3,515,889	330,719,147	1,906,920	402,146,495	135,811	389,043	36,739	561,593	755,186	499,205,825	
1994	3,663,499	332,814,535	2,120,878	404,782,547	135,811	389,043	37,304	562,158	755,147	501,856,075	
1995	3,800,781	330,325,102	2,352,313	403,504,596	135,811	389,043	38,012	562,866	755,276	501,172,983	
1996	3,734,727	331,684,406	2,717,757	404,853,019	135,811	389,043	38,719	563,573	755,268	502,482,063	
1997	3,753,235	337,158,250	3,105,709	411,383,812	135,811	389,043	39,426	564,280	755,348	509,564,877	
1998	3,664,161	334,325,544	3,527,908	410,446,384	135,811	389,043	40,134	564,988	755,307	507,580,143	
1999	3,741,811	336,475,454	3,610,982	418,810,233	135,811	389,043	40,841	565,695	755,564	515,755,349	
2000	3,668,097	333,973,972	3,692,065	415,460,334	135,811	389,043	41,690	566,544	755,562	511,726,760	
2001	3,645,255	339,533,397	3,745,541	421,686,518	135,811	389,043	42,543	567,397	756,394	518,513,063	
2002	3,742,866	348,862,580	3,796,521	433,059,930	135,811	389,043	43,392	568,246	757,107	530,279,801	
2003	3,703,828	345,535,981	3,715,378	429,033,007	135,811	389,043	44,240	569,094	769,156	525,709,424	
2004	3,680,471	346,103,934	3,680,916	429,548,559	135,811	389,043	45,089	569,943	770,341	526,068,624	
2005	3,660,206	346,633,132	3,663,865	430,260,787	135,811	389,043	45,938	570,792	770,409	526,561,381	
2006	3,672,900	348,534,420	3,654,682	432,678,856	135,811	389,043	46,928	571,782	770,572	528,899,374	
2007	3,664,348	353,795,165	3,683,055	438,430,329	135,811	389,043	47,919	572,773	770,753	534,765,106	
2008	3,739,282	360,746,999	3,725,538	447,064,308	135,811	389,043	48,909	573,763	771,152	543,952,303	
2009	3,601,244	352,214,842	3,605,710	436,407,712	135,811	389,043	49,899	574,753	770,912	532,200,734	
2010	3,645,351	359,675,255	3,659,901	445,206,314	135,811	389,043	50,890	575,744	771,270	541,449,285	
2011	3,666,868	358,145,353	3,631,762	444,365,412	135,811	389,043	52,017	576,871	770,679	540,372,898	
2012	3,701,868	370,670,485	3,713,813	458,588,319	135,811	389,043	53,149	578,003	771,106	555,322,067	
2013	3,447,955	344,369,737	3,456,005	427,405,711	135,811	389,043	54,422	579,276	723,617	520,363,652	
2014	3,513,584	355,019,888	3,533,460	440,070,911	135,811	389,043	55,696	580,550	686,087	533,546,409	
2015	3,431,863	346,414,284	3,398,587	429,672,085	135,811	389,043	56,697	581,551	629,999	520,903,398	
2016	3,302,225	339,474,451	3,333,332	420,994,486	135,811	389,043	57,949	582,803	605,868	511,373,757	
2017	3,308,616	338,090,723	3,296,574	419,688,398	135,811	389,043	57,951	582,805	563,884	509,599,576	
2018	3,311,819	340,830,836	3,297,592	422,954,502	135,811	389,043	57,949	582,803	485,615	512,968,952	
2019	3,269,292	333,403,922	3,231,226	414,882,265	135,811	389,043	55,270	580,124	419,744	504,611,719	
2020	3,154,964	325,703,364	3,184,280	405,572,196	135,811	389,043	43,101	567,955	396,662	494,970,312	
2021	3,031,631	322,816,251	3,111,385	400,986,137	135,811	389,043	42,258	567,112	374,016	490,201,982	
2022	2,946,562	308,131,507	3,042,280	384,965,887	135,811	389,043	40,845	565,699	372,502	473,464,774	
2023	3,065,957	311,620,400	3,045,633	391,287,965	135,811	389,043	40,845	565,699	371,807	479,757,387	
2024	2,943,705	300,359,888	2,979,374	378,441,982	135,811	389,043	40,843	565,697	370,155	466,227,738	
2025	2,959,464	305,949,238	2,991,958	384,797,215	135,811	389,043	40,841	565,695	368,407	472,790,126	
2026	2,938,460	297,922,755	2,976,319	376,927,204	135,811	389,043	40,840	565,694	367,932	464,466,807	
2027	2,930,269	304,204,332	2,984,719	383,803,296	135,811	389,043	40,837	565,691	367,057	471,518,825	
2028	2,914,874	295,850,228	2,948,110	375,423,776	135,811	389,043	40,836	565,690	365,732	462,688,896	
2029	2,920,264	300,484,844	2,950,078	380,800,552	135,811	389,043	40,834	565,688	364,472	468,159,612	
2030	2,911,211	293,831,132	2,922,155	374,425,027	135,811	389,043	40,833	565,687	363,069	461,601,272	
2031	2,920,238	297,287,029	2,906,622	378,594,359	135,811	389,043	40,831	565,685	360,185	465,808,386	
2032	2,853,164	286,282,534	2,844,584	366,148,576	135,811	389,043	40,830	565,684	360,242	452,745,811	
2033	2,888,083	291,556,488	2,859,818	372,049,326	135,811	389,043	40,829	565,683	359,381	459,062,178	
2034	2,746,062	276,960,091	2,750,695	354,252,128	135,811	389,043	40,828	565,682	355,621	439,930,272	
2035	2,938,545	296,290,391	2,883,195	377,566,985	135,811	389,043	40,828	565,682	353,530	464,604,838	
TOTAL	174,165,981	17,890,326,629	157,562,833	22,120,607,456	6,362,682	17,790,608	2,613,115	26,766,405	40,484,369	27,254,896,951	

