



Bulletin 132-88  
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State of California  
The Resources Agency

Department of  
Water Resources

# Management of the California State Water Project



**Gordon K. Van Vleck**

Secretary for Resources  
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# WATER SUPPLY CONTRACTING AGENCIES

Location No.	Contracting Agency	Total Cumulative Deliveries through 12/31/87 (acre-feet)(a)	Maximum Annual Entitlement (acre-feet)	Total Payments through 12/31/87 (dollars)	Gross Area as of 7/1/87 (acres)	Assessed Valuation 1987-88 (dollars)(b)	Estimated Population (7/1/87)
<b>UPPER FEATHER AREA</b>							
1.	City of Yuba City	586	9,600	137,000	4,230	645,733,000	22,300
2.	County of Butte	5,329	27,500	393,000	1,069,000	5,660,591,000	167,000
3.	Plumas County Flood Control and Water Conservation District	6,175	2,700	848,000	1,644,000(c)	1,370,448,000(c)	19,300(c)
	Subtotal	12,090	39,800	1,378,000	2,717,230	7,676,772,000	208,600
<b>NORTH BAY AREA</b>							
4.	Napa County Flood Control and Water Conservation District	94,514	25,000	8,329,000	508,000	4,970,841,000	105,200
5.	Solano County Flood Control and Water Conservation District	2,950	42,000	8,510,000	575,000	8,886,989,000	290,100
	Subtotal	97,464	67,000	16,839,000	1,083,000	13,587,830,000	395,300
<b>SOUTH BAY AREA</b>							
6.	Alameda County Flood Control and Water Conservation District, Zone 7	302,751	46,000	22,537,000	272,000	6,333,122,000	125,000
7.	Alameda County Water District	391,192	42,000	25,180,000	63,000	11,663,337,000	245,300
8.	Santa Clara Valley Water District	1,933,971	100,000	95,633,000	833,000	66,598,000,000	1,400,000
	Subtotal	2,627,914	188,000	143,350,000	1,168,000	84,594,459,000	1,770,300
<b>SAN JOAQUIN VALLEY AREA</b>							
9.	County of Kings	41,900	4,000	1,089,000	893,300(d)	2,327,554,000(d)	87,900(d)
10.	Devil's Den Water District	306,612	12,700	8,888,000	8,700	8,888,000(e)	50
11.	Dudley Ridge Water District	1,080,798	57,700	20,586,000	29,970	7,400(e)	50
12.	Empire West Side Irrigation District	68,497	3,000	1,325,000	7,400	7,400(e)	50
13.	Kern County Water Agency	14,505,234	1,153,400	424,937,000	5,161,000(f)	28,216,042,000(f)	504,800(f)
14.	Oak Flat Water District	114,759	5,700	3,029,000	4,000	4,000(e)	50
15.	Tulare Lake Basin Water Storage District	2,241,319(g)	118,500	37,780,000	189,200	37,780,000(e)	50
	Subtotal	18,359,119	1,355,000	497,634,000	6,293,570	30,543,596,000	592,950
<b>CENTRAL COASTAL AREA</b>							
16.	San Luis Obispo County Flood Control and Water Conservation District	0	25,000	5,888,000	2,131,300	11,769,634,000	201,900
17.	Santa Barbara County Flood Control and Water Conservation District	0	45,486	11,044,000	1,756,900	16,221,670,000	342,900
	Subtotal	0	70,486	16,932,000	3,888,200	27,991,304,000	544,800
<b>SOUTHERN CALIFORNIA AREA</b>							
18.	Antelope Valley-East Kern Water Agency	546,364	138,400	93,259,000	1,524,000	6,223,855,000	127,100
19.	Castaic Lake Water Agency	79,943	41,500	34,807,000	125,000	4,932,914,000	112,900
20.	Coachella Valley Water District	168,207	23,100	30,114,000	637,600	9,548,790,000	122,600
21.	Crestline-Lake Arrowhead Water Agency	17,663	5,800	6,202,000	55,100	1,023,100,000	13,600
22.	Desert Water Agency	264,800	38,100	48,207,000	208,800	4,527,062,000	55,600
23.	Little Rock Creek Irrigation District	6,087	2,300	1,592,000	43,300	76,696,000	1,900
24.	Mojave Water Agency	57,606	50,800	36,758,000	3,160,400	7,170,213,000	147,500
25.	Palmdale Water District	10,033	17,300	10,725,000	73,900	1,337,455,000	47,400
26.	San Bernardino Valley Municipal Water District	173,892	102,600	112,459,000	210,200	9,442,510,000	434,600
27.	San Gabriel Valley Municipal Water District	79,995	28,800	31,798,000	16,300	5,269,203,000	185,000
28.	San Geronimo Pass Water Agency	0	17,300	16,214,000	140,600	1,054,380,000	41,500
29.	The Metropolitan Water District of Southern California	7,886,902	2,011,500	2,002,273,000	3,286,400(g)	564,692,806,000(g)	13,731,500(g)
30.	Ventures County Flood Control District	0	20,000	12,193,000	1,179,500(h)	28,308,436,000(h)	628,100(h)
	Subtotal	9,291,492	2,497,500	2,436,601,000	10,661,100	643,607,420,000	15,649,300
	TOTAL STATE WATER PROJECT	30,388,079	4,217,786	3,112,734,000	25,811,100(i)	808,001,378,000(i)	19,161,250(i)
	NET TOTAL, STATE WATER PROJECT SERVICE AREA				24,492,500(j)	787,536,119,000(j)	18,731,900(j)
	TOTAL, STATE OF CALIFORNIA				100,314,000	1,165,057,000,000	27,662,900
	PERCENT, NET SWP VS. TOTAL CALIFORNIA				24.4	67.6	67.7

- a) All water delivered to long-term SWP contractors, including current and deferred entitlement, surplus, unscheduled, emergency relief, exchange, and non-SWP water delivered through SWP facilities to Napa County FC&WCD.
- b) Statutes of 1978, Chapter 1207, added Section 135 to the Revenue and Taxation Code, requiring assessment at 100 percent of full value for the 1981-82 fiscal year and fiscal years thereafter.
- c) Total for all of Plumas County Flood Control and Water Conservation District, including Last Chance Creek Water District.
- d) Total for all of Kings County, including the following contracting agencies: County of Kings, Dudley Ridge Water District, Empire West Side Irrigation District, nearly all of Tulare Lake Basin Water Storage District, and about 40 percent of Devil's Den Water District.
- e) Assessed valuation not available on an agency area breakdown.
- f) Total for all of Kern County, including the following contracting agencies: Kern County Water Agency, about 60 percent of Devil's Den Water District, and about 50 percent of Antelope Valley-East Kern Water Agency.
- g) Total for MWDSC including Calleguas Municipal Water District, which is common to MWDSC and Ventura County Flood Control District.
- h) Total for all of Ventura County, including the following contracting agencies: Ventura County Flood Control District and portions of Antelope Valley-East Kern Water Agency, Castaic Lake Water Agency, and MWDSC.
- 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.

