



STATE OF CALIFORNIA

The Resources Agency

Department of Water Resources

BULLETIN No. 132-73

The California
State Water Project
In 1973

APPENDIX D

COSTS
OF RECREATION AND
FISH AND WILDLIFE ENHANCEMENT

APRIL 1973

NORMAN B. LIVERMORE, JR.
Secretary for Resources
The Resources Agency

RONALD REAGAN
Governor
State of California

WILLIAM R. GIANELLI
Director
Department of Water Resources

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STATE OF CALIFORNIA
Department of Water Resources
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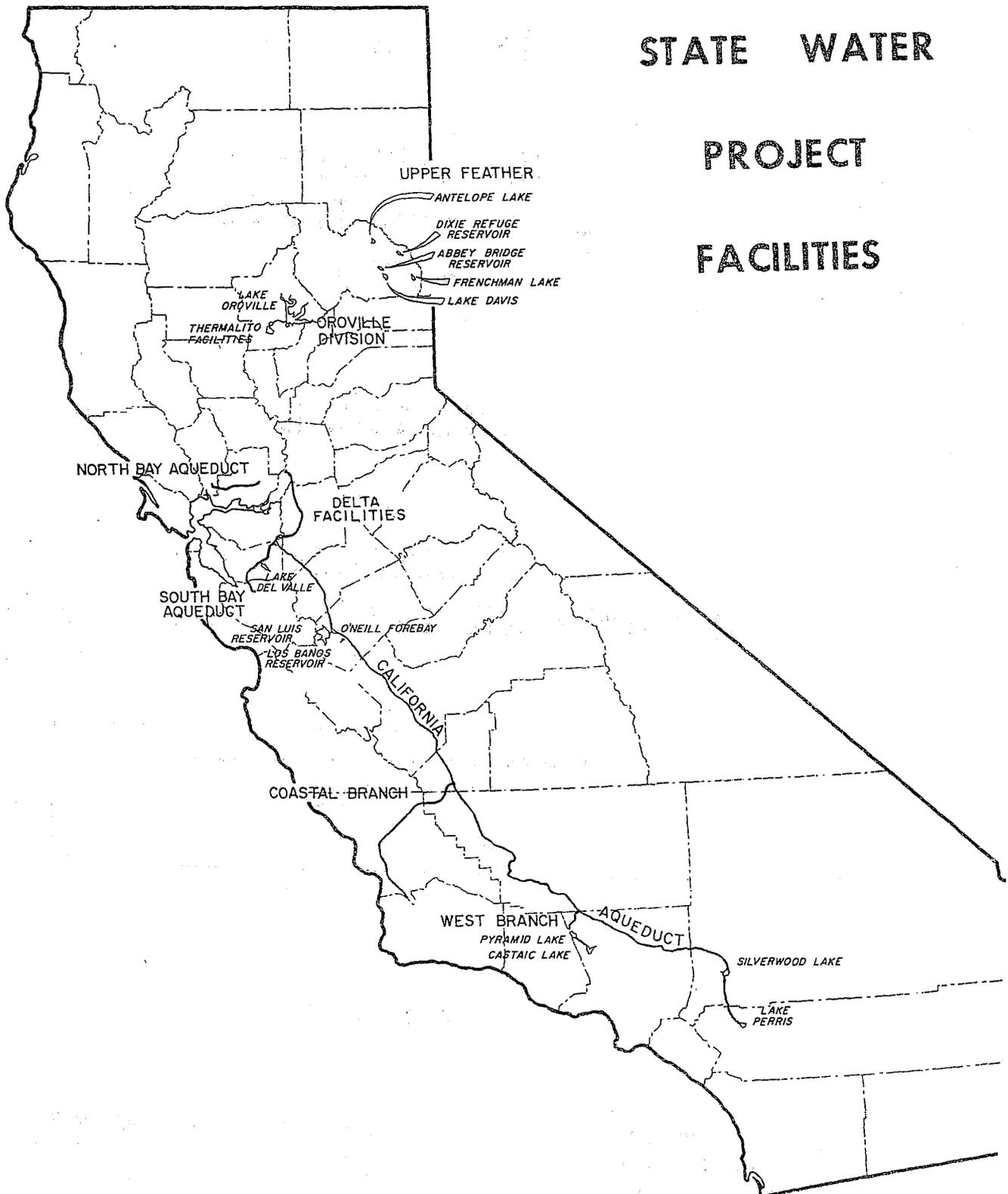
RONALD REAGAN
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Department of Water Resources

STATE WATER

PROJECT

FACILITIES



FOREWORD

The Davis-Dolwig Act (Sections 11900-11925 of the California Water Code) declares that recreation and fish and wildlife enhancement costs of state water projects benefit all of the people of California and are to be borne by them. The Act also provides a procedure through which the Department of Water Resources will be reimbursed for those recreation and fish and wildlife enhancement expenditures that are financed by project funds. The Department is to annually report such expenditures to the Legislature. If the Legislature approves the reported costs, a like amount of the State's tideland gas and oil revenues will be released to the Department from a continuing \$5,000,000 annual appropriation of tideland revenues which has been authorized specifically for that purpose (California Statutes of 1964, First Extraordinary Session, Chapter 138, as amended by California Statutes of 1966, First Extraordinary Session, Chapter 27).

This constitutes the Department's report to the 1973 Legislature in compliance with the above requirement. An additional \$16,725,981 for recreation and fish and wildlife enhancement is reported herein; most of which is due to the initial reporting of the allocated costs of Lake Del Valle. The Department requests that the additional amount be approved.

William R. Gianelli
William R. Gianelli, Director
Department of Water Resources
The Resources Agency
State of California
March 28, 1973

CONTENTS

	<u>Page</u>
Foreword	3
Organization, Department of Water Resources.	4
Abstract	4
Reporting of Recreation and Fish and Wildlife Enhancement Costs	5
Organization of Report	5
Notes to Table 1.	8
Derivation of Allocation Percentages For Del Valle and Frenchman.	15
Definition of Items Basic to Cost Allocations	15
Separable Cost-Remaining Benefits Method as Applied to Del Valle and Frenchman	16
Del Valle Derivation.	21
Previous Department Derivation	22
Del Valle Benefits	22
Water Supply Benefits.	22
Flood Control Benefits.	24
Recreation and Enhance- ment Benefits	24
Del Valle Costs.	25
Water Supply Alternative Costs	26
Flood Control Alternative Costs	26
Recreation Alternative Costs.	27
Water Supply Separable Costs	27
Flood Control Separable Costs.	29
Recreation Separable Costs.	29
Revised Frenchman Derivation.	29
Previous Department Derivation	29
Frenchman Benefits	30
Water Supply Benefits	30
Recreation and Enhancement Benefits.	31
Frenchman Costs.	32
Water Supply Alternative Costs.	32
Recreation Alternative Costs.	32
Water Supply Separable Costs.	32
Recreation Separable Costs.	32
Comments by the Department of Navigation and Ocean Development, the Department of Parks and Recreation, and the Department of Fish and Game.	35

Table 1. Recreation and Enhancement Costs of the State Water Project	6
Table 2. Tentative Schedule for Reporting and Review of Cost Allocations	9
Table 3. Summary of Recreation Land Acquisitions	10
Table 4. Calculation of Interest Accruals on California Water Resources Development Bond Fund Disburse- ments.	12
Table 5. Derivation of Allocation Percentages for Del Valle.	17
Table 5a. Outline of Calculations for Deriving Allocation Percentages.	18
Table 6. Derivation of Revised Allocation Percentages for Frenchman	19
Table 7. Del Valle Alternative Water Supply Costs	23
Table 8. Del Valle Recreation and Enhance- ment Developments and Specific Costs	24
Table 9. Del Valle Recreation and Enhance- ment Benefits.	25
Table 10. Del Valle Costs, by Feature.	26
Table 11. Frenchman Water Supply Benefits.	30
Table 12. Frenchman Recreation and Enhance- ment Developments and Specific Costs.	31
Table 13. Frenchman Recreation and Enhance- ment Benefits.	32
Table 14. Frenchman Costs, by Feature.	33

State of California
The Resources Agency
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ABSTRACT

This appendix complies with California Water Code Section 11912 which requires an annual Report to the Legislature by the Department of Water Resources. The Department reports that multiple-purpose capital costs of the State Water Project that have been allocated to recreation and fish and wildlife enhancement through December 31, 1972 total \$48,521,586. Expenditures for acquiring rights-of-way, easements, and property for recreation development associated with project facilities through December 31, 1972, total \$8,303,576. The total of these costs and expenditures (\$56,905,162) includes those costs and expenditures previously reported to and approved by the Legislature (\$40,179,181).

REPORTING OF RECREATION AND FISH AND WILDLIFE ENHANCEMENT COSTS

Section 11912 of the California Water Code assigns to the Department of Water Resources the following responsibilities:

It shall be the duty of the department to report annually to the Legislature the costs, if any, which the department has allocated to recreation and fish and wildlife enhancement for each facility of any state water project. The department shall also report to the Legislature any revisions which the department makes in such allocations.

The department shall submit each such cost allocation to the Department of Navigation and Ocean Development, to the Department of Parks and Recreation, and to the Department of Fish and Game. The Department of Navigation and Ocean Development, the Department of Parks and Recreation, and the Department of Fish and Game shall file with the Department of Water Resources their written comments with respect to each such cost allocation, which written comments shall be included in the report required by this section.

It shall also be the duty of the department to report to the Legislature on any expenditure of funds for acquiring rights-of-way, easements and property pursuant to Section 346 for recreation development associated with such facilities....

This appendix constitutes the Department's 1973 report as required by Section 11912.

For brevity, "fish and wildlife enhancement" is hereafter referred to as "enhancement". The Department's cost allocations treat recreation and enhancement as one combined purpose of the State Water Project.

Organization of Report

The costs of State Water Project facilities which the Department has allocated to recreation and enhancement through December 31, 1972, are shown in Table 1, pages 6 and 7 together with expenditures for acquiring rights-of-way, easements, and property for recreation development associated with such facilities.

The notes which immediately follow Table 1 contain an explanation of the Department's procedures for reporting recreation and enhancement costs, a description of how the amounts shown in the Table are calculated, and a reconciliation of significant changes from costs shown in previous reports.

For the first time, the reported costs include joint capital costs of Del Valle Dam and Lake Del Valle that are allocated to recreation and enhancement. The derivation of allocation percentages for Del Valle is described in this report, as well as a revised derivation of percentages previously reported for Frenchman Dam and Lake. The derivation of percentages for the remaining facilities listed in the upper portion of Table 1 have been described in previous reports.

Included at the end of this report are comments by the Department of Navigation and Ocean Development, the Department of Parks and Recreation, and the Department of Fish and Game.