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	0	0	0	0	0	18.32	18.32
County of Butte	0	0	0	0	0	15.57	15.57
Plumas County Flood Control and Water Conservation District	17.99	2.13	0	0	20.12	15.20	35.32
Feather River Area	1.29	.15	0	0	1.44	16.15	17.59
NORTH BAY AREA							
Napa County Flood Control and Water Conservation District	110.19	21.76	5.70	15.44	153.09	9.82	162.91
Solano County Flood Control and Water Conservation District	74.87	4.17	2.88	4.83	86.75	20.27	107.02
North Bay Area	89.38	11.40	4.04	9.19	114.01	15.97	129.98
SOUTH BAY AREA							
Alameda County Flood Control and Water Conservation District, Zone 7	15.30	18.94	11.91	21.19	67.34	14.22	81.56
Alameda County Water District	14.95	15.47	10.61	18.38	59.41	12.95	72.36
Santa Clara Valley Water District	17.49	12.26	8.20	15.05	53.00	11.19	64.19
South Bay Area	16.65	13.96	9.27	16.69	56.57	12.02	68.59
SAN JOAQUIN VALLEY AREA							
County of Kings	4.20	2.68	4.43	7.78	19.09	12.85	31.94
Devil's Den Water District	8.51	9.07	5.37	10.02	32.97	11.20	44.17
Dudley Ridge Water District	4.94	3.11	3.68	6.88	18.61	11.44	30.05
Empire West Side Irrigation District	3.36	2.43	3.39	6.26	15.44	11.86	27.30
Kern County Water Agency	8.72	6.13	6.23	11.22	32.30	12.96	45.26
Oak Flat Water District	1.74	1.45	2.27	4.25	9.71	11.12	20.83
Tulare Lake Basin Water Storage District	5.05	3.20	3.61	6.99	18.85	11.75	30.60
San Joaquin Valley Area	8.09	5.67	5.79	10.50	30.05	12.72	42.77
CENTRAL COASTAL AREA							
San Luis Obispo County Flood Control and Water Conservation District	20.61	23.34	7.87	18.30	70.12	17.67	87.79
Santa Barbara County Flood Control and Water Conservation District	21.14	23.73	7.87	18.30	71.04	17.65	88.69
Central Coastal Area	20.95	23.59	7.87	18.30	70.71	17.66	88.37
SOUTHERN CALIFORNIA AREA							
Antelope Valley-East Kern Water Agency	62.75	41.06	25.71	69.80	199.32	31.55	230.87
Castaic Lake Water Agency	70.58	36.51	49.44	64.41	220.94	23.03	243.97
Coachella Valley Water District	40.26	26.91	52.56	85.62	205.35	14.05	219.40
Crestline-Lake Arrowhead Water Agency	76.14	47.49	45.20	95.12	263.95	22.02	285.97
Desert Water Agency	40.90	27.34	52.93	86.42	207.59	14.06	221.65
Littlerock Creek Irrigation District	42.78	26.84	49.10	81.00	199.72	21.16	220.88
Mojave Water Agency	57.95	39.54	50.45	107.58	255.52	22.49	278.01
Palmdale Water District	50.62	32.08	42.38	92.29	217.36	27.65	245.01
San Bernardino Valley Municipal Water District	97.25	59.64	40.99	71.80	269.68	26.51	296.19
San Gabriel Valley Municipal Water District	78.35	49.30	49.71	67.99	245.35	22.65	268.00
San Geronimo Pass Water Agency	89.26	55.96	52.31	76.98	274.51	20.57	295.08
The Metropolitan Water District of Southern California	62.89	34.58	45.14	56.87	199.48	19.07	218.55
Ventura County Flood Control District	81.16	43.44	39.26	81.63	245.49	22.18	267.67
Southern California Area	63.64	35.81	44.86	60.42	204.73	19.77	224.50
ALL AREAS	35.98	20.81	24.60	34.70	116.09	16.13	132.22