The SWP water supply contracts' Article 19 objective for the percentage of sodium to total salt content was exceeded at times at all points south of the Delta except Castaic Lake. The chloride objective was exceeded on several occasions in nearly all waters between the Delta and Pearblossom Pumping Plant. The average monthly totals of dissolved solids, hardness, sulfates, and boron remained substantially below contract objectives at all locations.

Overall during 1987, the best SWP water quality was found upstream of the Delta and in the four Southern California lakes, even though the percentage of sodium to total salt content sometimes exceeded the objective in three of these reservoirs.

DWR continued monthly monitoring of asbestos in SWP waters south of the Delta. Results indicate that during 1987, in water upstream and downstream from Arroyo Pasajero, asbestos remained essentially at background levels in water pumped from the Delta.

## Water Service

The following sections summarize 1987 water conveyance and deliveries via SWP facilities.

### Total Water Conveyed

A total of 2,630,257 acre-feet of water was conveyed through SWP facilities in 1987. Table 3 summarizes total water conveyance and disposition for the 26 years of SWP operation. The following paragraphs discuss Table 3 in detail.

**Entitlement Water.** The SWP water supply contracts, executed in the early 1960s, establish the specific annual entitlement water amounts each long term water contractor may request. The initial Table A schedules reflected estimates of each contractor's future water needs prevailing at the time the contracts were signed; some schedules have subsequently been revised. Table B-4 in Appendix B presents complete information on



*Castaic Lagoon, a facility of the SWP, is a popular recreation area for Southern California residents.*

annual entitlements for each contractor, as set forth in Table A of each SWP water supply contract.

Columns (1) through (7) of Table 3 summarize annual contractual entitlements for the various SWP service areas for the 1962–87 period; actual entitlement deliveries by year are shown in column (8).

Annually in September each contractor furnishes an updated estimate of future requirements for SWP water. In the fall of 1986, 25 contractors requested a total of 2,717,215 acre–feet of entitlement water and 43,705 acre–feet of deferred entitlement (wet–weather) water for 1987 delivery. In December 1986, DWR approved 2,255,000 acre–feet of 1987 entitlement water deliveries, based upon the 1987 risk analysis criteria and then–prevailing water supply forecast. No wet–weather water was approved. The initial approved schedule reflected a 462,215 acre–foot reduction for all agricultural entitlement requests. Early in 1987, The Metropolitan Water District of Southern California decreased its 1987 entitlement request by 379,500 acre–feet, which decreased the agricultural entitlement reduction to 82,715 acre feet. In March, following several storms and improved water supply forecasts, all agricultural entitlement delivery requests were approved under risk analysis criteria.

Actual entitlement water delivered in 1987 to the 25 contractors requesting deliveries totaled 2,130,086 acre–feet. This amount includes 425 acre–feet of 1988 advance entitlement water to Oak Flat Water District, 214 acre–feet of 1988 advance entitlement water to Antelope Valley East Kern Water Agency, and 16,171 acre–feet of water recaptured from ground water storage (10,000 acre–feet by the Metropolitan Water District of Southern California and 6,171 acre–feet by San Bernardino Valley Municipal Water District).

San Geronio Pass Water Agency requested 1,427 acre–feet of entitlement water but took no deliveries; Mojave Water Agency did not initially request any entitlement water but took 17 acre–feet at a temporary turnout for construction use. Eleven contractors took less entitlement water than initially requested, and six contractors took all of their initially requested Table A entitlements.

The following contractors increased their requested deliveries within 1987 entitlement amounts during the year:

<u>Contractor</u>	<u>Requested Increase</u> (acre–feet)
ACFC&WCD, Zone 7	224
AVEKWA	742
CLWA	422
CLAWA	298
LCID	481
MWA	17
PWD	2,379
SGVMWD	130

ACFC and WCD: Alameda County Flood Control and Water Conservation District  
 AVEKWA: Antelope Valley–East Kern Water Agency  
 CLWA: Castaic Lake Water Agency  
 CLAWA: Crestline–Lake Arrowhead Water Agency  
 LCID: Littlerock Creek Irrigation District  
 MWA: Mojave Water Agency  
 PWD: Palmdale Water District  
 SGVMWD: San Gabriel Valley Municipal Water District

In addition to the contractors listed above, Oak Flat Water District required water deliveries in excess of its 1987 annual entitlement, and Antelope Valley–East Kern Water Agency requested water deliveries to a temporary turnout for construction outside its service area. To assure that the increased deliveries would not affect SWP’s capability to deliver 1988 entitlements to other SWP contractors, these two contractors were required to take the deliveries as advance deliveries of their 1988 entitlement water.

**Surplus Water.** In September 1986, seven contractors submitted estimates indicating they could use 291,543 acre feet of surplus water during 1987. Due to the limited water supply, DWR could not approve any surplus water deliveries under 1987 risk analysis criteria.

**Unscheduled Water.** In 1987 a total of 114,907 acre–feet of unscheduled water was delivered to Santa Clara Valley Water District, Devil’s Den Water District, Empire West Side Irrigation District, Kern County Water Agency, Oak Flat Water District, and Tulare Lake Basin Water Storage District.

**Other Water.** Column (10) of Table 3 summarizes deliveries of several other types of water, as defined in the accompanying footnote. These are shown in more detail (for 1987) in Table 5 and described in this chapter under the heading “Total 1987 Water Deliveries.”

**Initial Fill Water.** The quantities shown in column (12) of Table 3 are the amounts used for initially filling aqueducts and reservoir storage space south of the

**TABLE 3. HISTORICAL SUMMARY OF ENTITLEMENTS,**

Calendar Year	Annual Entitlements Under Long-Term Water Supply Contracts (acre-feet)(a)							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)	
1962	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0
1967	0	0	11,538	0	0	0	11,538	11,538
1968	550	0	109,900	81,050	0	0	191,500	171,709
1969	620	0	98,700	168,075	0	0	267,395	193,020
1970	700	0	114,200	207,700	0	0	322,600	233,993
1971	890	0	116,200	258,500	0	0	375,590	357,340
1972	970	0	118,300	420,766	0	201,723	741,759	611,801
1973	1,100	0	120,400	392,352	0	472,400	986,252	694,388
1974	1,230	0	122,400	470,350	0	588,220	1,182,200	874,077
1975	1,610	0	124,500	556,509	0	704,250	1,386,869	1,223,990
1976	1,990	0	126,500	555,117	0	824,780	1,508,387	1,373,002
1977	2,420	0	128,600	594,100	0	942,201	1,667,321	574,155
1978	1,850	0	130,700	647,262	0	1,038,222	1,818,034	1,452,699
1979	2,130	0	132,700	715,385	0	1,177,873	2,028,088	1,659,896
1980	1,810	500	134,800	770,800	1,946	1,304,914	2,214,770	1,529,749
1981	1,940	650	137,000	830,700	2,813	1,419,365	2,392,468	1,909,562
1982	1,970	800	139,200	889,200	5,626	1,537,749	2,574,545	1,750,024
1983	2,000	950	141,400	880,648	8,439	1,668,557	2,701,994	1,184,869
1984	3,630	1,100	143,600	991,911	12,698	1,731,398	2,884,337	1,588,619
1985	3,760	1,250	145,800	1,031,749	21,138	1,852,149	3,055,846	1,995,453
1986	4,190	1,400	148,100	1,139,200	28,210	1,971,190	3,292,290	1,995,636 (e)
1987	4,620	1,550	150,300	1,201,200	35,204	2,091,241	3,484,115	2,130,086 (g)
Totals 1962-1987	39,980	8,200	2,594,838	12,802,574	116,074	19,526,232	35,087,898	23,515,606

a) From Table B-4.