TABLE 1: RECREATION AND ENHANCEMENT
(Reported to the California Legislature in

(in

Type of Costs, Project Facility, and Source of Funds	Disbursements,						
	1952- 1959	1960	1961	1962	1963	1964	1965
JOINT CAPITAL COSTS ALLOCATED TO RECREATION AND ENHANCEMENT: (b)							
<u>Frenchman Dam and Lake (78.5%)</u>							
California Water Resources Development Bond Fund					1,117	4,833	4,652
All other funds	561,021	780,902	643,617	341,042	99,718	-198	6
Subtotal	561,021	780,902	643,617	341,042	100,835	4,635	4,658
<u>Antelope Dam and Lake (100.0%)</u>							
California Water Resources Development Bond Fund		-203	-300	-300	25,829	490,509	259,679
All other funds	35,900	35,039	197,926	781,788	2,634,759	18,847	158
Subtotal	35,900	34,836	197,626	781,488	2,660,588	509,356	259,837
<u>Grizzly Valley Dam and Lake Davis (94.9%)</u>							
California Water Resources Development Bond Fund					19,730	489,287	934,274
All other funds	16,578	13,071	1,992	76,034	107,617	-3,337	3,987
Subtotal	16,578	13,071	1,992	76,034	127,347	485,950	938,261
<u>California Aqueduct, Delta to Dos Amigos P.P. (3.5%)</u>							
California Water Resources Development Bond Fund		-53	-1,483	814	139,934	703,817	1,237,621
All other funds	73,639	69,650	56,211	146,439	1,026,843	536,654	327,625
Subtotal	73,639	69,597	54,728	147,253	1,166,777	1,240,471	1,565,246
<u>Oroville Division (2.9%)</u>							
California Water Resources Development Bond Fund		-32	-103	181	28,994	1,152,459	965,009
All other funds	637,998	292,889	381,606	437,567	1,029,970	-6,341	36,213
Subtotal	637,998	292,857	381,503	437,748	1,058,964	1,146,118	1,001,222
<u>Del Valle Dam and Lake Del Valle (48.0%)</u>							
California Water Resources Development Bond Fund				15	24,215	394,608	720,708
All other funds	115,111	89,362	110,584	51,950	222,880	-2,135	53
Subtotal	115,111	89,362	110,584	51,965	247,095	392,473	720,761
TOTAL	1,440,247	1,280,625	1,390,050	1,835,530	5,361,606	3,779,003	4,489,985
SPECIFIC COSTS OF ACQUIRING LAND FOR RECREATION DEVELOPMENT: (c)							
<u>Frenchman Dam and Lake</u>							
California Water Resources Development Bond Fund				-154	-310	715	661
All other funds	45,962	1,936	605	2,622	496	2	
Subtotal	45,962	1,936	605	2,468	186	717	661
<u>Grizzly Valley Dam and Lake Davis</u>							
California Water Resources Development Bond Fund					918	23,135	695
All other funds	976	985	334	1,169	5,058	5	
Subtotal	976	985	334	1,169	5,976	23,140	695
<u>Oroville Division</u>							
California Water Resources Development Bond Fund				-32,691	68,307	226,476	546,325
All other funds	2,334	18,271	32,233	95,711	82,953	-22,130	-3,985
Subtotal	2,334	18,271	32,233	63,020	151,260	204,346	542,340
<u>Del Valle Dam and Lake Del Valle</u>							
California Water Resources Development Bond Fund					900	24,094	72,024
All other funds	2,016	6,278	8,422	4,212	10,909	95	-817
Subtotal	2,016	6,278	8,422	4,212	11,809	24,189	71,207
<u>San Luis Dam and Reservoir and O'Neill Forebay</u>							
California Water Resources Development Bond Fund				-33,577	-42,491	-25,104	89,261
All other funds	592	4,983	6,761	57,366	43,809	-4,271	-5,111
Subtotal	592	4,983	6,761	23,789	1,318	-29,375	84,150
<u>California Aqueduct</u>							
California Water Resources Development Bond Fund				-33,821	-51,047	47,815	678,62
All other funds	102	2,930	28,406	62,362	75,272	-20,776	-2,05
Subtotal	102	2,930	28,406	28,541	24,225	27,039	676,57
<u>Castaic Dam and Lake</u>							
California Water Resources Development Bond Fund					603	12,209	150,57
All other funds	441	441	552	2,705	5,278	831	
Subtotal	441	441	552	2,705	5,881	13,040	150,57
<u>Cedar Springs Dam and Silverwood Lake</u>							
California Water Resources Development Bond Fund				5,216	141,609		12,84
All other funds	2,907	2,907	27,700	25,255			
Subtotal	2,907	2,907	27,700	30,471	141,609		12,84
TOTAL	55,330	38,731	105,013	156,375	342,264	263,096	1,539,0
TOTAL RECREATION AND ENHANCEMENT COSTS							
California Water Resources Development Bond Fund		-288	-1,886	-94,317	358,308	3,544,853	5,672,9
All other funds	1,495,577	1,319,644	1,496,949	2,086,222	5,345,562	497,246	356,0
GRAND TOTAL	1,495,577	1,319,356	1,495,063	1,991,905	5,703,870	4,042,099	6,029,0

Footnotes a - g are presented on pages 8 through 11.

COSTS OF THE STATE WATER PROJECT (a response to Water Code Section 11912)

dollars)

By Calendar Year							Total Disbursements Thru 1972	Add: Interest Accruals Thru 1972	Total Costs Reported Thru 1972	Comparison with Costs Previously Reported	
1966	1967	1968	1969	1970	1971	1972				Thru 1971	Increase
16,805	57,161	2,317	151	1,369	7,230	1,248	96,883	2,110	98,993	61,714	37,279
8		553	1,221	279	240	1,614	2,430,023		2,430,023	1,527,914	902,109
<u>16,813</u>	<u>57,161</u>	<u>2,870</u>	<u>1,372</u>	<u>1,648</u>	<u>7,470</u>	<u>2,862</u>	<u>2,526,906</u>	<u>2,110</u>	<u>2,529,016</u>	<u>1,589,628</u>	<u>939,388</u>
36,861	153,624	18,498	9,862	19,612	25,049	1,631	1,040,351	98,300	1,138,651	1,134,005	4,646
13	2	21,540	207,446	5,027	3,087	2,113	3,943,645		3,943,645	3,941,686	1,959
<u>36,874</u>	<u>153,626</u>	<u>40,038</u>	<u>217,308</u>	<u>24,639</u>	<u>28,136</u>	<u>3,744</u>	<u>4,983,996</u>	<u>98,300</u>	<u>5,082,296</u>	<u>5,075,691</u>	<u>6,605</u>
1,695,321	471,466	173,989	23,614	6,054	9,674	1,686	3,825,095	400,125	4,225,220	4,295,455	-70,235
35,551	12,395	13,102	157,266	62,253	772	2,646	495,927		499,927	586,048	-86,121
<u>1,730,872</u>	<u>483,861</u>	<u>187,091</u>	<u>180,880</u>	<u>68,307</u>	<u>10,446</u>	<u>4,332</u>	<u>4,325,022</u>	<u>400,125</u>	<u>4,725,147</u>	<u>4,881,503</u>	<u>-156,356</u>
1,808,139	1,487,460	266,762	80,728	90,497	24,812	16,116	5,855,164	709,251	6,564,415	6,559,397	5,018
249,229	126,834	265,462	214,391	54,657	11,863	12,713	3,172,210		3,172,210	3,165,183	7,027
<u>2,057,368</u>	<u>1,614,294</u>	<u>532,224</u>	<u>295,119</u>	<u>145,154</u>	<u>36,675</u>	<u>28,829</u>	<u>9,027,374</u>	<u>709,251</u>	<u>9,736,625</u>	<u>9,724,586</u>	<u>12,045</u>
2,250,292	1,338,830	88,815	27,202	8,296	8,219	4,642	5,872,804	1,717,886	7,590,690	7,430,495	160,195
18,794	45,257	324,162	90,011	18,235	5,656	11,277	3,323,294		3,323,294	3,304,080	19,214
<u>2,269,086</u>	<u>1,384,087</u>	<u>412,977</u>	<u>117,213</u>	<u>26,531</u>	<u>13,875</u>	<u>15,919</u>	<u>9,196,098</u>	<u>1,717,886</u>	<u>10,913,984</u>	<u>10,734,575</u>	<u>179,409</u>
2,889,534	5,472,530	821,958	146	21,268	23,959	40,310	10,409,251	2,984,739	13,393,990		13,393,990
2,065	382,949	1,036,721	73,903	47,406	2,881	6,798	2,140,528		2,140,528		2,140,528
<u>2,891,599</u>	<u>5,855,479</u>	<u>1,858,679</u>	<u>74,049</u>	<u>68,674</u>	<u>26,840</u>	<u>47,108</u>	<u>12,549,779</u>	<u>2,984,739</u>	<u>15,534,518</u>		<u>15,534,518</u>
9,002,612	9,548,508	3,033,879	885,941	334,953	123,442	102,794	42,609,175	5,912,411	48,521,586	32,005,977	16,515,609
1,544	536	167	29	533	759	11	4,491	156	4,647	4,727	-80
		228	75		51		51,977		51,977	51,923	54
<u>1,544</u>	<u>536</u>	<u>395</u>	<u>104</u>	<u>533</u>	<u>810</u>	<u>11</u>	<u>56,468</u>	<u>156</u>	<u>56,624</u>	<u>56,650</u>	<u>-26</u>
16,198	170,026	-14,418	333	972	993	11	198,863	13,769	212,632	218,894	-6,262
					44		8,571		8,571	8,590	-19
<u>16,198</u>	<u>170,026</u>	<u>-14,418</u>	<u>333</u>	<u>972</u>	<u>1,037</u>	<u>11</u>	<u>207,434</u>	<u>13,769</u>	<u>221,203</u>	<u>227,484</u>	<u>-6,281</u>
1,034,241	28,896	-4,346	-5,027	3,256	8,697	-704	1,873,430	660,732	2,534,162	2,429,959	104,203
-3,431	-34,023	79,802	30,861	4,244	3,819	-1,873	288,532		288,532	339,310	-50,778
<u>1,030,810</u>	<u>-5,127</u>	<u>75,456</u>	<u>25,834</u>	<u>7,500</u>	<u>12,516</u>	<u>-1,169</u>	<u>2,161,962</u>	<u>660,732</u>	<u>2,822,694</u>	<u>2,769,269</u>	<u>53,425</u>
9,453	491,130	-75,145	-1,809	920	339	22	521,928	155,624	677,552	639,903	37,649
		-81,598	543	108	90	240	-49,497		-49,497	-46,972	-2,525
<u>9,453</u>	<u>491,130</u>	<u>-156,743</u>	<u>-1,266</u>	<u>1,028</u>	<u>429</u>	<u>262</u>	<u>472,431</u>	<u>155,624</u>	<u>628,055</u>	<u>592,931</u>	<u>35,124</u>
36,620	7,496	2,889	1,600	80,920	2,356	797	120,766	-1,438	119,328	-18,731	138,059
75,598	-1,269	3,178	1,324	-327	547	2	183,182		183,182	63,103	120,079
<u>112,218</u>	<u>6,227</u>	<u>6,067</u>	<u>2,924</u>	<u>80,593</u>	<u>2,903</u>	<u>799</u>	<u>303,948</u>	<u>-1,438</u>	<u>302,510</u>	<u>44,372</u>	<u>258,138</u>
9,537	10,955	8,275	14,048	475,087	848	-159,312	1,001,006	293,454	1,294,460	1,439,555	-145,095
-796	10,299	13,945	19,877	1,498	1,698	78,882	271,655		271,655	144,363	127,292
<u>8,741</u>	<u>21,254</u>	<u>22,220</u>	<u>33,925</u>	<u>476,585</u>	<u>2,546</u>	<u>-80,430</u>	<u>1,272,661</u>	<u>293,454</u>	<u>1,566,115</u>	<u>1,583,918</u>	<u>-17,803</u>
385,776	873,196	-8,629	-31,092	9,144	13,679	24,890	1,430,355	413,992	1,844,347	2,037,346	-192,999
		-25,708	5,507	804	5,659	15,236	11,746		-11,746	-85,438	97,184
<u>385,776</u>	<u>873,196</u>	<u>-34,337</u>	<u>-25,585</u>	<u>9,948</u>	<u>19,338</u>	<u>40,126</u>	<u>1,442,101</u>	<u>413,992</u>	<u>1,856,093</u>	<u>1,951,908</u>	<u>-95,815</u>
66,502	33,261	1,350	38,289	12,028	-28,635	3,768	286,230	115,073	401,303	418,878	-17,575
		-138,061	622,290	23,253	-41,755	4,483	528,979		528,979	527,794	1,185
<u>66,502</u>	<u>33,261</u>	<u>-136,711</u>	<u>660,579</u>	<u>35,281</u>	<u>-70,390</u>	<u>8,251</u>	<u>815,209</u>	<u>115,073</u>	<u>930,282</u>	<u>946,672</u>	<u>-16,390</u>
1,631,248	1,590,503	-238,071	696,848	612,440	-30,811	-29,801	6,732,214	1,651,362	8,383,576	8,173,204	210,372
10,256,823	10,596,567	1,282,482	158,074	729,956	97,979	-64,884	32,536,617	7,563,773	40,100,390	26,651,597	13,448,793
377,037	542,444	1,513,326	1,424,715	217,437	-5,348	137,877	16,804,772		16,804,772	13,527,584	3,277,188
10,633,860	11,139,011	2,795,808	1,582,789	947,393	92,631	72,993	49,341,389	7,563,773	56,905,162	40,179,181	16,725,981

Notes to Table 1

a) Recreation and enhancement costs herein refer only to those capital costs of multiple-purpose facilities of the State Water Project that are allocated to recreation and enhancement and/or of lands that are acquired for associated recreation development. These costs are budgeted by the Department of Water Resources from funds that are available to the

Department for financing the capital costs of the Project.