a) Hypothetical charges, which, if assessed on all entitlement water delivered to date, all surplus water delivered prior to May 1, 1973 and all entitlement water now estimated to be delivered during the remainder of the project repayment period (Table B5-B), would provide a sum at the end of the period financially equivalent to all Transportation Charge and Delta Water Charge payments required under a water supply contract, considering interest at the Project Interest Rate, 4.736 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	46.49	2.46	2.35	4.26	55.56	46.49	2.46	2.35	4.26	55.56
2	27.63	1.62	0	0	29.25	74.12	4.08	2.35	4.26	84.81
3	39.67	17.81	4.12	11.98	73.58	113.79	21.89	6.47	16.24	158.39
SOUTH BAY AQUEDUCT										
1	5.84	9.59	7.72	12.26	35.41	7.36	11.37	10.67	18.04	47.44
2	.56	.99	0	0	1.55	7.92	12.36	10.67	18.04	48.99
4	1.86	1.71	0	0	3.57	9.78	14.07	10.67	18.04	52.56
5	4.05	1.24	0	0	5.29	13.83	15.31	10.67	18.04	57.85
6	.23	.09	0	0	.32	14.06	15.40	10.67	18.04	58.17
7	1.85	.19	0	0	2.04	15.91	15.59	10.67	18.04	60.21
8	2.71	.25	0	0	2.96	18.62	15.84	10.67	18.04	63.17
9	5.26	1.21	0	0	6.47	23.88	17.05	10.67	18.04	69.64
CALIFORNIA AQUEDUCT										
1	1.52	1.78	2.95	5.78	12.03	1.52	1.78	2.95	5.78	12.03
2A	1.10	.35	0	0	1.45	2.62	2.13	2.95	5.78	13.48
2B	.54	.17	0	0	.71	3.16	2.30	2.95	5.78	14.19
3	.44	.12	0	0	.56	3.60	2.42	2.95	5.78	14.75
4	.90	.83	1.39	2.90	6.02	4.50	3.25	4.34	8.68	20.77
5	.85	.14	0	0	.99	5.35	3.39	4.34	8.68	21.76
6	.25	.06	0	0	.31	5.60	3.45	4.34	8.68	22.07
7	.69	.45	0	0	1.14	6.29	3.90	4.34	8.68	23.21
8C	.02	.04	0	0	.06	6.31	3.94	4.34	8.68	23.27
8D	.34	.18	0	0	.52	6.65	4.12	4.34	8.68	23.79
9	.26	.16	0	0	.42	6.91	4.28	4.34	8.68	24.21
10A	.30	.18	0	0	.48	7.21	4.46	4.34	8.68	24.69
11B	.44	.13	0	0	.57	7.65	4.59	4.34	8.68	25.26
12D	.42	.12	0	0	.54	8.07	4.71	4.34	8.68	25.80
12E	.28	.19	0	0	.47	8.35	4.90	4.34	8.68	26.27