b) Values include deliveries of SWP water to short-term contractors (Mustang Water District, 1970-1971; Tracy Golf and Country Club, 1974, 1979, and 1980; Green Valley Water District, 1974, 1975, 1978, 1979, 1980, and 1985; Granite Construction Company, 1980).

c) Includes preconsolidation repayment water, 1977 emergency relief water, regulated delivery of local supply, non-SWP water delivered to Napa County FC&WCD through SWP facilities, 1987 Advance Storage Program Water, CVP water conveyed (including D1485 and recreation and wildlife water), 1987 and 1982 exchange water.

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

# DELIVERIES, AND WATER CONVEYED

Water Conveyed (acre-feet)							Calendar Year
Deliveries			Initial Fill Water	Operational Losses and Storage Changes (d)	Recreation Water	Total	
Surplus and Unscheduled Water (b)	Other Water (c)	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	279,161	3,097,151	0	126,180	4,688	3,228,019	1981
215,873	154,886	2,120,783	0	136,555	4,646	2,261,984	1982
13,019	181,453	1,379,341	0	- 90,320	7,849	1,296,870	1983
262,917	380,591	2,232,127	0	- 1,690	7,040	2,237,477	1984
307,672	404,842	2,707,967	0	- 88,136	4,062	2,623,893	1985
36,620 (f)	193,606	2,225,862	0	117,458	3,865	2,347,185	1986
114,907	377,592	2,622,585		-449,063	7,672	2,181,194	1987
5,893,338	3,405,588	32,814,532	1,833,697	-229,120	61,413	34,480,522	Totals 1962-1987

- e) Includes 37,170 acre-feet of entitlement water that was carried over from 1985.
- f) Includes 12,270 acre-feet of surplus water that was carried over from 1985.
- g) Includes 639 acre-feet of 1988 entitlement water that was delivered during 1987, and 16,171 acre-feet of entitlement water recaptured from ground water storage.

Delta to maximum operational capacities. Initial filling began in 1962 with the first filling of the South Bay Aqueduct and was completed in 1979, when Lake Perris reached its maximum operational capacity.

**Operational Losses and Storage Changes.** Column (13) of Table 3 shows the annual quantities of water conveyed to replenish losses through evaporation and seepage from SWP aqueducts and reservoirs south of the Delta, combined with corrections for changes in reservoir storage and for inflow from local drainage areas (including inflows from the Kern River Intertie and the First Los Angeles Aqueduct). Years with negative values are those in which storage withdrawals and storable local inflow exceed storage additions plus replenishment of evaporation and seepage losses.

**Recreation Water.** Column (14) of Table 3 summarizes historic deliveries of recreation water. Recreation water is used both at SWP recreation facilities and for fish and wildlife mitigation and enhancement. In 1987, a total of 7,672 acre-feet was conveyed under this category, as follows:

- 1,841 acre-feet for public recreation facilities at Lake Del Valle, San Luis Reservoir, O'Neill Forebay, Silverwood, Pyramid, and Castaic lakes, and Lake Perris;
- 2,936 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;
- 2,305 acre-feet to replace water losses at Castaic Lagoon, an impoundment below Castaic Lake devoted entirely to recreation;
- 590 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 1987 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.

**1982 Exchange Water.** During 1987, Kern County Water Agency took delivery of 6,171 acre-feet of its 1982 exchange water stored in the Metropolitan Water District of Southern California's ground water basin. To complete the exchange, KCWA received 6,171 acre-feet of MWDSC's 1987 entitlement delivered from the Delta, and MWDSC recaptured a like amount of KCWA's 1982 exchange water stored in MWDSC's ground water basin as entitlement water. For a more detailed description of the 1982 exchange water program, see page 45 of Bulletin 132-87.

The March 1987 agreement for delivering KCWA's 1982 exchange water from Lake Oroville provided that KCWA not take delivery of its exchange water when those deliveries would decrease deliveries of entitlement water to other SWP contractors. In 1987, however, because of the dry hydrologic conditions, KCWA requested water above the approved entitlement deliveries. In December 1987, DWR executed an agreement with KCWA allowing the agency to receive during 1987 up to 24,106 acre-feet of its 1982 exchange water from Lake Oroville.

To ensure that entitlement water deliveries to other SWP contractors would not be affected, KCWA agreed to accept reduction of its 1988 entitlement water deliveries by the amount of 1982 exchange water delivered from Lake Oroville storage during 1987. This reduction was to be independent of and in addition to any delivery reduction resulting from application of Article 18(a) of the water supply contract. DWR agreed, however, that KCWA could increase its 1988 entitlement water deliveries by the amount they had been reduced under the December agreement, provided that these deliveries would not reduce the combined storage in Lake Oroville and the State's share of San Luis Reservoir to less than 3.0 million acre-feet at the end of the water year on September 30, 1988. Because of redistribution of water within the member units of KCWA, the agency ultimately did not take any 1982 exchange water from Lake Oroville.

### **Future Entitlement Delivery Credits (Makeup Water).**

When the SWP is unable to deliver the requested entitlement water in any year, long term contractors are afforded relief under Articles 12(d) and 14(b) of the water supply contract. Contractors may elect to receive the undelivered entitlement water at other times during the year, or in succeeding years, to the extent that the water and delivery capability are available. No



**TABLE 4. SUMMARY OF 1987 DELIVERIES AND CREDITS  
TO LONG-TERM CONTRACTORS**

(acre-feet)