The remaining recreation and enhancement costs of types not reported herein are budgeted by several state departments and are financed by appropriations from a variety of funds. These costs and appropriations are summarized below:

		General Fund Appropriations, unless otherwise noted		
Type of Recreation and Enhancement:		1973-74(a)	1972-73	Total, 1962-63 thru 1973-74
Costs Not Reported in Table 1				
Allocated operation, maintenance and replacement costs of multiple-purpose facilities	\$ 1,522,000	\$	0	\$ 3,795,000
Capital costs of recreation developments other than for land acquisition	13,572,000	(b 14,060,000	(b 57,134,000	(c
Operation, maintenance, and replacement costs of recreation developments	1,368,000	1,020,000	3,985,000	

a) Proposed amounts shown in the Governor's Budget.
 b) Total amounts from the Recreation and Fish and Wildlife Enhancement Fund.
 c) Includes \$1,236,000 from the Harbors and Watercraft Revolving Fund, and \$200,000 directly from the Highway Users Tax Fund and an additional \$11,470,000 from the Recreation and Fish and Wildlife Enhancement Fund.

Allocated operation, maintenance, and replacement costs of multiple-purpose facilities are budgeted by the Department of Water Resources and financed by annual appropriations from the General Fund. Capital costs (other than land acquisition costs) and operation, maintenance, and replacement costs of recreation developments are budgeted by the Department of Parks and Recreation -- except that the costs of boating facilities are budgeted by the Department of Navigation and Ocean Development. Costs of enhancement developments are budgeted by the Department of Fish and Game.

each multiple-purpose facility, of the percentages of the total joint costs that are attributable to each included purpose. These derivations are based on the application of conventional cost allocation methods which weight the estimated costs to be incurred and benefits to be realized during a 50-year period of analysis. Allocated costs reflect the application of these percentages to the actual capital costs incurred for the facility as accounted by the Department.

b) Joint capital costs allocated to recreation and enhancement are based on the Department's derivation, for

Costs allocated to recreation and enhancement generally are first reported in the year following the year construction of a facility is complete. However, these allocated costs may be subsequently changed

due to either the adjustment of accounted capital costs or the revision of allocation percentages.

with resultant decreases in projected recreation benefits and costs, or (2) a change in cost allocation method would produce more equitable results.

The allocation percentages of a facility may be revised if it can be formally demonstrated that such revision is warranted due to substantial changes in the supporting factors to the previous derivation. Such demonstration could include the finding that (1) funds are not forthcoming for financing the costs of planned recreation developments,

The tentative schedule shown in Table 2 indicates the times when allocated costs of each State Water Project facility will be first reported and when the factors which support the derivation of allocation percentages will be periodically reviewed for substantial changes.

TABLE 2: TENTATIVE SCHEDULE FOR REPORTING AND REVIEW OF COST ALLOCATIONS

Project Facility	: Year : :Allocation: : to be : :Initially : : Reported :	Year Supporting Factors to be Reviewed for Substantial Changes												
		:73:	:74:	:75:	:76:	:77:	:78:	:79:	:80:	:81:	:82:	:83:	:84:	:85(a)
Frenchman Lake	1965	x				x								x
Antelope Lake	1966	x				x								x
Lake Davis	1968	x				x								x
Abbey Bridge Reservoir	1979 (b)													x
Dixie Refuge Reservoir	1981 (b)													x
Oroville Division	1971				x					x				
Delta Facilities	1980 (b)													x
North Bay Aqueduct	1980													x
South Bay Aqueduct (Lake Del Valle)	1973					x				x				
California Aqueduct, Project Conservation Facilities:	1970													
Bethany Reservoir					x					x				x
San Luis Reservoir					x					x				x
O'Neill Forebay					x					x				x
Los Banos Reservoir					x					x				x
Aqueduct Developments					x					x				x
California Aqueduct, Project Transportation Facilities:	1974													
Pyramid Lake										x				x
Castaic Lake										x				x
Silverwood Lake										x				x
Lake Perris										x				x
Aqueduct Developments										x				x

a) Reviews would continue in the time-sequence indicated.
b) Construction schedule tentative and subject to revision.

In accordance with the above, the allocation for Del Valle of the South Bay Aqueduct is initially reported herein. Based on the scheduled review of factors supporting previous allocations for the three Upper Feather reservoirs (Frenchman and Antelope Lakes

and Lake Davis), a revised Frenchman Lake allocation is warranted and reported herein. Review of the Lake Davis allocation indicates that factors have not substantially changed. Antelope Lake is still used solely for recreation and enhancement.

TABLE 3: SUMMARY OF RECREATION LAND ACQUISITIONS (a)
(in acres)

Project Facility	:Acquired: : (b	To be :Acquired:	Federal: Lands (c:	Total
Frenchman Lake	719	0	0	719
Antelope Lake	1,342	0	0	1,342
Lake Davis	733	0	0	733
Abbey Bridge	0	2,663	0	2,663
Oroville Division	2,538	1	212	2,751
Lake Del Valle	1,206	0	0	1,206
San Luis Reservoir and O'Neill Forebay	748	0	0	748
California Aqueduct (excluding reservoirs)	982	161 (d	0	1,143
Castaic Lake	1,403	2	146	1,551
Silverwood Lake	505	0	2,919	3,424

- a) Includes recreation lands for only those project facilities with an established recreation land use and acquisition plan.
b) Costs of acquiring these lands are shown in Table 1.
c) These lands are presently being leased from the Federal Government at a nominal cost to the State.
d) Additional land needs are to be identified by future studies.

c) Specific costs of acquiring land for recreation developments are incurred by the Department under the authority of California Water Code Section 346. The Department purchases recreation lands concurrently with lands needed for multiple-purpose facilities in order to decrease the total land costs of the Project and to acquire property in an orderly manner. Recreation lands acquired for each project facility through December 31, 1972 are summarized in Table 3.

The Department reports the annual expenditure of project funds for acquiring all recreation land in the year following the expenditure. The costs of such lands generally are established when acquired and are not affected by allocation percentages for the associated multiple-purpose project facility. However, the reported costs of certain lands may be subsequently revised due to receipt of certain revenues (such as federal grants and miscellaneous income from right-of-way sales) or due to modification of the recreation land use plan.

The amounts to be reported in future years will include credits for any

reduction in previously reported costs, together with appropriate interest income thereon. If recreation land is sold or if grants are received, the amount of the receipt will be reported as a negative cost of the facility the year received. If recreation land is reclassified as multiple-purpose project land, the original purchase price, together with appropriate interest income thereon, will be reported as a negative expenditure for specific land costs in the year the modification occurs, and an appropriate amount will be added to the joint capital costs allocated to recreation and enhancement for the associated facility.

The costs of acquiring recreation land include the salaries of department personnel who are engaged in recreation land acquisition activities, together with indirect cost that are distributed on the basis of direct salaries.

d) Interest accruals are calculated as shown in Table 4. Interest charge are accrued only on the portion of annual disbursements financed by the California Water Resources Development Bond Fund (proceeds from

the sale of Burns-Porter Bonds) and cease when such disbursements, together with cumulative interest accruals thereon, have been reimbursed. Calculations are based on the weighted average interest costs of Burns-Porter Bonds sold to date (4.371 percent for the \$1,540,000,000 in bonds outstanding as of December 31, 1972).

As of December 31, 1972, a total of \$35,000,000 had been reimbursed to the Department under the continuing annual \$5,000,000 appropriation (through fiscal year 1972-73) of state tideland oil and gas revenues, authorized by California Statutes of 1966, First Extraordinary Session, Chapter 27. Reimbursement of the increased amount of costs reported herein would cover annual appropriations in the full amounts for 1973-74, 1974-75, 1975-76, and 1976-77, together with \$1,905,162 of the appropriation for 1977-78.

e) The Department requests that this total increased amount of reported costs be approved by the Legislature.

f) Costs previously reported are as shown in Table 1 (pages 8 and 9) of Appendix D to Bulletin 132-72. Such costs were approved by California Statutes of 1972, Chapter 1197, and were based on the Department's accounting records as of December 31, 1971. The average interest cost on Burns-Porter Bond sales was then 4.342 percent.

g) Reasons for cost increases, outlined to the right, reflect not only the additional amounts disbursed during 1972 but also retroactive cost adjustments for the entire 1952 through 1971 period (all increases shown in thousands of dollars):

◦ Total joint capital costs of Del Valle Dam and Lake Del Valle allocated to recreation and enhancement, reported for the first time.....	\$12,550
◦ Additional accrued interest charges due to an additional year of accrual (1972) and to an increase of average interest cost for Burns-Porter Bonds sold...	\$ 3,377
◦ Increase in joint capital costs of Frenchman Lake allocated to recreation and enhancement due to the revision of the cost allocation percentage from 50.0% to 78.5%.....	\$ 905
◦ Costs for certain recreation land parcels reported for the first time for San Luis Reservoir (\$201,000), California Aqueduct (\$114,000) and Castaic Lake (\$137,000).....	\$ 452
◦ Correct reported land costs at San Luis Reservoir and O'Neill Forebay to reflect the fact that these costs are borne solely by the State and not share with the United States.....	\$ 46
◦ Additional disbursements during 1972 for recreation land and for joint capital costs allocated to recreation and enhancement.....	\$ 26
◦ Reimbursement by Department of Parks and Recreation for Loafer Creek Sewer Line at Lake Oroville.....	\$ -57
◦ Share of costs allocated to joint project purposes for four parcels at Castaic Lake which were previously charged solely to recreation (see page 15, Appendix D, Bulletin 132-72).....	\$ -118
◦ Retroactive accounting adjustments for disbursements previously reported through 1971 (primarily changes in distribution of general project costs and additional credits derived from rights-of-way rentals and sales).	\$ -455
TOTAL INCREASE	\$16,726