13B	.61	.23	0	0	.84	8.96	5.13	4.34	8.68	27.11
14A	2.29	1.82	2.54	5.24	11.89	11.25	6.95	6.88	13.92	39.00
14B	.36	.19	0	0	.55	11.61	7.14	6.88	13.92	39.55
14C	.31	.14	0	0	.45	11.92	7.28	6.88	13.92	40.00
15A	1.71	1.96	3.09	6.44	13.20	13.63	9.24	9.97	20.36	53.20
16A	2.86	3.25	6.69	13.80	26.60	16.49	12.49	16.66	34.16	79.80
17E	9.93	8.44	23.26	47.57	89.20	26.42	20.93	39.92	81.73	169.00
17F	2.62	.07	0	0	2.69	29.04	21.00	39.92	81.73	171.69
18A	2.96	.63	0	-6.22	-2.63	32.00	21.63	39.92	75.51	169.06
19	2.04	1.21	0	0	3.25	34.04	22.84	39.92	75.51	172.31
19C	0	0	0	0	0	34.04	22.84	39.92	75.51	172.31
20A	1.60	.78	0	0	2.38	35.64	23.62	39.92	75.51	174.69
20B	2.18	.69	0	0	2.87	37.82	24.31	39.92	75.51	177.56
21	1.09	.46	0	0	1.55	38.91	24.77	39.92	75.51	179.11
22A	.74	.33	0	0	1.07	39.65	25.10	39.92	75.51	180.18
22B	8.79	7.91	8.21	14.48	39.39	48.44	33.01	48.13	89.99	219.57
23	1.16	.48	0	0	1.64	49.60	33.49	48.13	89.99	221.21
24	5.63	2.11	0	0	7.74	55.23	35.60	48.13	89.99	228.95
25	2.98	.09	0	0	3.07	58.21	35.69	48.13	89.99	232.02
25A	4.07	3.97	0	-27.03	-18.99	62.28	39.66	48.13	62.96	213.03
28G	7.35	1.14	0	0	8.49	69.63	40.80	48.13	62.96	221.52
28H	7.09	.91	0	0	8.00	76.72	41.71	48.13	62.96	229.52
28J	16.72	8.05	0	0	24.77	93.44	49.76	48.13	62.96	254.29
WEST BRANCH										
29A	2.56	3.79	2.71	6.92	15.98	31.60	24.79	42.63	88.65	187.67
29F	1.84	.53	0	0	2.37	33.44	25.32	42.63	88.65	190.04
29G	6.17	1.05	0	-10.45	-3.23	39.61	26.37	42.63	78.20	186.81
29H	3.68	2.16	0	0	5.84	43.29	28.53	42.63	78.20	192.65
29J	6.77	.43	0	-23.34	-16.14	50.06	28.96	42.63	54.86	176.51
30	10.74	1.88	0	0	12.62	60.80	30.84	42.63	54.86	189.13
COASTAL BRANCH										
31A	5.29	8.14	2.04	4.68	20.15	11.94	12.26	6.38	13.36	43.94
33A	2.08	.19	0	0	2.27	14.02	12.45	6.38	13.36	46.21
34	.13	.04	0	0	.17	14.15	12.49	6.38	13.36	46.38
35	.32	.08	0	0	.40	14.47	12.57	6.38	13.36	46.78