Long-Term Water Supply Contractor	Water Deliveries in 1987						Future Entitlement Credits as of January 1, 1988				Future Entitlement Reduction Credit Per Articles 7 or 45 (11)
	Entitlement Water Deliveries			Unscheduled Water Deliveries (4)	Other Water Deliveries (5)	Total Deliveries (3+4+5) (6)	Make-Up Water Per Articles 12(d) or 14(b) (7)(a)	Wet-Weather Water Per Articles 7 or 45 (8)	1987 Carry-over Entitlement (9)	Total Delivery Credit (7+8+9) (10)	
	1987 Entitlement (1)	1988 Entitlement Delivered During 1987 (2)	Total Entitlement (1+2) (3)								
<b>UPPER FEATHER RIVER AREA</b>											
City of Yuba City	88		88			88				-	
County of Butte	459		459			459				-	
Plumas County FC&WCD	452		452			452				-	
<b>NORTH BAY AREA</b>											
Solano County FC&WCD	1,550		1,550			1,550				-	
Napa County FC&WCD	7,693 (b)		7,693			7,693				-	
<b>SOUTH BAY AREA</b>											
Alameda County FC&WCD, Zn 7	23,406		23,406			23,406	2,438	111,580 (g)		-	
Alameda County WD	25,390		25,390			25,390	2,220	172,088 (g)	114,018	-	
Santa Clara Valley WD	88,000		88,000	6,949		94,949			174,308	-	
<b>SAN JOAQUIN VALLEY AREA</b>											
County of Kings	4,000		4,000			4,000				-	
Devil's Den WD	11,821		11,821	2,573		14,394			879	-	
Dudley Ridge WD	46,288		46,288			46,288			5,112	-	
Empire West Side ID	2,525		2,525	1,876		4,401			475	-	
Kern County WA	969,905		969,905	52,048	6,171 (f)	1,028,124			53,595	-	
Oak Flat WD	5,200	425	5,625	255		5,880				2,466	
Tulare Lake Basin WSD	93,084		93,084	51,206		144,290		80,662	8,316	88,978	
<b>SOUTHERN CALIFORNIA AREA</b>											
Antelope Valley-East Kern WA	33,875	214	34,089			34,089	14,841 (h)		14,841	-	
Castaic Lake WA	16,167		16,167			16,167	500		500	-	
Coachella Valley WD	19,431		19,431			19,431				-	
Crestline-Lake Arrowhead WA	1,849		1,849			1,849	151		151	-	
Desert WA	31,500		31,500			31,500				-	
Littlerock Creek ID	1,085		1,085			1,085	438		438	-	
Mojave WA	17		17			17	20		20	-	
Palmdale WD	5,379		5,379			5,379				-	
San Bernardino Valley MWD	18,751 (c)		18,751			18,751	4,269		4,269	-	
San Gabriel Valley WD	10,630		10,630			10,630	1,000		1,000	-	
The Metropolitan Water District of Southern California	718,595 (d)		718,595			718,595	102,239		102,239	-	
<b>TOTAL ENTITLEMENT WATER</b>	<b>2,129,447</b>	<b>639</b>	<b>2,130,086</b>	<b>114,907</b>	<b>6,171</b>	<b>2,251,164</b>	<b>128,116</b>	<b>364,330</b>	<b>68,377</b>	<b>560,823</b>	<b>2,466</b>
<b>TOTAL ENTITLEMENT WATER AND NON- PROJECT WATER THROUGH SWP FACILITIES</b>	<b>2,137,140</b>	<b>639</b>	<b>2,137,779 (e)</b>	<b>114,907</b>	<b>6,171</b>	<b>2,258,857</b>	<b>128,116</b>	<b>364,330</b>	<b>68,377</b>	<b>560,823</b>	<b>2,466</b>

a) Credits for all contractors are under Article 12(d) of their water supply contract unless otherwise stated.  
b) Non-Project water delivered to Napa County FC&WCD through SWP facilities.  
c) Includes 10,000 acre-feet of entitlement recaptured from ground water storage.  
d) Includes 6,171 acre-feet of entitlement water through the 1982 exchange water program.

e) Equals deliveries shown in Table B-5B.  
f) 1982 exchange water (MWDSC ground water basin).  
g) Recalculation of Article 7 wet-weather credits since publication of Bulletin 132-87.  
h) Antelope Valley-East Kern Water Agency future entitlement delivery credits total 4,787 acre-feet under water supply contract Article 14(b) and 10,054 acre-feet under Article 12(d).

makeup water was delivered in 1987. As shown in Table 4, column (7), 128,116 acre-feet of credits for future deliveries remained available as of January 1, 1988: 123,329 acre-feet under Article 12(d) and 4,787 acre-feet under Article 14(b).

***Future Entitlement Delivery Credits (Wet-Weather Water).*** Under water supply contract Article 7 (South Bay contractors) or Article 45 (San Joaquin Valley contractors), SWP contractors can acquire credits for future deliveries when above-normal local water supplies reduce the need for SWP water. At the time of delivery, the sum of current annual entitlement, plus “wet-weather” water cannot, however, exceed a contractor’s maximum annual entitlement.

During 1987, no additional credits were acquired under Article 7 or 45. The wet-weather credits acquired in previous years under Articles 7 and 45 have been recalculated since publication of Bulletin 132-87, resulting in additional credits to two South Bay contractors. As of January 1, 1988, three contractors had credits totaling 364,330 acre-feet acquired under the wet-weather provisions of their contracts:

***Future Entitlement Reduction Credits (Wet-Weather Water).*** The “wet weather” contract provisions also allow a contractor to increase entitlement water deliveries in years of below average local water supply and to decrease entitlement deliveries by an equal amount in later years. Oak Flat Water District made such an increase in 1972 and has retained its reduction credit of 2,466 acre-feet through 1987, as shown in column (11) of Table 4.

***Future Entitlement Delivery Credits 1987 Carry-Over Water.*** During spring 1987, the lack of sufficient rainfall prompted fears of a possible drought. Precipitation continued to be below normal during fall 1987, and DWR imposed deficiencies on the 1988 agricultural entitlement requests. Full requests were restored in February 1988. (See Chapter V.)

With the Water Service Contractors Council Memorandum No. 1869, dated September 4, 1987, DWR informed the contractors of its willingness to consider requests to carry over pre-irrigation water for application during January and February 1988. The memorandum also informed contractors that the requests for carry-over water must not be detrimental to other SWP contractors. The amount of 1987 water remaining to

be delivered at any time would be considered by DWR in evaluating deliveries under the 1988 risk analysis to ensure that delivery of carry-over water would not affect allocations of 1988 entitlement water. Any 1987 entitlement water not delivered by February 29, 1988 would be foregone by the individual contractor and become part of the total SWP supply. The carry-over contractor would have to agree to pay for any identified cost increase in either 1987 or 1988 that, if not paid by the carryover contractor, would otherwise result in increased charges to other contractors.

Agreements executed with Devil’s Den Water District, Dudley Ridge Water District, Empire West Side Irrigation District, Kern County Water Agency, and Tulare Lake Basin Water Storage District in December 1987 allowed a maximum carry-over of 68,377 acre-feet of 1987 agricultural entitlement water for use during January and February 1988. The total amount of carry-over taken by the end of February was 67,581 acre-feet. Dudley Ridge Water District was the only contractor that did not use all of its carry-over water, foregoing 796 acre-feet.