TABLE 4: CALCULATION OF INTEREST ACCRUALS ON CALIFORNIA

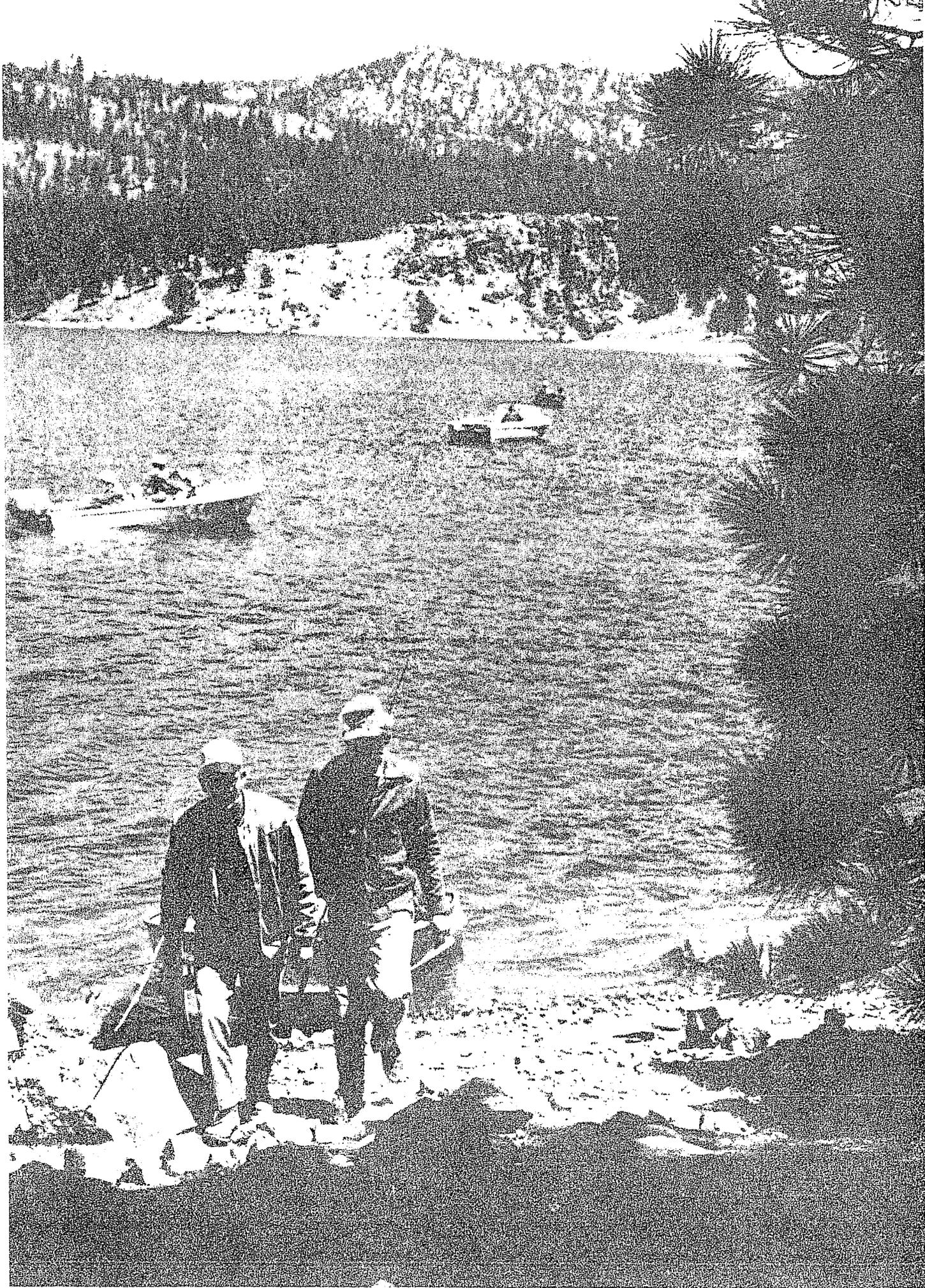
(in dollars)

YEAR	ITEM	JOINT CAPITAL COSTS ALLOCATED TO RECREATION AND ENHANCEMENT					
		Frenchman Dam and Lake	Antelope Dam and Lake	Grizzly Valley Dam and Lake Davis	California Aqueduct Delta to Dcs Amigos P.P.	Oroville Division	Del Valle Dam and Lake Del Valle
1952-68	a. Disbursements:						
	1. Calif. Water Resources Development Bond Fund	86,885	984,197	3,784,067	5,643,011	5,824,445	10,323,568
	2. All other funds	2,426,669	3,725,972	276,990	2,878,586	3,198,115	2,009,540
b.	Reimbursements during 1967 and 1968 applied to:						
	1. Calif. Water Resources Development Bond Fund	88,919	1,081,186	4,096,203	3,035,029		
	2. All other funds	2,426,669	3,725,972	276,990			
c.	Interest accrued to end of 1968	2,048	97,414	397,856	629,706	754,414	915,839
1969	d. Beginning-of-year balance to be reimbursed:						
	1. Calif. Water Resources Development Bond Fund	14	425	85,720	3,237,688	6,578,859	11,239,407
	2. All other funds				2,878,586	3,198,115	2,009,540
	e. Disbursements during year:						
	1. Calif. Water Resources Development Bond Fund	151	9,862	23,614	80,728	27,202	146
	2. All other funds	1,221	207,446	157,266	214,391	90,011	73,903
	f. Reimbursements during year applied to:						
	1. Calif. Water Resources Development Bond Fund	165	10,287	109,334	3,318,416		
	2. All other funds	1,221	207,446	157,266	1,190,624		
	g. End-of-year balance, without interest for:						
1. Calif. Water Resources Development Bond Fund							
2. All other funds				1,902,353	6,606,061	11,239,553	
					3,288,126	2,083,443	
h.	Interest accrual on average balance of d(1) & g(1)		9	1,873	70,760	288,156	491,278
1970	i. Beginning-of-year balance to be reimbursed:						
	1. Calif. Water Resources Development Bond Fund			9	1,873	70,760	6,894,217
	2. All other funds				1,902,353	3,288,126	2,083,443
	j. Disbursements during year:						
	1. Calif. Water Resources Development Bond Fund	1,369	19,612	6,054	90,497	8,296	21,268
	2. All other funds	279	5,027	62,253	54,657	18,235	47,406
k. Reimbursements during year applied to:							
1. Calif. Water Resources Development Bond Fund							
2. All other funds							
l. End-of-year balance, without interest for:							
1. Calif. Water Resources Development Bond Fund	1,369	19,621	7,927	161,257	6,902,513	11,752,099	
2. All other funds	279	5,027	62,253	1,957,010	3,306,361	2,130,849	
m.	Interest accrual on average balance of i(1) & l(1)	30	429	214	5,071	301,528	513,219
1971	n. Beginning-of-year balance to be reimbursed:						
	1. Calif. Water Resources Development Bond Fund	1,399	20,050	8,141	166,328	7,204,041	12,265,318
	2. All other funds	279	5,027	62,253	1,957,010	3,306,361	2,130,849
	o. Disbursements during year:						
	1. Calif. Water Resources Development Bond Fund	7,230	25,049	9,674	24,812	8,219	23,951
	2. All other funds	240	3,087	772	11,863	5,656	2,88
	p. Reimbursement during year applied to:						
	1. Calif. Water Resources Development Bond Fund	8,629	45,099	17,815	191,140	2,394,118	
2. All other funds	519	8,114	63,025	1,968,873			
q. End-of-year balance, without interest for:							
1. Calif. Water Resources Development Bond Fund						4,818,142	
2. All other funds						3,312,017	
						12,289,27	
						2,133,73	
r.	Interest accrual on average balance of n(1) & q(1)	31	438	178	3,635	262,745	536,64
1972	s. Beginning-of-year balance to be reimbursed:						
	1. Calif. Water Resources Development Bond Fund	31	438	178	3,635	5,080,887	12,825,97
	2. All other funds					3,312,017	2,133,73
	t. Disbursements during year:						
	1. Calif. Water Resources Development Bond Fund	1,248	1,631	1,686	16,116	4,642	40,3
	2. All other funds	1,614	2,113	2,646	12,713	11,277	6,7
	u. Reimbursements during year applied to:						
1. Calif. Water Resources Development Bond Fund	1,279	2,069	1,864	19,751	5,085,529	1,543,7	
2. All other funds	1,614	2,113	2,646	12,713	3,323,294		
v. End-of-year balance, without interest for:							
1. Calif. Water Resources Development Bond Fund						11,322,4	
2. All other funds						2,140,9	
w.	Interest accrual on average balances s(1) & v(1)	1	10	4	79	111,043	527,7
SUMMARY: 1952 thru 1972	x. Beginning of 1973, balance to be reimbursed:						
	1. Calif. Water Resources Development Bond Fund	1	10	4	79	111,043	11,850,7
	2. All other funds						2,140,9
	Total	1	10	4	79	111,043	13,990,6
y.	Disbursements, 1952 thru 1972:						
	1. Calif. Water Resources Development Bond Fund	96,883	1,040,351	3,825,095	5,855,164	5,872,804	10,409,7
	2. All other funds	2,430,023	3,943,645	499,927	3,172,210	3,323,294	2,140,9
	Total	2,526,906	4,983,996	4,325,022	9,027,374	9,196,098	12,549,6
z.	Reimbursements applied thru 1972 to:						
	1. Calif. Water Resources Development Bond Fund	98,992	1,138,641	4,225,216	6,564,336	7,479,647	1,543,7
	2. All other funds	2,430,023	3,943,645	499,927	3,172,210	3,323,294	
	Total	2,529,015	5,082,286	4,725,143	9,736,546	10,802,941	1,543,7
	TOTAL INTEREST ACCRUALS, 1952 THRU 1972	2,110	98,300	400,125	709,251	1,717,886	2,984,7

WATER RESOURCES DEVELOPMENT BOND FUND DISBURSEMENTS

@ 4.371 per annum)