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 canal side. 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 4.736 percent per annum.

TABLE B-25: ANNUAL SURPLUS WATER DELIVERIES

Project Service Area and Water Supply Contractor	Calendar Year Deliveries (acre-feet)										Total
	1973 ^(a)	1974	1975	1976	1978 ^(b)	1979	1980 ^(c)	1981 ^(c)	1982 ^(c)	1983	
SOUTH BAY AREA											
Alameda County Flood Control and Water Conservation District, Zone 7	0	0	0	3,636	0	0	0	0	0	0	3,636
Alameda County Water District	0	0	0	4,147	0	0	0	0	0	0	4,147
Santa Clara Valley Water District	<u>2,499</u>	<u>2,934</u>	<u>18,470</u>	<u>24,705</u>	<u>0</u>	<u>15,998</u>	<u>14,278</u>	<u>18,920</u>	<u>1,303</u>	<u>0</u>	<u>99,107</u>
Total	2,499	2,934	18,470	32,488	0	15,998	14,278	18,920	1,303	0	106,890
SAN JOAQUIN VALLEY AREA											
Devil's Den Water District	4,104	4,128	7,495	5,727	0	0	6,092	10,647	6,359	0	44,552
Dudley Ridge Water District	13,192	33,391	40,555	30,922	7,586	38,545	39,079	32,327	14,463	13,019	263,076
Empire West Side Irrigation District	2,814	1,539	3,448	3,457	0	0	0	2,992	926	0	15,176
Hacienda Water District ^(d)	5,600	1,972	3,759	3,720	0	1,000	0	0	0	0	16,051
Kern County Water Agency	163,744	299,433	410,820	442,150	8,623	524,247	327,233	624,581	124,736	0	2,925,597
Oak Flat Water District	1,013	3,471	3,576	3,840	6	698	718	2,788	721	0	16,831
Tulare Lake Basin Water Storage District	<u>63,988</u>	<u>68,989</u>	<u>132,206</u>	<u>57,806</u>	<u>0</u>	<u>66,342</u>	<u>14,817</u>	<u>215,926</u>	<u>67,365</u>	<u>0</u>	<u>687,439</u>
Total	254,485	412,923	601,859	547,622	16,215	630,832	387,939	889,261	214,570	13,019	3,968,725
SOUTHERN CALIFORNIA AREA											
Littlerock Creek Irrigation District	<u>80</u>	<u>67</u>	<u>356</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>247</u>	<u>0</u>	<u>0</u>	<u>750</u>
Total	80	67	356	0	0	0	0	247	0	0	750
TOTAL ALL AREAS	257,064	415,924	620,685	580,110	16,215	646,830	402,217	908,428	215,873	13,019	4,076,365

- a) May through December only.
- b) No surplus water was delivered in 1977.
- c) Includes unscheduled water, previously called extra surplus water.
- d) District merged with Tulare Lake Basin Water Storage District effective January 1, 1981.

TABLE B-26: POWER COSTS FOR PUMPING SURPLUS WATER

(in dollars)