### **Total 1987 Water Deliveries**

During 1987, the SWP provided water service to 43 agencies. These included 26 long-term water contractors and 17 other agencies. Monthly deliveries to each of the 43 agencies, shown in Table 5, are summarized as follows:

- 2,129,447 acre-feet of 1987 entitlement water to 25 long-term contractors. Only six contractors took their full contract entitlement. Napa County Flood Control and Water Conservation District received only non-SWP water delivered through SWP facilities;
- 639 acre-feet of 1988 entitlement water was delivered during the last five months of 1987 as advance delivery of the 1988 entitlement allocation, with the understanding that the 1988 approved entitlement allocation will be reduced by the amount taken in 1987.
- 10,000 acre-feet of 1987 entitlement water was recaptured from ground water basins under San Bernardino Valley Municipal Water District’s 1978 ground water demonstration program;
- 6,171 acre-feet of 1982 exchange water to Kern County Water Agency;

- 114,907 acre–feet of unscheduled water to six long–term contractors;
- 14,858 acre–feet of regulated local supply to two long–term contractors and two other agencies;
- 7,693 acre–feet of non–SWP water to Napa County Flood Control and Water Conservation District;
- 7,501 acre–feet of advance storage water delivered to the Kern Water Bank storage area under the 1987 Advance Storage Program;
- 7,672 and 645 acre–feet of SWP and CVP water, respectively, conveyed for recreation and fish and wildlife enhancement;
- 30,872 acre–feet of CVP water transported to six annual USBR contractors in the San Joaquin Valley;
- 116,262 acre–feet of CVP water transported to eight USBR contractors via Kern County Water Agency’s Cross Valley Canal, including 12,000 acre–feet reassigned to the Friant Water Users Authority; and
- 193,590 acre–feet of CVP water conveyed to O’Neill Forebay to replace curtailed CVP pumping during May and June in accordance with SWRCB Decision 1485.

Table 5 shows 1987 monthly deliveries of each type of water along with summaries of Table A entitlements and cumulative entitlements not delivered. The types of water service not described in preceding sections are covered in the following paragraphs.

**Regulated Delivery of Local Supply.** SWP facilities are also used to transport non–SWP water for long–term SWP contractors and for other agencies under various agreements for local water rights. Some of this water simply passes through SWP transportation facilities and some is stored in SWP reservoirs for later release. In 1987, a total of 14,858 acre–feet in this category was delivered to two long–term contractors and two other agencies.

**Non–SWP Water to Napa County Flood Control and Water Conservation District.** Before completion of Phase II of the North Bay Aqueduct, NCFC&WCD received interim water from the USBR’s Solano Project at Reach

3B of the North Bay Aqueduct. From there the water was pumped through interim pumping facilities near Cordelia and transported through SWP facilities to the terminus. During 1987, NCFC&WCD received 7,693 acre–feet of Solano Project water.

**Preconsolidation Repayment Water.** No preconsolidation repayment water was delivered in 1987 because of limited SWP water supply.

**Demonstration Ground Water Program.** In 1978, San Bernardino Valley Municipal Water District and DWR established a demonstration program for storing SWP water in ground water basins within the district. The basic agreement, dated May 12, 1978, was augmented by the June 2, 1978 operating agreement and amended by the September 14, 1982 letter agreement. In 1987, DWR requested the district to recapture 10,000 acre–feet of the stored water, reducing the remaining storage to 8,749 acre–feet as of January 1, 1988.

**Advance Storage Ground Water.** The 1987 Advance Storage Program Agreement was executed by Kern County Water Agency and DWR on January 12, 1987. During January and February 1987, DWR delivered 7,501 acre–feet to the City of Bakersfield’s 2,800–acre Ground Water Recharge Facility. The water stored is SWP water that will be extracted or exchanged as part of the Kern Water Bank or other ground water programs involving this agency.

**Conveyance and Transportation of CVP Water.** During 1987, DWR had several arrangements for conveying CVP water through SWP facilities. In each arrangement the USBR provided the electrical energy required for moving the water through the Banks Delta Pumping Plant and, if needed, the Dos Amigos and Las Perillas Pumping Plants.

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

- Hills Valley Irrigation District and Tri–Valley Water District executed amendments to their three party Cross Valley Canal contracts in 1987. These amendments provide for the use of SWP facilities

**TABLE 5. MONTHLY WATER**

Line No.	Contracting Agency and Type of Service	Month						
		JAN	FEB	MAR	APR	MAY	JUN	JUL
<b>FEATHER RIVER AREA</b>								
1.	City of Yuba City Entitlement Water	0	0	0	0	0	0	46
2.	County of Butte: Entitlement Water	36	20	95	100	48	0	0
3.	Last Chance Creek Water District: Regulated Delivery of Local Supply	0	0	0	322	2,218	2,715	1,861
4.	Plumas County Flood Control and Water Conservation District: Entitlement Water	3	1	0	26	67	78	67
5.	Thermalito Irrigation District: Regulated Delivery of Local Supply	98	89	95	210	276	311	304
6.	<b>AREA TOTAL</b>	<b>137</b>	<b>110</b>	<b>190</b>	<b>658</b>	<b>2,609</b>	<b>3,104</b>	<b>2,278</b>
<b>NORTH BAY AREA</b>								
7.	Napa County Flood Control and Water Conservation District: Non-SWP Water via SWP Facilities	322	130	163	448	681	848	923
8.	Solano County Flood Control and Water Conservation District: Entitlement Water	100	100	100	155	160	160	160
9.	<b>AREA TOTAL</b>	<b>422</b>	<b>230</b>	<b>263</b>	<b>603</b>	<b>841</b>	<b>1,008</b>	<b>1,083</b>
<b>SOUTH BAY AREA</b>								
10.	Alameda County Flood Control and Water Conservation District, Zone 7: Entitlement Water	1,062	4	480	2,181	2,737	3,256	3,459
11.	Regulated Delivery of Local Supply	309	1,272	1,083	327	0	0	0
12.	Agency Total	1,371	1,276	1,563	2,508	2,737	3,256	3,459
13.	Alameda County Water District: Entitlement Water	2,248	1,409	1,504	1,115	2,243	3,630	3,396
14.	Regulated Delivery of Local Supply	0	85	0	0	0	0	0
15.	Agency Total	2,248	1,494	1,504	1,115	2,243	3,630	3,396
16.	Santa Clara Valley Water District Entitlement Water	4,400	4,200	5,928	6,487	9,449	9,779	9,914
17.	Unscheduled Water	3,467	2,259	1,223	0	0	0	0
18.	Agency Total	7,867	6,459	7,151	6,487	9,449	9,779	9,914
19.	Recreation/Fish and Wildlife Water	3	4	4	9	21	19	16
20.	<b>AREA TOTAL</b>	<b>11,489</b>	<b>9,233</b>	<b>10,222</b>	<b>10,119</b>	<b>14,450</b>	<b>16,684</b>	<b>16,785</b>
<b>SAN JOAQUIN VALLEY AREA</b>								
<b>SWP Water</b>								
21.	County of Kings: Entitlement Water	400	400	400	400	0	400	400
22.	Devil's Den Water District: Entitlement Water	170	286	603	931	1,085	2,002	3,161
23.	Unscheduled Water	1,378	1,195	0	0	0	0	0
24.	Agency Total	1,548	1,481	603	931	1,085	2,002	3,161
25.	Dudley Ridge Water District: Entitlement Water	976	1,250	2,739	2,452	7,738	9,710	10,139
26.	Empire West Side Irrigation District: Entitlement Water	40	68	167	572	0	885	656
27.	Unscheduled Water	104	1,547	225	0	0	0	0
28.	Agency Total	144	1,615	392	572	0	885	656

a) Includes all entitlement not delivered and deferred, whether or not the water contractor has received any remuneration.