Total	COSTS OF ACQUIRING LAND FOR RECREATION DEVELOPMENTS									GRAND TOTAL
	Frenchman Dam and Lake	Grizzley Valley Dam and Lake Davis	Oroville Division	Del Valle Dam and Lake Del Valle	San Luis Dam and Reservoir and O'Neill Forebay	California Aqueduct	Castaic Dam and Lake	Cedar Springs Dam and Silverwood Lake	Total	
26,646,173 14,515,872	3,159 51,851	196,554 8,527	1,867,208 247,735	522,456 -50,478	35,093 181,636	670,335 169,700	1,413,734 -15,460	260,780 -79,292	4,969,319 514,219	31,615,492 15,030,091
8,301,337 6,429,631	3,290 51,851	205,364 8,527							208,654 60,378	8,509,991 6,490,009
2,797,277	132	13,613	263,025	49,111	-8,249	97,540	128,660	51,126	594,958	3,392,235
21,142,113 8,086,241	1	4,803	2,130,233 247,735	571,567 -50,478	26,844 181,636	767,875 169,700	1,542,394 -15,460	311,906 -79,292	5,355,623 453,841	26,497,736 8,540,082
141,703 744,238	29 75	333	-5,027 30,861	-1,809 543	1,600 1,324	14,048 19,877	-31,092 5,507	38,289 622,290	16,371 680,477	158,074 1,424,715
3,438,202 1,556,557	30 75	5,136							5,166 75	3,443,368 1,556,632
17,845,614 7,273,922			2,125,206 278,596	569,758 -49,935	28,444 182,960	781,923 189,577	1,511,302 -9,953	350,195 542,998	5,366,828 1,134,243	23,212,442 8,408,165
852,076		105	93,003	24,944	1,208	33,871	66,739	14,470	234,340	1,086,416
18,697,690 7,273,922		105	2,218,209 278,596	594,702 -49,935	29,652 182,960	815,794 189,577	1,578,041 -9,953	364,665 542,998	5,601,168 1,134,243	24,298,858 8,408,165
147,096 187,857	533	972	3,256 4,244	920 108	80,920 -327	475,087 1,498	9,144 804	12,028 23,253	582,860 29,580	729,956 217,437
18,844,786 7,461,779	533	1,077	2,221,465 282,840	595,622 -49,827	110,572 182,633	1,290,881 191,075	1,587,185 -9,149	376,693 566,251	6,184,028 1,163,823	25,028,814 8,625,602
820,491	12	26	97,029	26,015	3,065	46,041	69,176	16,202	257,566	1,078,057
19,665,277 7,461,779	545	1,103	2,318,494 282,840	621,637 -49,827	113,637 182,633	1,336,922 191,075	1,656,361 -9,149	392,895 566,251	6,441,594 1,163,823	26,106,871 8,625,602
98,943 24,499	759 51	993 44	8,697 3,819	339 90	2,356 547	848 1,698	13,679 5,659	-28,635 -41,755	-964 -29,847	97,979 -5,348
2,656,801 2,040,531	1,304 51	2,096 44			115,993 183,180				119,393 183,275	2,776,194 2,223,806
17,107,419 5,445,747			2,327,191 286,659	621,976 -49,737		1,337,770 192,773	1,670,040 -3,490	364,260 524,496	6,321,237 950,701	23,428,656 6,396,448
803,668	12	24	101,531	27,179	2,484	58,455	72,698	16,548	278,931	1,082,599
17,911,087 5,445,747	12	24	2,428,722 286,659	649,155 -49,737	2,484	1,396,225 192,773	1,742,738 -3,490	380,808 524,496	6,600,168 950,701	24,511,255 6,396,448
65,633 37,161	11	11	-704 1,873	22 240	797 2	-159,312 78,882	24,890 15,236	3,768 4,483	-130,517 100,716	-64,884 137,877
6,654,279 3,342,380	23	35			3,281 2				3,339 2	6,657,618 3,342,382
11,322,441 2,140,528			2,428,018 288,532	649,177 -49,497		1,236,913 271,655	1,767,628 11,746	384,576 528,979	6,466,312 1,051,415	17,788,753 3,191,943
638,899		1	106,144	28,375	54	57,547	76,719	16,727	285,567	924,466
11,961,340 2,140,528 14,101,868		1	2,534,162 288,532 2,822,694	677,552 -49,497 628,055	54 54	1,294,460 271,655 1,566,115	1,844,347 11,746 1,856,093	401,303 528,979 930,282	6,751,879 1,051,415 7,803,294	18,713,219 3,191,943 21,905,162
27,099,548 15,509,627 42,609,175	4,491 51,977 56,468	198,863 8,571 207,434	1,873,430 288,532 2,161,962	521,928 -49,497 472,431	120,766 183,182 303,948	1,001,006 271,655 1,272,661	1,430,355 11,746 1,442,101	286,230 528,979 815,209	5,437,069 1,295,145 6,732,214	32,536,617 16,804,772 49,341,389
21,050,619 13,369,099 34,419,718	4,647 51,977 56,624	212,631 8,571 221,202							336,552 243,730 580,282	21,387,171 13,612,829 35,000,000
5,912,411	156	13,769	660,732	155,624	-1,438	293,454	413,992	115,073	1,651,362	7,563,773



DERIVATION OF ALLOCATION PERCENTAGES
FOR DEL VALLE AND FRENCHMAN

STATE WATER PROJECT purposes include water supply, power generation, flood control, and recreation and enhancement. All costs of project facilities must be allocated among purposes for administration of:

- The payment provisions of contracts, executed by 31 public agencies for a long-term project water supply, whereby the Department shall determine these costs of facilities which are reimbursable by the contractors (i.e., costs allocated to water supply and power generation).
- The provisions of the Davis-Dolwig Act whereby the Department shall report to the Legislature the costs of facilities that are allocated to recreation and enhancement.

The allocation method to be used by the Department is not specified by either the above provisions other than the water supply contract requirement that the "Separable Cost-Remaining Benefits" method shall be used for "project conservation facilities". Project conservation facilities include the Oroville Division, San Luis Reservoir, the Delta Facilities, and the Upper Feather reservoirs (i.e., includes Frenchman Lake). For such facilities, contract provisions also require that -- "allocations to purposes the costs of which are paid by the United States (namely, flood control) shall be as determined by the United States".

As differentiated from project conservation facilities, which develop a project water supply in and above the Sacramento-San Joaquin Delta, "project transportation facilities" convey the supply to areas of use. Project transportation facilities include the aqueduct system leading from the Delta, together with associated reservoirs (such as the South Bay Aqueduct and Lake Del Valle) but excluding San Luis Reservoir.

While not covered by contract provisions, the costs of Lake Del Valle also will be allocated among project purposes by the "Separable Cost-Remaining Benefits" method under the Department's administrative policies. Generally, this method is preferred over all others. However, as a project transportation facility, the Del Valle allocation is not bound by the contract requirement that "... allocations to purposes the costs of which are paid by the United States shall be as determined by the United States."

Definition of Items Basic to Cost Allocations

Total project costs of a multiple-purpose facility are estimated and accounted as the sum of:

ical features which generally serve more than one purpose -- such as multiple-purpose dams and reservoirs.

◦ *Specific costs*, those costs of physical features of a facility which can be readily identified as serving one project purpose exclusively -- such as onshore recreation developments or powerplants, and

Total project costs also may be estimated (but cannot be accounted) as the sum of:

◦ *Separable costs*, and

◦ *Joint costs*, those costs of phys-

◦ *Remaining joint costs*.

Separable costs are estimated for each purpose of a multiple-purpose facility as the remainder of:

- ° *Total project costs* of the facility, less
- ° *Estimated costs* of a similar facility designed so as to exclude the particular purpose.

Total separable costs of a facility are the total of the separable costs of each respective purpose of the facility. *Remaining joint costs* are the remainder of *total project costs* of the facility less estimated *total separable costs* of the facility.

Justifiable costs of a facility are

the maximum expenditures which theoretically would be justified to realize the total benefits of the facility. *Remaining justifiable costs* are those *justifiable costs* in excess of the *total separable costs* of the facility.

Benefits are the net values of goods and services estimated to be realized directly from operation of the facility, after deducting all non-project costs involved. *Alternative costs* are the least-expensive single-purpose means of providing the same worth of *benefits* for a given purpose as those to be realized from the facility. *Justifiable costs* of a facility are the total *justifiable costs* of all purposes of the facility.

Separable Cost-Remaining Benefits Method as Applied to Del Valle and Frenchman

Tables 5 and 6 show the derivation of allocation percentages for Del Valle and Frenchman, respectively, by the Separable Cost-Remaining Benefits method. The step-by-step computational procedure for Table 5 is outlined in auxiliary Table 5a.

Under the Separable Cost-Remaining Benefits method, *total project costs* of a facility are allocated to each included purpose by the sum of:

- ° The estimated *separable costs* of each purpose (Item 4 of Tables 5 and 6), and
- ° A proportionate share of the estimated *remaining joint costs* (Item 7) on the basis of *remaining justifiable costs* of each purpose (Items 5 and 6).

Conventionally, the *total project costs* allocated to each purpose (Item 8), expressed as a percentage (Item 9), are the final results of the allocation. However, *specific costs* of recreation developments (except for associated land costs) are accounted by agencies other

than the Department of Water Resources and are financed by funds other than project funds. For this reason, the percentages of each purpose's allocation of the estimated *total project costs* must be adjusted, by deducting the estimated *specific costs* (Item 10), to be applicable to only the estimated *joint costs* (Item 11). The resulting percentages (Item 12) can then be applied to the actual joint costs of project facilities as accounted by the Department.

All items shown in the derivation of allocation percentages are expressed in terms of equal annual equivalent amounts applicable during the first 50 years of full operation of the respective facilities. Such amounts are calculated at the prevailing project interest rate--approximately 4.5 percent. Through use of such amounts, items which actually vary in annual magnitude with time can be properly weighted so that they can be merged and/or compared with other items of the derivation.

Considerations unique to the Del Valle and Frenchman Derivations are described in the following sections.

TABLE 5: DERIVATION OF ALLOCATION PERCENTAGES FOR DEL VALLE
Applicable to the Costs of Features Jointly Used by Project Purposes

(thousands of dollars unless otherwise noted)

Item:	Item of Benefit or Cost ^(a)	Water Supply:	Flood Control:	Recreation and Enhancement:	Total
1.	Benefits	479	528	1,675	2,682
2.	Alternative Costs	479	1,266	1,779	3,524
3.	Justifiable Costs	479	528	1,675	2,682
4.	Separable Costs:				
	Total	204	211	596	1,011
	Capital	191	188	218	597
	OMP&R	13	23	378	414
5.	Remaining Justifiable Costs	275	317	1,079	1,671
6.	Percent Distribution of Remaining Justifiable Costs	16.4%	19.0%	64.6%	100.0%
7.	Remaining Joint Costs:				
	Total	185	214	729	1,128
	Capital	172	198	676	1,046
	OMP&R	13	16	53	82
8.	Total Allocated Project Costs:				
	Total	389	425	1,325	2,139
	Capital	363	386	894	1,643
	OMP&R	26	39	431	496
9.	Percent Distribution of Total Project Costs to be Allocated:				
	Total	18.2%	19.9%	61.9%	100.0%
	Capital	22.1%	23.5%	54.4%	100.0%
	OMP&R	5.2%	7.9%	86.9%	100.0%
10.	Specific Costs:				
	Total	0	0	580	580
	Capital	0	0	202	202
	OMP&R	0	0	378	378
11.	Total Allocated Costs of Features Jointly Used:				
	Total	389	425	745	1,559
	Capital	363	386	692	1,441
	OMP&R	26	39	53	118
12.	Percent Distribution Costs of Features Jointly Used:				
	Total	24.9%	27.3%	47.8%	100.0%
	Capital	25.2%	26.8%	48.0%	100.0%
	OMP&R	22.0%	33.1%	44.9%	100.0%

a) Annual benefits and costs through the year 2019, converted to equal annual equivalent at 4.5 percent interest, for the 50-year period 1970-2019.

For computational procedure, see Table 5a.