Area/Pumping Plant	Calendar Year											
	May 1973 Through 1977		1978		1979		1980		1981		1982-1983 ^a	
	Capacity	Energy	Capacity	Energy	Capacity	Energy	Capacity	Energy	Capacity	Energy	Capacity	Energy
SOUTH BAY AQUEDUCT												
<u>Reach 1</u>												
South Bay and Del Valle Pumping Plants	101,248	145,182	0	0	27,116	39,517	30,319	35,268	36,749	44,229	-	-
CALIFORNIA AQUEDUCT												
<u>Reach 1</u>												
Harvey O. Banks Delta Pumping Plant	359,211	1,821,229	144,188	15,039	390,494	599,886	532,717	373,023	621,270	806,580	-	-
<u>Reach 4</u>												
Dos Amigos Pumping Plant	308,955	773,678	51,403	6,591	235,698	256,188	228,646	162,404	301,292	366,942	-	-
<u>Reach 14A</u>												
Buena Vista Pumping Plant	280,094	351,929	0	0	35,743	51,045	28,682	73,422	69,202	85,341	-	-
<u>Reach 15A</u>												
Wheeler Ridge Pumping Plant	130,745	40,567	0	0	6,771	8,205	3,559	11,451	22,262	27,486	-	-
<u>Reach 16A</u>												
Wind Gap Pumping Plant	0	13,342	0	0	3,165	4,194	5,146	9,753	24,138	29,847	-	-
<u>Reach 17E</u>												
A. D. Edmonston Pumping Plant	0	3,367	0	0	0	0	0	0	1,054	1,629	-	-
<u>Reach 31A</u>												
Las Perillas and Badger Hill Pumping Plants	109,779	152,253	0	0	8,769	11,808	3,228	22,755	26,168	34,020	-	-
TOTAL	1,290,032	3,301,547	195,591	21,630	707,756	970,843	832,297	688,076	1,102,135	1,396,074	-	-
COMBINED TOTAL	4,591,579		217,221		1,678,599		1,520,373		2,498,209		-	

a) Amounts not available at time of publication.

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

(in dollars)

Area/Agency	Calendar Year				
	1978	1979	1980	1981	1982-1983 ^a
SOUTH BAY AREA					
Alameda County Water District					
Capacity	0	0	0	0	-
Energy	0	0	0	0	-
Replacement	0	0	0	0	-
Administrative	0	0	0	725	-
Total	0	0	0	725	-
Santa Clara Valley Water District					
Capacity	3,275	37,413	41,641	50,706	-
Energy	0	54,354	48,510	61,028	-
Replacement	0	413	2,670	3,538	-
Administrative	0	4,005	5,638	11,192	-
Total	3,275	96,185	98,459	126,464	-
SAN JOAQUIN VALLEY AREA					
Devil's Den Water District					
Capacity	0	0	8,485	14,608	-
Energy	0	0	13,101	22,575	-
Replacement	0	0	3,332	4,099	-
Administrative	0	0	3,815	6,160	-
Total	0	0	28,733	47,442	-
Dudley Ridge Water District					
Capacity	14,642	37,615	40,160	40,674	-
Energy	10,119	51,418	52,131	42,078	-
Replacement	248	886	21,376	12,446	-
Administrative	3,793	20,051	21,859	19,221	-
Total	28,802	109,970	135,526	114,419	-
Empire West Side Irrigation District					
Capacity	0	0	0	2,520	-
Energy	0	0	0	3,897	-
Replacement	0	0	0	1,152	-
Administrative	0	0	0	1,869	-
Total	0	0	0	9,438	-
Kern County Water Agency					
Capacity	154,051	547,875	636,135	784,875	-
Energy	11,505	774,587	553,902	980,142	-
Replacement	281	7,633	202,663	275,232	-
Administrative	4,312	116,977	281,776	348,397	-
Total	170,149	1,447,072	1,674,476	2,388,646	-
Oak Flat Water District					
Capacity	4	417	432	1,601	-
Energy	6	651	666	2,475	-
Replacement	0	5	134	521	-
Administrative	3	176	666	1,950	-
Total	13	1,249	1,898	6,547	-
Tulare Lake Basin Water Storage District (Includes Hacienda Water District)					
Capacity	23,619	72,315	102,900	189,238	-
Energy	0	89,833	19,766	281,071	-
Replacement	0	2,042	8,105	83,132	-
Administrative	0	46,075	22,258	146,357	-
Total	23,619	210,265	153,029	699,798	-
SOUTHERN CALIFORNIA AREA					
Little Rock Creek Irrigation District					
Capacity	0	0	0	1,819	-
Energy	0	0	0	2,808	-
Replacement	0	0	0	431	-
Administrative	0	0	0	123	-
Total	0	0	0	5,181	-
TOTAL, ALL CONTRACTORS					
Capacity	195,591	695,635	829,753	1,086,041	-
Energy	21,630	970,843	688,076	1,396,074	-
Replacement	529	10,979	238,280	380,551	-
Administrative	8,108	187,284	336,012	535,994	-
Total	225,858	1,864,741	2,092,121	3,398,660	-