# DELIVERIES IN 1987

Month						1987 Contract Entitlement	1987 Entitlement Not Delivered	Net Cumulative Entitlement Not Delivered Through (a)		Line No.
AUG	SEP	OCT	NOV	DEC	TOTAL			1986	1987	
42	0	0	0	0	88	2,500	2,412	4,902	7,314	1.
0	0	0	77	83	459	1,200	741	13,630	14,371	2.
1,626	505	105	92	0	9,444					3.
96	80	14	8	12	452	920	468	5,737	6,205	4.
330	284	206	94	41	2,338					5.
2,094	869	325	271	136	12,781	4,620	3,621	24,269	27,890	6.
922	893	823	754	786	7,693					7.
160	155	100	100	100	1,550	1,550	0	2,350	2,350	8.
1,082	1,048	923	854	886	9,243	1,550	0	2,350	2,350	9.
3,119	2,566	2,443	1,131	968	23,406	29,000	5,594	150,852	156,446	10.
0	0	0	0	0	2,991					11.
3,119	2,566	2,443	1,131	968	26,397					12.
3,016	1,736	1,077	2,046	1,970	25,390	33,300	7,910	252,864	260,774	13.
0	0	0	0	0	85					14.
3,016	1,736	1,077	2,046	1,970	25,475					15.
9,927	9,563	9,513	5,419	3,421	88,000	88,000	0	40,782	40,782	16.
0	0	0	0	0	6,949					17.
9,927	9,563	9,513	5,419	3,421	94,949					18.
22	20	14	3	2	137					19.
16,084	13,885	13,047	8,599	6,361	146,958	150,300	13,504	444,498	458,002	20.
400	400	400	0	400	4,000	4,000	0	0	0	21.
3,166	213	204	0	0	11,821	12,700	879	128	1,007	22.
0	0	0	0	0	2,573					23.
3,166	213	204	0	0	14,394					24.
6,767	2,294	1,891	109	223	46,288	51,400	5,112	0	5,112	25.
11	0	40	25	61	2,525	3,000	475	12,023	12,498	26.
0	0	0	0	0	1,876					27.
11	0	40	25	61	4,401					28.

**TABLE 5. MONTHLY WATER**

Line No.	Contracting Agency and Type of Service	Month						
		JAN	FEB	MAR	APR	MAY	JUN	JUL
<b>Kern County Water Agency:</b>								
29.	Entitlement Water	10,723	21,966	51,077	72,283	118,991	190,427	215,944
30.	1982 Exchange Water (MWDSC Ground Water Basin)	0	0	0	0	0	0	0
31.	Unscheduled Water	0	26,560	25,488	0	0	0	0
32.	Agency Total	10,723	48,526	76,565	72,283	118,991	190,427	215,944
<b>Oak Flat Water District:</b>								
33.	Entitlement Water	70	172	166	814	824	1,194	1,321
34.	1988 Entitlement Water	0	0	0	0	0	0	0
35.	Unscheduled Water	86	119	0	50	0	0	0
36.	Agency Total	156	291	166	864	824	1,194	1,321
<b>Tulare Lake Basin Water Storage District:</b>								
37.	Entitlement Water	1,356	2,290	2,230	9,052	13,874	9,311	4,594
38.	Unscheduled Water	34,956	16,250	0	0	0	0	0
39.	Agency Total	36,312	18,540	2,230	9,052	13,874	9,311	4,594
40.	1987 Advance Storage Program	3,788	3,713	0	0	0	0	0
41.	Recreation/Fish and Wildlife Water	16	41	111	61	16	42	64
42.	AREA SUBTOTAL (SWP Water)	54,063	75,857	83,206	86,615	142,528	213,971	236,279
<b>SAN JOAQUIN VALLEY AREA</b>								
<b>Conveying CVP Water</b>								
<b>Annual Contract:</b>								
43.	Green Valley Water District	0	0	0	0	37	125	184
44.	Kings County Water District	0	0	0	0	0	0	0
45.	Lakeside Irrigation Water District	0	0	2,120	7,880	0	0	0
46.	Musco Olive Products, Inc.	0	0	1	4	3	3	3
47.	Tracy Golf and Country Club	4	4	12	58	66	75	84
48.	SUBTOTAL	4	4	2,133	7,942	106	203	271
<b>Cross Valley Canal Contracts:</b>								
49.	Fresno County	0	0	281	215	482	441	0
50.	Lower Tule River	0	0	2,919	2,226	5,001	4,576	4,652
51.	Pixley Irrigation District	0	0	0	5,145	5,001	4,576	4,652
52.	Rag Gulch Water District	0	0	0	0	0	0	1,768
53.	Tulare County	0	0	0	0	853	781	0
54.	Kern-Tulare Water District	0	4,542	7,967	6,745	1,792	3,299	0
<b>Kern-Tulare Water District:</b>								
55.	Transferred to Friant Water Users Authority	0	0	0	0	0	0	4,717
56.	Hills Valley Irrigation District	0	0	0	0	538	492	0
57.	Tri-Valley Water District	0	0	0	0	184	168	0
58.	SUBTOTAL	0	4,542	11,167	14,331	13,851	14,333	15,789
59.	Decision 1485	0	0	0	0	0	0	46,965
60.	U. S. Fish and Wildlife Service	0	0	0	0	0	0	0
61.	Recreation/Fish and Wildlife Water	14	32	92	50	14	32	57
62.	AREA SUBTOTAL (CVP Water)	18	4,578	13,392	22,323	13,971	14,568	63,082
63.	AREA TOTAL	54,081	80,435	96,598	108,938	156,499	228,539	299,361
<b>CENTRAL COASTAL AREA</b>								
<b>San Luis Obispo County Flood Control and Water Conservation District:</b>								
64.	Entitlement Water	0	0	0	0	0	0	0
<b>Santa Barbara County Flood Control and Water Conservation District:</b>								
65.	Entitlement Water	0	0	0	0	0	0	0
66.	AREA TOTAL	0	0	0	0	0	0	0
<b>SOUTHERN CALIFORNIA AREA</b>								
<b>Antelope Valley-East Kern Water Agency:</b>								
67.	Entitlement Water	970	1,139	2,037	3,478	3,502	4,310	4,902
68.	1988 Entitlement Water	0	0	0	0	0	0	0
69.	Agency Total	970	1,139	2,037	3,478	3,502	4,310	4,902
<b>Castaic Lake Water Agency:</b>								
70.	Entitlement Water	1,115	1,018	1,100	1,187	1,262	1,574	1,712
<b>Coachella Valley Water District:</b>								
71.	Entitlement Water	1,619	1,619	1,619	1,619	1,619	1,619	1,619