TABLE 5a: OUTLINE OF CALCULATIONS FOR DERIVING ALLOCATION PERCENTA

Step No.	Calculation
1	alternative water supply costs (benefits) = justifiable water supply costs (b) (\$479,000) (\$479,000)
2	flood control benefits = justifiable flood control costs (b) (\$528,000) (\$528,000)
3	recreation benefits = justifiable recreation costs (b) (\$1,675,000) (\$1,675,000)
4	total project costs-hypothetical flood control and recreation project costs = separable water supply costs (\$2,139,000) (\$1,935,000) (\$204,000)
5	total project costs-hypothetical water supply and recreation project costs = separable flood control costs (\$2,139,000) (\$1,928,000) (\$211,000)
6	total project costs-hypothetical water supply and flood control project costs = separable recreation costs (\$2,139,000) (\$1,543,000) (\$596,000)
7	justifiable water supply costs-separable water supply costs = remaining justifiable water supply costs (\$479,000) (\$204,000) (\$275,000)
8	justifiable flood control costs-separable flood control costs = remaining justifiable flood control costs (\$528,000) (\$211,000) (\$317,000)
9	justifiable recreation costs-separable recreation costs = remaining justifiable recreation costs (\$1,675,000) (\$596,000) (\$1,079,000)
10	remaining justifiable water supply costs + remaining justifiable flood control costs + remaining justifiable recreation costs = total remaining justifiable costs (\$275,000) (\$317,000) (\$1,079,000) (\$1,671,000)
11	remaining justifiable water supply costs x 100 = percent distribution of remaining justifiable water supply costs total remaining justifiable costs (\$275,000) (16.4%) (\$1,671,000)
12	remaining justifiable flood control costs x 100 = percent distribution of remaining justifiable flood control costs total remaining justifiable costs (\$317,000) (19.0%) (\$1,671,000)
13	remaining justifiable recreation costs x 100 = percent distribution of remaining justifiable recreation costs total remaining justifiable costs (\$1,079,000) (64.6%) (\$1,671,000)
14	total allocated project costs-separable project costs = remaining joint project costs (\$2,139,000) (\$1,011,000) (\$1,128,000)
15	remaining joint project costs x percent distribution of remaining justifiable water supply costs = remaining joint water supply costs (\$1,128,000) (16.4%) (\$185,000)
16	remaining joint project costs x percent distribution of remaining justifiable flood control costs = remaining joint flood control costs (\$1,128,000) (19.0%) (\$214,000)
17	remaining joint project costs x percent distribution of remaining justifiable recreation costs = remaining joint recreation costs (\$1,128,000) (64.6%) (\$729,000)
18	remaining joint water supply costs + separable water supply costs = total costs allocated to water supply (\$185,000) (\$204,000) (\$389,000)
19	remaining joint flood control costs + separable flood control costs = total costs allocated to flood control (\$214,000) (\$211,000) (\$425,000)
20	remaining joint recreation costs + separable recreation costs = total costs allocated to recreation (\$729,000) (\$596,000) (\$1,325,000)
21	specific water supply costs + specific flood control costs + specific recreation costs = total specific project costs (\$0) (\$0) (\$580,000) (\$580,000)
22	total allocated water supply costs - specific water supply costs = joint costs allocated to water supply (\$389,000) (\$0) (\$389,000)
23	total allocated flood control costs - specific flood control costs = joint costs allocated to flood control (\$425,000) (\$0) (\$425,000)
24	total allocated recreation costs - specific recreation costs = joint costs allocated to recreation (\$1,325,000) (\$580,000) (\$745,000)
25	joint costs allocated to water supply + joint costs allocated to flood control + joint costs allocated to recreation = total joint project costs (\$389,000) (\$425,000) (\$745,000) (\$1,559,000)
26	joint costs allocated to water supply x 100 = percent of joint costs allocated to water supply total joint project costs (\$389,000) (24.9%) (\$1,559,000)
27	joint costs allocated to flood control x 100 = percent of joint costs allocated to flood control total joint project costs (\$425,000) (27.3%) (\$1,559,000)
28	joint costs allocated to recreation x 100 = percent of joint costs allocated to recreation total joint project costs (\$745,000) (47.8%) (\$1,559,000)
29	percent of joint costs allocated to water supply + percent of joint costs allocated to flood control + percent of joint costs allocated to recreation = 100% (24.9%) (27.3%) (47.8%)

a) Applicable to the total costs (Capital and O&M&R) of features jointly used by project purposes
b) Justifiable costs for each purpose are the total benefits of that purpose or the costs of the least expensive single-purpose alternative providing the same benefits, whichever are less.

TABLE 6: DERIVATION OF REVISED ALLOCATION PERCENTAGES FOR FRENCHMAN
Applicable to the Costs of Features Jointly Used by Project Purposes

(in dollars unless otherwise noted)

Item:	Item of Benefit or Cost(a)	Water Supply	Recreation and Enhancement:	Total
1.	Benefits	35,800	655,100	690,900
2.	Alternative Costs	150,600	351,700	502,300
3.	Justifiable Costs	35,800	351,700	387,500
4.	Separable Costs:			
	Total	35,800	236,900	272,700
	Capital	35,800	109,600	145,400
	OMP&R	0	127,300	127,300
5.	Remaining Justifiable Costs	0	114,800	114,800
6.	Percentage Distribution of Remaining Justifiable Costs	0.0%	100.0%	100.0%
7.	Remaining Joint Costs:			
	Total	0	114,800	114,800
	Capital	0	73,100	73,100
	OMP&R	0	41,700	41,700
8.	Total Allocated Project Costs:			
	Total	35,800	351,700	387,500
	Capital	35,800	182,700	218,500
	OMP&R	0	169,000	169,000
9.	Percent Distribution of Total Project Costs to be Allocated:			
	Total	9.2%	90.8%	100.0%
	Capital	16.4%	83.6%	100.0%
	OMP&R	0.0%	100.0%	100.0%
10.	Specific Costs:			
	Total	0	179,400	179,400
	Capital	0	52,100	52,100
	OMP&R	0	127,300	127,300
11.	Total Allocated Costs of Features Jointly Used:			
	Total	35,800	172,300	208,100
	Capital	35,800	130,600	166,400
	OMP&R	0	41,700	41,700
12.	Percent Distribution Costs of of Features Jointly Used:			
	Total	17.2%	82.8%	100.0%
	Capital	21.5%	78.5%	100.0%
	OMP&R	0.0%	100.0%	100.0%

a) Annual benefits and costs through the year 2011 converted to equivalent equal annual amounts for 50-year period 1962-2011, at 4.5 percent interest.

Del Valle Derivation

LAKE DEL VALLE is being operated for flood control, water supply, and recreation and enhancement.

Lake Del Valle, with a capacity of 77,000 acre-feet, is formed by Del Valle Dam on Arroyo Del Valle, about five miles south of Livermore in Alameda County. Construction of the Dam began in 1966. Water storage in the Lake began November 15, 1968.

Lake Del Valle serves three water supply functions:

(1) It regulates project water imports to demand schedules. Project water is diverted from the Delta through the initial reaches of the South Bay Aqueduct at essentially uniform flow rates. These uniform flows are regulated in Del Valle storage to match the varied monthly demands for state project water by the three South San Francisco Bay Area water supply contractors-- Alameda County Flood Control and Water Conservation District, Zone 7; Alameda County Water District; and Santa Clara County Flood Control and Water District.

(2) It provides an emergency source of project water for the above contractors in the event of operational contingencies up-aqueduct from Lake Del Valle.

(3) To the extent that regulatory storage capacity is available after satisfying the requirements of (1) and (2) above, it conserves the flood runoff originating in Arroyo Del Valle for delivery to Alameda County Water District and Pleasanton Township County Water District, under a November 13, 1969 contract. (Pleasanton's interests under this contract were assigned to the Alameda County Flood Control and Water Conservation District, Zone 7, May 1, 1971.)

Lake Del Valle is the only facility of the South Bay Aqueduct which accommodates purposes other than

water supply. While recreation features have been considered along the conveyance route of the Aqueduct, none have been proposed.

The Department of Parks and Recreation officially opened Lake Del Valle for recreation on April 1, 1970 -- the East Bay Regional Park District assumed operational responsibility for recreational features on July 1, 1970.

During the flood season, the top 35,000 acre-feet of storage space is reserved for flood control. In compensation for the flood control operation, the Federal Government is contributing a share of the costs of Del Valle under a May 31, 1966 contract. The federal contribution is set at 30.7 percent (not to exceed \$4,080,000) of the actual construction costs of the Dam and Lake, plus \$776,000 for the federal share of costs of maintenance and operation (on a capitalized basis). The Department has received the maximum contribution under the contract (\$4,856,000).

The above federal share was based on an allocation prepared by the Board of Engineers for Rivers and Harbors, published in Senate Document No. 128, 87th Congress, 2nd Session. That allocation was derived from preliminary 1960 data. The actual costs of constructing Del Valle Dam were more than twice original 1960 estimates. By resolution of the Committee on Public Works of the United States Senate, adopted January 26, 1967, the Board of Engineers for Rivers and Harbors was directed to review Senate Document No. 128 to determine if the federal contribution should be modified.

The South Pacific Division, Corps of Engineers, released a public notice, February 9, 1973, on its review. The District Engineer found that modification of the contribution was justified because of a substantial increase of costs and

because the economic patterns of development in the flood plain had changed from the projection shown in Senate Document No. 128. As a result, the District Engineer recommended that the federal contribution of \$4,856,000 be increased by \$570,000. As of March 15, 1973, this matter was under review by the Board of Engineers for Rivers and Harbors.

Previous Department Derivation

The allocation contained in Senate Document No. 128 was not considered by the Department to be adequate for administering the water supply contracts since project costs and recreation benefits were significantly underestimated therein. The Department's preliminary derivation of allocation percentages was prepared in 1966 and described in Bulletin 153-67, "Allocations of Costs Among Purposes of the California State Water Project", December 1966. However, this derivation was not reported to the Legislature under Davis-Dolwig Act procedures since construction was then under way.

The Department's preliminary 1966 derivation must be updated for the following considerations:

- ° Annual flood control benefits as reevaluated in the Corps of Engineers' recent review are over twice the \$240,000 originally estimated.
- ° Recreation and enhancement benefits recently have been reevaluated by the Department of Parks and Recreation and are about one-half those used in the Department's preliminary allocation. Estimates of recreation use were reduced quite significantly (maximum annual recreation use was reduced from 3,370,000 recreation days to 1,475,000 recreation days). However, unit benefits were increased from \$1.70 per recreation day to \$1.97 per recreation day.
- ° Since Del Valle Dam is complete,

joint capital costs are now known and estimates of other costs now can be made on a more accurate basis.

- ° The interest rate used in the preliminary allocation was 3.7 percent. The project interest rate, which is determined by the average interest costs of bonds sold to finance project construction, is presently 4.457 percent and will probably stabilize at about 4.5 percent in the future.

Del Valle Benefits

Total direct benefits of Del Valle are estimated to be equivalent to \$2,682,000 annually.

Water Supply Benefits. Del Valle water supply benefits are herein measured by the estimated costs of the least expensive single-purpose means of accomplishing the same water supply results as obtained from operation of Lake Del Valle storage. Such means would be a combination of the following, with estimated costs as shown in Table 7.

(1) *Enlargement of South Bay Aqueduct to convey project water from the Delta to Arroyo Del Valle on demand-- thus eliminating the need for Lake Del Valle regulatory storage capacity, as well as the Del Valle Pumping Plant and Branch Pipeline.* The Project is obligated to deliver to the South Bay contractors a maximum monthly demand of 11 percent of the annual demand. The original design capacity of aqueduct reaches to Arroyo Del Valle is 300 cubic feet per second, based on continuous flow (8.33 percent of the annual demand per month). The required increase of design capacity would amount to about 90 cubic feet per second for reaches from the Delta through the South Bay Pumping Plant, decreasing to about 62 cubic feet per second immediately up-aqueduct from Arroyo Del Valle.

(2) *Provision for a substitute source of emergency supply in the*

vicinity of Del Valle. There has been insufficient operating experience to evaluate the frequency of need for this aspect of Del Valle storage -- current estimates include an allowance of \$150,000 annually. Del Valle storage was used in the summer of 1972 to improve water quality in the South Bay Aqueduct when salt water invaded the Sacramento-San Joaquin Delta with failure of the Andrus Island Levee. Possible sources of emergency supply could include short-term purchases from the City of San Francisco's Hetch-Hetchy Aqueduct which passes under Lake Del Valle.

(3) Develop additional yield in project conservation facilities to provide an additional supply of about 6,000 acre-feet annually to replace local Arroyo Del Valle runoff which is conserved in Lake Del Valle. Conserved local runoff is used primarily to recharge downstream ground water basins. Under the alternative means, the additional supply would be developed in project conservation facilities at an overall cost of about \$11.30 per acre-foot and would be conveyed from the Delta to Arroyo Del Valle during offpeak periods at a cost of about \$7.60 per acre-foot.