a) Final allocation of 1982 and 1983 surplus water charges will appear in Bulletin 132-85.

Please turn page for "Index to Tabular Material."

INDEX TO TABULAR

SUBJECT	CORRESPONDING TABLE, FIGURE, EXHIBIT OR PAGE NUMBER IN PREVIOUS BULLETIN 132											
	TABLE NO.	TITLE	1983	1982	1981	1980	1979	1978	1977	1976	1975	1974
OPERATIONS FOR PRIOR YEAR	1	SWP Accomplishments through 1983	17	20	Ex.25	p.132	p.125	p.88	p.73	p.39	p.36	p.40
	2	Water Quality at Selected Stations in 1983	16	19	5	5	5	5	5	5	5	4
	3	Historical Summary of Entitlements, Deliveries, and Water Conveyed	11	14	2	1	1	1	1	1	1	1
	4	Summary of 1983 Deliveries and Credits to Long-Term Contractors	12	15	3	2	2	2	2	2	2	none
	5	Monthly Water Deliveries in 1983	13	16	4	3	3	3	3	3	3	2
	6	Monthly Power Operations in 1983	18	21	6	6	6	6	6	5	6	5
	7	SWP Power and Transmission Service Purchases in 1983	none	none	none	none	none	none	none	none	none	none
	8	SWP Power Sales in 1983	none	none	none	none	none	none	none	none	none	none
	9	Recreation Use at SWP Facilities in 1983	19	22	Ex.26	p.138	p.133	p.95	p.81	p.66	none	none
	10	Fish Planted at SWP Facilities in 1983	20	23	Ex.27	none						
CONTRACT AMENDMENTS	11	Water Supply Contract Amendments as of June 30, 1984	Fig.16	Fig.19	Fig.6	Fig.6	Fig.6	Fig.6	Fig.6	Fig.7	Fig.7	Fig.9
DESIGN AND CONSTRUCTION ACTIVITIES	12	SWP Design Activities in Progress, July 1983-June 1984	8	10	Ex.10	none						
	13	SWP Construction Activities in Progress, July 1983-June 1984	10	12	Ex.14	none						
FUTURE OPERATIONS	14	Water Contractors' Requests for Entitlement Water, 1983 through 1989	14	17	Ex.17	p.89	p.94	p.66	p.57	p.28	p.26	p.30
	15	Projected Water Deliveries and Energy Requirements	none	none	none	none	none	none	none	none	none	none
	16	Projected Electrical Capacity Requirements	none	none	none	none	none	none	none	none	none	none
	17	Summary of Major SWP Power Contracts	Fig.17	Fig.20	Ex.19	p.102	none	none	none	none	none	none
18	Projected Energy Resources and Costs	7	9	Ex.29	p.104	none	none	none	none	none	none	
FUTURE COSTS AND FINANCING	19	SWP Financial Analysis, June 30, 1984	21	24	7	7	7	7	none	7	7	6
	20	SWP Capital Expenditures	22	25	8	8	8	8	7	8	8	7
	21	Application of Revenue Bond Proceeds	23	26	none							
	22	Projected Bond Sales	26	29	9A	9A	9A	none	none	none	none	none
	23	Revenue Bond Proceeds Affecting the Project Interest Rate	24	27	none							
	24	Actual Bond Sales and Project Interest Rates	25	28	9	9	9	9	none	9	9	8
	25	SWP Operation, Maintenance, Power and Replacement Costs	27	30	10	10	10	10	8	10	10	9
	26	Annual Service on Bonds Sold through June 30, 1984	28	31	11	11	11	11	none	11	11	10
27	Estimated Future Unit Water Charges	6	7	Ex.2	p.19	Fig.1	none	none	none	none	none	
28	Estimated Costs of Proposed Future Facilities	none	none	none	none	none	none	none	none	none	none	
CONTRACTOR PROFILES	29	Present and Projected Population, Urban Water Demands, and Urban Water Supplies for Napa Valley	none	none	none	none	none	none	none	none	none	none
	30	Present and Projected Population, Urban Water Demands, and Urban Water Supplies for Solano County Flood Control and Water Conservation District	none	none	none	none	none	none	none	none	none	none
	31	Current Major Sources of Supply in MWDC Member Agencies' Service Areas	none	none	none	none	none	none	none	none	none	none
	32	Present and Projected Water Supplies Available to Tulare Lake Basin Water Storage District	none	none	none	none	none	none	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	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-5B	B-5
	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	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:	TRANS-PORTATION 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-20B	Delta Water Rates by Facility	B-20B	none	B-20B	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-24	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.