# DELIVERIES IN 1987 (con't.)

Month						1987 Contract Entitlement	1987 Entitlement Not Delivered	Net Cumulative Entitlement Not Delivered Through (a)		Line No.
AUG	SEP	OCT	NOV	DEC	TOTAL			1986	1987	
173,669	53,501	36,042	5,053	20,229	969,905	1,023,500	53,595	327,256	380,851	29.
0	5,067	1,104	0	0	6,171					30.
0	0	0	0	0	52,048					31.
173,669	58,568	37,146	5,053	20,229	1,028,124					32.
639	0	0	0	0	5,200	5,200	0	640	215	33.
38	284	68	1	34	425					34.
0	0	0	0	0	255					35.
677	284	68	1	34	5,880					36.
6,115	3,494	11,689	8,605	20,474	93,084	101,400	8,316	80,662	88,978	37.
0	0	0	0	0	51,206					38.
6,115	3,494	11,689	8,605	20,474	144,290					39.
0	0	0	0	0	7,501					40.
54	66	73	41	13	598					41.
190,859	65,319	51,511	13,834	41,434	1,255,476	1,201,200	68,377	420,709	488,661	42.
95	0	0	0	0	441					43.
0	0	0	0	4,459	4,459					44.
0	0	0	0	0	10,000					45.
0	3	1	0	1	19					46.
83	59	36	7	3	491					47.
178	62	37	7	4,463	15,410					48.
1,018	396	139	14	14	3,000					49.
5,891	4,106	1,440	145	146	31,102					50.
5,891	4,106	1,440	145	146	31,102					51.
811	1,478	1,109	509	540	6,215					52.
2,678	0	0	24	76	4,412					53.
0	0	0	0	0	24,345					54.
7,283	0	0	0	0	12,000					55.
1,689	0	0	16	209	2,944					56.
575	152	53	0	10	1,142					57.
25,836	10,238	4,181	853	1,141	116,262					58.
58,977	60,900	26,748	0	0	193,590					59.
0	197	2,863	2,769	9,633	15,462					60.
46	58	60	32	158	645					61.
85,037	71,455	33,889	3,661	15,395	341,369					62.
275,896	136,774	85,400	17,495	56,829	1,596,845	1,201,200	68,377	420,709	488,661	63.
0	0	0	0	0	0	12,500	12,500	29,000	41,500	64.
0	0	0	0	0	0	22,704	22,704	51,870	74,574	65.
0	0	0	0	0	0	35,204	35,204	80,870	116,074	66.
5,432	4,188	2,551	715	651	33,875	44,000	10,125	263,977	273,888	67.
0	173	41	0	0	214					68.
5,432	4,361	2,592	715	651	34,089					69.
1,811	1,711	1,549	1,088	1,040	16,167	32,900	16,733	175,360	192,093	70.
1,619	1,619	1,619	1,619	1,622	19,431	19,431	0	5,200	5,200	71.

## TABLE 5. MONTHLY WATER

Line No.	Contracting Agency and Type of Service	Month						
		JAN	FEB	MAR	APR	MAY	JUN	JUL
72.	Crestline-Lake Arrowhead Water Agency: Entitlement Water	136	117	114	109	151	172	211
73.	Desert Water Agency: Entitlement Water	2,625	2,625	2,625	2,625	2,625	2,625	2,625
74.	Littlerock Creek Irrigation District: Entitlement Water	0	0	0	0	0	175	246
75.	Mojave Water Agency: Entitlement Water	0	0	0	0	0	3	14
76.	Palmdale Water District: Entitlement Water	164	174	225	243	709	1,006	797
77.	San Bernardino Valley Municipal Water District: Entitlement Water	300	441	111	4	434	813	988
78.	1978 Ground Water Demonstration	0	0	1,000	1,000	1,000	1,000	1,000
79.	Agency Total	300	441	1,111	1,004	1,434	1,813	1,988
80.	San Gabriel Valley Municipal Water District: Entitlement Water	0	0	0	0	1,708	1,930	1,896
81.	San Geronio Pass Water Agency: Entitlement Water	0	0	0	0	0	0	0
82.	The Metropolitan Water District of Southern California: Entitlement Water	42,231	60,945	48,129	84,016	102,758	78,660	64,960
83.	1982 Exchange Water	0	0	0	0	0	0	0
84.	Agency Total	42,231	60,945	48,129	84,016	102,758	78,660	64,960
85.	Ventura County Flood Control District: Entitlement Water	0	0	0	0	0	0	0
86.	Recreation/Fish and Wildlife Water	40	51	66	773	560	1,063	1,069
87.	AREA TOTAL	49,200	68,129	57,026	95,054	116,328	94,950	82,039
ALL AGENCIES								
88.	Entitlement Water	70,744	100,244	121,449	189,849	271,984	323,719	333,227
89.	Other Entitlement Water:							
90.	1978 Ground Water Demonstration	0	0	1,000	1,000	1,000	1,000	1,000
91.	1982 Exchange Water	0	0	0	0	0	0	0
92.	Total 1987 Entitlement Water	70,744	100,244	122,449	190,849	272,984	324,719	334,227
93.	1988 Entitlement Water Delivered in 1987	0	0	0	0	0	0	0
94.	SUBTOTAL (Entitlement Water Delivered)	70,744	100,244	122,449	190,849	272,984	324,719	334,227
95.	1987 Advance Storage Program	3,788	3,713	0	0	0	0	0
96.	Unscheduled Water	39,991	47,930	26,936	50	0	0	0
97.	1982 Exchange Water (MWDSC Ground Water Basin)	0	0	0	0	0	0	0
98.	Recreation/Fish and Wildlife Water	59	96	181	843	597	1,124	1,149
99.	SUBTOTAL (SWP WATER)	114,582	151,983	149,566	191,742	273,581	325,843	335,376
100.	Regulated Delivery of Local Supply	407	1,446	1,178	859	2,494	3,026	2,165
101.	Non-SWP Water to Napa County FC&WCD	322	130	163	448	681	848	923
102.	Conveying CVP Water--Annual Contract	4	4	2,133	7,942	106	203	271
103.	Conveying CVP Water--U.S. Fish and Wildlife	0	0	0	0	0	0	0
104.	Conveying CVP Water--Cross Valley Canal	0	4,542	11,167	14,331	13,851	14,333	15,789
105.	Conveying CVP Water--Decision 1485	0	0	0	0	0	0	46,965
106.	Conveying CVP Water--Recreation/Fish and Wildlife Water	14	32	92	50	14	32	57
107.	SUBTOTAL (OTHER WATER)	747	6,154	14,733	23,630	17,146	18,442	66,170
108.	TOTAL WATER	115,329	158,137	164,299	215,372	290,727	344,285	401,546