TABLE 7: DEL VALLE ALTERNATIVE WATER SUPPLY COSTS

Item	:Equal Annual Equivalent Costs(a)		
	: Capital :	OMP&R :	Totals
Increase aqueduct capacity to convey peak deliveries from the Delta:			
Delta thru Bethany Forebay (90 cubic feet per second)	\$ 5,100	\$ 49,500	\$ 54,600
South Bay Pumping Plant (90 cubic feet per second)	55,100	207,000	262,100
South Bay Pumping Plant thru Patterson Reservoir (86 cubic feet per second)	102,900	20,000	122,900
Patterson Reservoir to Arroyo Del Valle (62 cubic feet per second)	31,000	18,300	49,300
Provide for substitute means of obtaining an emergency supply in lieu of Del Valle storage	-	150,000	150,000
Develop additional project yield in lieu of local yield from Arroyo Del Valle	55,000	12,800	67,800
Convey additional project yield in off-peak aqueduct capacity from Delta to Arroyo Del Valle	-	45,600	45,600
SUBTOTAL	\$249,100	\$503,200	\$752,300
Delete Del Valle Pumping Plant and Branch Pipeline	\$239,000	\$ 34,200	\$273,200
TOTAL	\$ 10,100	\$469,000	\$479,100

a) At 4.5 percent interest, for the 50-year period 1970-2019.

Flood Control Benefits. Flood control benefits due to operation of Lake Del Valle are estimated as the average annual decrease of flood damages and increase of land values in downstream areas. Annual flood control benefits are based on the Corps of Engineers' "Review Report on Cost Allocation for Del Valle Reservoir, Alameda Creek Project, California". However, those benefits were calculated on a federal

interest rate of 2-5/8 percent and are adjusted herein to reflect project interest rate of 4.5 percent.

Recreation and Enhancement Benefit Recreation areas for Lake Del Valle are depicted on Figure 1. Onshore recreation developments are listed in Table 8, together with the type and number of units, year of completion, and estimated costs.

TABLE 8: DEL VALLE RECREATION AND ENHANCEMENT DEVELOPMENTS AND SPECIFIC COSTS (a)

Year Completed and Recreation Area	Number of Units		Number of Parking Stalls			Boat Ramp	Specific Costs (\$1,000) (b)	
	Camp	Picnic	Day Use	Car and Trailer	Lanes	First	EAE (c)	
1970:							190	9
Arroyo Mocho		10		170	4			
Rocky Ridge	50 (d)	50						
1973:							1,700	72
Arroyo Mocho		140	600					
Rocky Ridge	65		100					
1974:							1,217	50
Rocky Ridge		120	300					
Cedar Mountain (e)								
1975:							283	11
Rocky Ridge								
Cedar Mountain (f)								
1980 (g)							910	28
SUBTOTAL	65	320	1,000	170	4		4,300	170
Costs of acquiring associated recreation lands.....							550	32
TOTAL CAPITAL COSTS.....							4,850	202
TOTAL OMP&R COSTS.....							-	378
TOTAL COSTS.....							4,850	580

- a) Costs through 1975 to be funded by the Department of Navigation and Ocean Development from the Harbors and Watercraft Revolving Fund and by the Department of Parks and Recreation from the State Recreation and Fish and Wildlife Enhancement Fund. 1980 costs will be financed by East Bay Regional Park District.
- b) These costs include those for access roads, water and sanitary systems, other utilities, and riding and hiking trails.
- c) At 4.5 percent interest for the 50-year period 1970-2019.
- d) Temporary camp units are included in 1973 figure.
- e) Administrative facility.
- f) Equestrian center.
- g) Continuing development at the above areas, together with development of Ardilla Boat-in Day Use Area and primitive camps at Venados, Mendenhall, Conejo, and Punta Vaca Recreation Areas.

Projected recreation use and associated benefits of Del Valle Dam and Lake Del Valle are based on 1972 studies by the Department of Parks and Recreation. These studies reflect current projections of on-shore expenditures and an updated recreation plan and supersede information shown in the Department's Bulletin 117-2, "Del Valle Reservoir Recreation Development Plan", December 1966.

Unit recreation values determined by the Department of Parks and Recreation vary from \$0.50 to \$2.50 per recreation day. (A recreation day is the visit of one person to a recreation area for any part of one day.) Two factors are rated in the determination: (1) variety and quality of recreation (type of recreation activity; quality of experience; and quality of development, operation, and maintenance of the facilities and area), and (2) esthetic quality of the site. Types of recreation activity evaluated include boating, bathing, camping, fishing, picnicking, enjoyment and/or harvesting of wildlife, water skiing, riding-hiking-cycling, and scientific-historic appreciation. Esthetic qualities evaluated include water surface fluctuations, geologic-topographic factors, vegetative cover, climate, and other environmental influences.

The Department of Parks and Recreation's rating procedure assigns up to 100 points each for (1) the variety and recreation quality factor and (2) the esthetic quality factor -- for a maximum of 200 points. The points assigned are directly convertible to cents. The value of a recreation day is obtained by adding the rated value for the two factors to the \$0.50 minimum. Thus, the maximum possible value resulting from this procedure is \$2.50 per recreation day.

The unit value for Del Valle Lake is determined to be \$1.97 per recreation day.

Projected recreation use attributable to Del Valle and estimated recreation and enhancement benefits are summarized in Table 9.

Del Valle Costs

The total project costs of Del Valle features are summarized in Table 10 in terms of both first costs (capital costs, exclusive of interest during construction) and equal annual equivalent costs. Equivalent costs total \$2,139,000 annually. Also shown in Table 10 are corresponding estimate of single-purpose and separable costs for the respective purposes.

TABLE 9: DEL VALLE RECREATION AND ENHANCEMENT BENEFITS
(all units in thousands)

Decade	Use (Recreation Days)		Increase Due to Del Valle Dam and Lake Del Valle	
	Without :Lake Del Valle	With :Lake Del Valle	Use :(Recreation Days)	Benefits :(Dollars) (a)
1970-79	93	5,599	5,506	10,847
1980-89	106	9,408	9,302	18,325
1990-99	119	10,909	10,790	21,256
2000-09	132	12,475	12,343	24,316
2010-19	145	14,060	13,915	27,413
TOTAL	595	52,451	51,856	102,157
Equal Annual Equivalent Benefits.....				1,675 (b)

a) Based on a unit value of \$1.97 per recreation day.
b) At 4.5 percent interest for the 50-year period 1970-2019.

TABLE 10: DEL VALLE

Type of Costs and Project Features	: Multiple- : purpose : (77,000AF : Capacity)	: Single-Purpose (a)	
		: Flood : Control : (48,000 AF)	: Recreation : and : Enhancement : (34,000 AF)
	(1)	(2)	(3)
FIRST COSTS:			
<u>Multiple-purpose Features</u>			
Del Valle Dam & Lake Del Valle	\$15,730,000	\$12,620,000	\$11,570,000
Reservoir Clearing	500,000	450,000	430,000
County Road Relocation	1,290,000	1,070,000	1,290,000
Hetch Hetchy Aqueduct	880,000	880,000	880,000
Lands and Easements	720,000	540,000	430,000
General Project Access Road	530,000	530,000	530,000
General	6,490,000	5,420,000	5,130,000
Subtotal	\$26,140,000	\$21,510,000	\$20,260,000
	(f)		
<u>Specific Recreation Features</u>			
Onshore Facilities	\$ 4,300,000	\$ 0	\$ 4,300,000
Recreation Lands	550,000	0	550,000
Subtotal	\$ 4,850,000	\$ 0	\$ 4,850,000
TOTAL, FIRST COSTS	\$30,990,000	\$21,510,000	\$25,110,000
Present Worth of Total First Costs to 1969 at 4.5%	\$32,474,000	\$23,442,000	\$26,063,000
EQUAL ANNUAL EQUIVALENT COSTS: (e)			
Capital costs	\$ 1,643,000	\$ 1,186,000	\$ 1,319,000
OMP&R Costs:			
Multiple-purpose Features	\$ 118,000	\$ 80,000	\$ 82,000
Specific Recreation Features	378,000	0	378,000
Subtotal, OMP&R Costs	\$ 496,000	\$ 80,000	\$ 460,000
TOTAL EQUAL ANNUAL EQUIVALENT COSTS	\$ 2,139,000	\$ 1,266,000	\$ 1,779,000
a) Costs of single-purpose alternative water supply project are not applicable to this table. Costs are detailed in Table 7.			
b) Column 1 less Column 4.			
c) Column 1 less Column 5.			

Water Supply Alternative Costs.
The least expensive alternative means of providing the same water supply benefits was previously discussed in regard to water supply benefits.

Flood Control Alternative Costs.
The least expensive alternative

means of providing the same flood control benefits are estimated to be a single-purpose dam and reservoir at the Del Valle site, with a gross storage capacity of 48,000 acre-feet. The single-purpose facility would not include recreation features.

COSTS, BY FEATURE

Multiple-purpose, but without:			Separable Costs		
Flood Control (40,000 AF)	Water Supply (63,000 AF)	Recreation and Enhancement (77,000 AF)	Flood Control (b)	Water Supply (c)	Recreation and Enhancement (d)
(4)	(5)	(6)	(7)	(8)	(9)
\$13,450,000	\$13,150,000	\$15,730,000	\$2,280,000	\$2,580,000	\$ 0
440,000	480,000	500,000	60,000	20,000	0
1,290,000	1,290,000	1,070,000	0	0	220,000
880,000	880,000	880,000	0	0	0
480,000	640,000	720,000	240,000	80,000	0
530,000	530,000	530,000	0	0	0
5,670,000	5,710,000	6,410,000	820,000	780,000	80,000
\$22,740,000	\$22,680,000	\$25,840,000	\$3,400,000	\$3,460,000	\$ 300,000
\$ 4,300,000	\$ 4,300,000	\$ 0	\$ 0	\$ 0	\$4,300,000
550,000	550,000	0	0	0	550,000
\$ 4,850,000	\$ 4,850,000	\$ 0	\$ 0	\$ 0	\$4,850,000
\$27,590,000	\$27,530,000	\$25,840,000	\$3,400,000	\$3,460,000	\$5,150,000
\$28,762,000	\$28,695,000	\$28,157,000	\$3,712,000	\$3,779,000	\$4,317,000
\$ 1,455,000	\$ 1,452,000	\$ 1,425,000	\$ 188,000	\$ 191,000	\$ 218,000
\$ 95,000	\$ 105,000	\$ 118,000	\$ 23,000	\$ 13,000	\$ 0
378,000	378,000	0	0	0	378,000
\$ 473,000	\$ 483,000	\$ 118,000	\$ 23,000	\$ 13,000	\$ 378,000
\$ 1,928,000	\$ 1,935,000	\$ 1,543,000	\$ 211,000	\$ 204,000	\$ 596,000

d) Column 1 less Column 6.