CONVERSION FACTORS

Quantity	To Convert from Metric Unit	To Customary Unit	Multiply Metric Unit By	To Convert to Metric Unit Multiply Customary Unit By
Length	millimetres (mm)	inches (in)	0.03937	25.4
	centimetres (cm) for snow depth	inches (in)	0.3937	2.54
	metres (m)	feet (ft)	3.2808	0.3048
	kilometres (km)	miles (mi)	0.62139	1.6093
Area	square millimetres (mm ²)	square inches (in ²)	0.00155	645.16
	square metres (m ²)	square feet (ft ²)	10.764	0.092903
	hectares (ha)	acres (ac)	2.4710	0.40469
	square kilometres (km ²)	square miles (mi ²)	0.3861	2.590
Volume	litres (L)	gallons (gal)	0.26417	3.7854
	megalitres	million gallons (10 ⁶ gal)	0.26417	3.7854
	cubic metres (m ³)	cubic feet (ft ³)	35.315	0.028317
	cubic metres (m ³)	cubic yards (yd ³)	1.308	0.76455
	cubic dekametres (dam ³)	acre-feet (ac-ft)	0.8107	1.2335
Flow	cubic metres per second (m ³ /s)	cubic feet per second (ft ³ /s)	35.315	0.028317
	litres per minute (L/min)	gallons per minute (gal/min)	0.26417	3.7854
	litres per day (L/day)	gallons per day (gal/day)	0.26417	3.7854
	megalitres per day (ML/day)	million gallons per day (mgd)	0.26417	3.7854
	cubic dekametres per day (dam ³ /day)	acre-feet per day (ac-ft/day)	0.8107	1.2335
Mass	kilograms (kg)	pounds (lb)	2.2046	0.45359
	megagrams (Mg)	tons (short, 2,000 lb)	1.1023	0.90718
Velocity	metres per second (m/s)	feet per second (ft/s)	3.2808	0.3048
Power	kilowatts (kW)	horsepower (hp)	1.3405	0.746
Pressure	kilopascals (kPa)	pounds per square inch (psi)	0.14505	6.8948
	kilopascals (kPa)	feet head of water	0.33456	2.989
Specific Capacity	litres per minute per metre drawdown	gallons per minute per foot drawdown	0.08052	12.419
Concentration	milligrams per litre (mg/L)	parts per million (ppm)	1.0	1.0
Electrical Conductivity	microsiemens per centimetre (uS/cm)	micromhos per centimetre	1.0	1.0
Temperature	degrees Celsius (°C)	degrees Fahrenheit (°F)	(1.8 × °C) + 32	(°F - 32) / 1.8

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