# DELIVERIES IN 1987 (con't.)

Month						1987 Contract Entitlement	1987 Entitlement Not Delivered	Net Cumulative Entitlement Not Delivered Through (a)		Line No.
AUG	SEP	OCT	NOV	DEC	TOTAL			1986	1987	
244	200	162	119	114	1,849	4,930	3,081	23,282	26,363	72.
2,625	2,625	2,625	2,589	2,661	31,500	31,500	0	8,000	8,000	73.
218	204	204	38	0	1,085	1,960	875	11,106	11,981	74.
0	0	0	0	0	17	43,700	43,683	312,394	356,077	75.
1,175	127	670	79	10	5,379	15,420	10,041	135,146	145,187	76.
1,356	1,676	1,472	586	570	8,751	89,000	70,249	740,536	810,785	77.
1,000	1,000	1,000	1,000	1,000	10,000					78.
2,356	2,676	2,472	1,586	1,570	18,751					79.
1,283	1,228	2,002	583	0	10,630	24,600	13,970	169,157	183,127	80.
0	0	0	0	0	0	14,000	14,000	68,700	82,700	81.
78,236	69,242	55,416	15,761	12,070	712,424	1,759,800	1,041,205	6,788,487	7,829,692	82.
0	5,067	1,104	0	0	6,171					83.
78,236	74,309	56,520	15,761	12,070	718,595					84.
0	0	0	0	0	0	10,000	10,000	29,000	39,000	85.
1,331	1,333	589	21	41	6,937					86.
96,330	90,393	71,004	24,198	19,779	864,430	2,091,241	1,233,962	8,730,345	9,964,093	87.
301,126	156,822	131,683	45,750	66,679	2,113,276	3,484,115	1,354,668	9,703,041	11,057,070	88.
1,000	1,000	1,000	1,000	1,000	10,000					89.
0	5,067	1,104	0	0	6,171					90.
302,126	162,889	133,787	46,750	67,679	2,129,447					91.
38	457	109	1	34	639					92.
302,164	163,346	133,896	46,751	67,713	2,130,086					93.
0	0	0	0	0	7,501					94.
0	0	0	0	0	114,907					95.
0	5,067	1,104	0	0	6,171					96.
1,407	1,419	676	65	56	7,672					97.
303,571	169,832	135,676	46,816	67,769	2,266,337					98.
1,956	789	311	186	41	14,858					99.
922	893	823	754	786	7,693					100.
178	62	37	7	4,463	15,410					101.
0	197	2,863	2,769	9,633	15,462					102.
25,836	10,238	4,181	853	1,141	116,262					103.
58,977	60,900	26,748	0	0	193,590					104.
46	58	60	32	158	645					105.
87,915	73,137	35,023	4,601	16,222	363,920					106.
391,486	242,969	170,699	51,417	83,991	2,630,257	3,484,115	1,354,668	9,703,041	11,057,070	107.
										108.

from the Delta to the canal, and the use of USBR storage in San Luis Reservoir during May, June, and July. The original contracts required the use of SWP facilities from the Delta to O'Neill Forebay and from Reach 8C to the canal. The original contract provided wheeling through the USBR share of the joint use facilities but did not provide for the use of any storage from San Luis Reservoir during May, June, and July. During 1987, 4,086 acre-feet of water was wheeled to these two contractors, of which 1,382 acre-feet was accounted for as deliveries from the USBR's share of San Luis Reservoir.

- Under separate agreements, 42,591 acre-feet of water was delivered during May, June, and July from DWR's share of storage in San Luis Reservoir to the remaining participants in the three-party contracts. The contractors were charged for use-of-facilities for San Luis Reservoir and the cost of electrical energy to replace an equal amount of water, furnished by USBR, into DWR's share of storage.
- Under another agreement executed July 9, 1987, 12,000 acre-feet of CVP water originally assigned to one of the Cross Valley Canal contractors was reassigned to the Friant Water Users Authority. This water was delivered in Reach 8D to Tulare Lake Basin Water Storage District, which conveyed it to the Friant Water Users Authority. This amount included 4,717 acre-feet of water delivered during July from DWR's share of San Luis Reservoir storage and was part of the 42,591 acre-feet of water mentioned in the previous paragraph.
- Water conveyed during 1987 under allocations to the participants of the three-party contracts were 12,000 acre-feet to Reach 8D (Friant Water Users Authority) and 104,262 acre-feet to the Cross Valley Canal in Reach 12E, for a total of 116,262 acre-feet.
- Under the annual conveyance agreement with USBR, DWR agrees to provide wheeling of up to 49,840 acre-feet of CVP water to nine USBR contractors. The term of the agreement is from March 1 to the end of February of the following year. This conforms to USBR contractors' irrigation season, covering the current irrigation and the next pre-irrigation periods. During the 1987 calendar

year, 15,410 acre-feet was conveyed, of which eight acre-feet was delivered during January and February 1987 under the 1986 agreement. An additional 15,636 acre-feet of CVP water was delivered during January and February 1988, for a total delivery of 31,038 acre-feet under the 1987 agreement.

- Two separate agreements were executed among the U.S. Fish and Wildlife Service, the USBR, and DWR. Under these two agreements a total of 15,462 acre-feet of CVP water was wheeled by DWR.
- The first agreement, executed September 18, 1987, provided for DWR to convey up to 6,200 acre-feet of CVP water to Reach 10A to the Buena Vista Water Storage District turnout. Buena Vista in turn wheeled the water to the Kern National Wildlife Refuge. A total of 6,127 acre-feet was conveyed under this agreement.
- The second agreement, executed October 22, 1987, provided for DWR to convey up to 80,000 acre-feet of CVP water from the Delta to O'Neill Forebay to compensate for reduced flows from Keswick Dam. Flows were reduced from Lake Shasta in an attempt to lower water temperatures in the Sacramento River. This action was taken to minimize the potential damage to salmon during the fall run and avoid dewatering salmon spawning beds in November. DWR conveyed 9,335 acre-feet of water under this agreement.
- Under the Coordinated Operation Agreement, executed November 24, 1986, DWR conveyed 193,590 acre-feet of CVP water from the Delta to O'Neill Forebay to replace USBR capacity foregone during May and June 1987 in compliance with Decision 1485.
- In accordance with the 1970 agreement among DWR, USBR, and the Department of Parks and Recreation and the 1974 agreement among DWR, USBR, and the Department of Fish and Game, the recreation and fish and wildlife water delivered from the San Luis joint-use facilities is delivered as 45 percent CVP water and 55 percent SWP water. The deliveries shown on lines 59 and 104 are the CVP portion (45 percent) of the total recreation and fish and wildlife deliveries along the joint-use facilities.