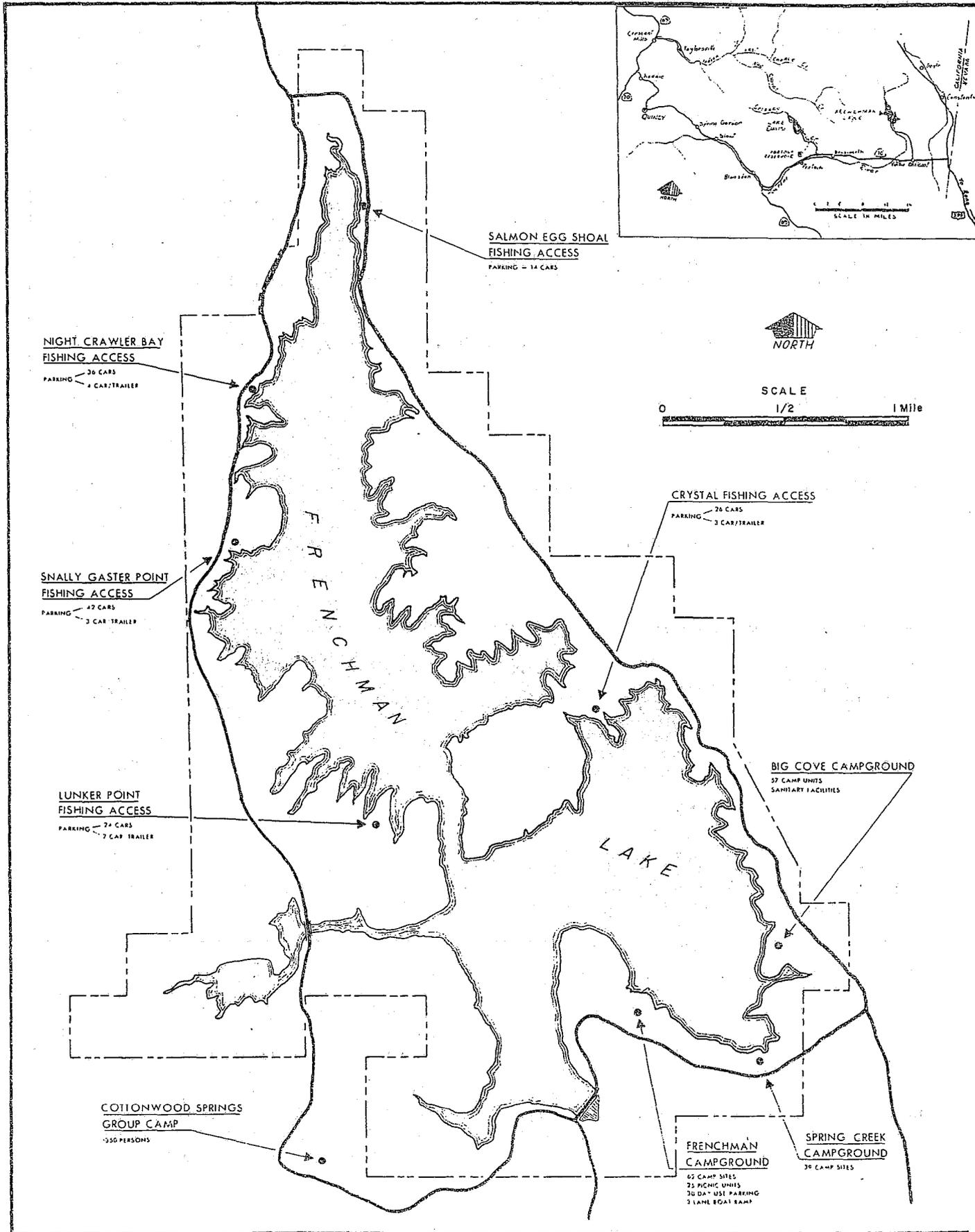
e) At 4.5% interest for the 50-year period of analysis 1970 thru 2019.

f) The \$12,550,000 allocation to recreation and enhancement, as shown in Table 1, is equal to 48 percent of these costs.

Recreation Alternative Costs. The least expensive means of providing the same recreation and enhancement benefits are estimated to be a single-purpose reservoir at the Del Valle site, with a gross storage capacity of 34,000 acre-feet, together with essentially the same recreation features as for the complete facility.

Water Supply Separable Costs. Del Valle costs which can be directly associated with water supply are estimated as the differences between the total project costs of the complete facility and the estimated costs of a hypothetical facility sized so as to provide the same flood control and recreation benefits as the complete facility.

FIGURE 2: FRENCHMAN LAKE LAND USE AND GENERAL DEVELOPMENT PLAN



The hypothetical facility would include a 63,000-acre-foot reservoir with essentially the same recreation facilities as the complete facility.

Flood Control Separable Costs. Del Valle costs which can be directly associated with flood control are estimated as differences between the total project costs of the complete facility and the estimated costs of a hypothetical facility sized so as to provide the same water supply and recreation benefits as the complete facility. The hypothetical facility would include a 40,000-acre-foot reservoir and

essentially the same recreation features as the complete facility.

Recreation Separable Costs. Del Valle costs which can be directly associated with recreation and enhancement are estimated to be the differences between the total estimated costs of the complete facility and the estimated costs of a hypothetical facility which would exclude the recreation and enhancement features of the complete facility summarized in Table 8. Lake Del Valle, sized only for water supply and flood control, would be of the same capacity as the complete facility.

Revised Frenchman Derivation

FRENCHMAN LAKE is being operated for water supply and recreation and enhancement. The 55,500-acre-foot reservoir is formed by Frenchman Dam on the Little Last Chance Creek, about 30 miles northeast of Portola in Plumas County.

Construction of the Dam began in August 1959, and ended in October 1961 -- the first completed facility of the State Water Project.

Water operations began with reservoir releases late March 1962. Recreation use also began during 1962. To date, water for agricultural uses has been provided from the Lake to the Little Last Chance Creek Water District under a series of annual contracts.

Previous Department Derivation

The derivation of allocation percentages for Frenchman was first reported to the Legislature, under Davis-Dolwig Act procedures, in Bulletin 153-67, "Allocations of Costs Among Purposes of the California State Water Project", December 1966, and was approved by California Statutes of 1968, Chapter 897. That derivation was originally prepared in 1963 and indicated a 50-50 allocation of both joint capital costs and joint annual

operating costs between (1) water supply and (2) recreation and enhancement.

The above derivation has grown obsolete and is in need of revision for the following factors:

- Since 1963, projections of water supply benefits that will be realized from the operation of Frenchman Lake have continued to decrease with the prevailing "cost-price" squeeze on the agricultural economy. The 1963 projection was based on economic conditions prevailing during 1956. Since that time, land values, prices received, crop yields, and interest rates on farm investments have changed significantly.
- Recreation use, as indicated by actual recreation days recorded during the first 11 years of operation, is significantly greater than 1963 projections. However, the estimated unit value had decreased from \$2.40 per recreation day, used in the 1963 derivation, to \$2.06 per recreation day due to revised procedures.
- Original 1956 cost estimates, which were used in the 1963 derivation, were significantly lower than the actual costs incurred to date. Also, better cost

estimates of the recreation facilities are now available.

- ° In the 1963 derivation, the interest rates used were 3.5 percent for costs and 4.0 percent for benefits. The project interest rate is presently 4.457 percent and will probably stabilize at about 4.5 percent in the future.

Frenchman Benefits

Total direct benefits of Frenchman are estimated to be equivalent to \$690,900 annually.

Water Supply Benefits. These benefits are estimated as the increase in net returns from farming expected to result from operation of Frenchman Lake. In calculating net returns, all farm production costs are deducted from gross farm income including the costs of farm management but excluding costs of the new water supply and return on the farmers' land investment.

The estimate of net returns from farming with operation of Frenchman Lake is based on the total water supply that the facility would have developed if it had been in operation during the historical 50-year period 1912 through 1961. Studies

indicate that the Lake would support an average annual supply over the 50-year period of about 10,000 acre-feet -- approximately 3,000 acre-feet above the presently adjudicated supply. The results of these water operation studies are used to project annual irrigated acreages and, in turn, net agricultural income. Full use of the total supply to be provided by operation of the Lake is projected to occur by the end of the second decade after initial operation.

The estimate of net returns from farming without operation of the facility is based on estimates of acreages that would have been beneficially irrigated by natural flows of Little Last Chance Creek during the period 1912 through 1961. The farming practices assumed are those currently used in Sierra Valley.

The benefits due to the planned operation of Frenchman Lake must be measured at the Dam -- not at the farmers' headgates -- to place all factors influencing the derivation of allocation percentages on a common basis. Thus, the "nonproject" costs of conveyance, distribution, and drainage systems necessary for the service of water from the Dam to the farmers' headgates are deducted from the value of benefits at the farm, as shown in Table 11.

TABLE 11: FRENCHMAN WATER SUPPLY BENEFITS

(in thousands of dollars)

Decade	Benefits measured at			Benefits Due to Operation of Frenchman Lake, Measured at the Dam
	With Operation of Frenchman Lake	Without Operation of Frenchman Lake	Conveyance, Distribution, and Drainage System Costs	
	(1)	(2)	(3)	(1) - (2) - (3)
1962-71	828	298	165	365
1972-81	884	350	175	359
1982-91	912	385	185	342
1992-01	912	385	210	317
2002-11	912	385	205	322
TOTALS	4,448	1,803	940	1,705
Equal annual equivalent benefits				35.8

Recreation and Enhancement Benefits. Recreation areas for Frenchman Lake are depicted on Figure 2. Onshore recreation developments are listed in Table 12, together with type and number of units, year of completion, and estimated costs.

Projected recreation use and associated benefits of Frenchman Dam and Lake are based on studies conducted during 1972 and 1973 by the Department of Parks and Recreation. These studies reflect current projections

of onshore expenditures and an 11-year record of recreation use at the Lake and supersede information shown in the Department's Bulletin 153-67.

Procedures used by the Department of Parks and Recreation for determining the unit value of recreation use were previously described for Lake Del Valle. Under these procedures, the unit value for Frenchman Lake is determined to be \$2.06 per recreation day.

TABLE 12: FRENCHMAN RECREATION AND ENHANCEMENT DEVELOPMENTS AND SPECIFIC COSTS(a)

Year Completed and Recreation Area	Number of Units		Number of Parking Stalls			Boat Ramp	Cost (\$1,000) (b)	
	Camp	Picnic	Day Use	Car and Trailer	Lanes	First	EAE (c)	
1963:							294	13.6
Spring Creek (d)	39							
Frenchman (d)	62	25	30	150	3			
1970-71:							200	6.7
Cottonwood Spring Group (d)								
1973:							602	18.0
Big Cove (d)	57							
Crystal (e)			26	3				
Salmon Egg Shoal (e)			14					
Night Crawler Bay (e)			36	4				
Snallygaster Pt. (e)			42	3				
Lunker Point (e)			24	2				
1981	(Continuing development, as required)						250	5.2
1991	(Continuing development, as required)						250	3.4
2001	(Continuing development, as required)						250	2.2
SUBTOTAL	158	25	172	162	3		1,846	49.1
Costs of acquiring associated recreation lands.....							56	3.0
TOTAL CAPITAL COSTS.....							1,902	52.1
TOTAL OMP&R COSTS.....							-	127.3
TOTAL COSTS.....							1,902	179.4

- a) Financing of costs incurred in 1963, from the General Fund; 1970-71, by the U. S. Forest Service; 1973, by the Department of Parks and Recreation from the State Recreation and Fish and Wildlife Enhancement Fund; and 1981, 1991, and 2001, by the U. S. Forest Service.
- b) Includes the costs of access roads, water and sanitary systems, gravel walks, grading and planting, and vehicle control barriers.
- c) At 4.5 percent interest for the 50-year period 1962-2011.
- d) Campground.
- e) Fishing Access Site.

Projected recreation use attributable to Frenchman and estimated recreation and enhancement benefits are summarized in Table 13.

Frenchman Costs

The estimated actual costs in Frenchman features are summarized in Table 14 in terms of both first costs and equal annual equivalent costs. Equivalent costs total \$387,500 annually. Also shown are the corresponding estimates of single-purpose and separable costs for the respective purposes.

Water Supply Alternative Costs. The least expensive alternative means of providing the same water supply benefits as the complete facility are estimated to be a single-purpose reservoir at the Frenchman site, with a gross storage capacity of 30,000 acre-feet.

Recreation Alternative Costs. The least expensive alternative means

of providing the same recreation and enhancement benefits as the complete facility are estimated to be a single-purpose reservoir at the Frenchman site, with a gross storage capacity of 30,000 acre-feet, together with essentially the same recreation features as the complete facility.

Water Supply Separable Costs. Frenchman costs which can be directly associated with water supply are estimated as the differences between the total project costs of the complete facility and the estimated costs of the alternative single-purpose recreation and enhancement facility.

Recreation Separable Costs. Frenchman costs which can be directly associated with recreation are estimated as the differences between the total project costs of the complete facility and the estimated costs of the alternative single-purpose water supply facility.

TABLE 13: FRENCHMAN RECREATION AND ENHANCEMENT BENEFITS

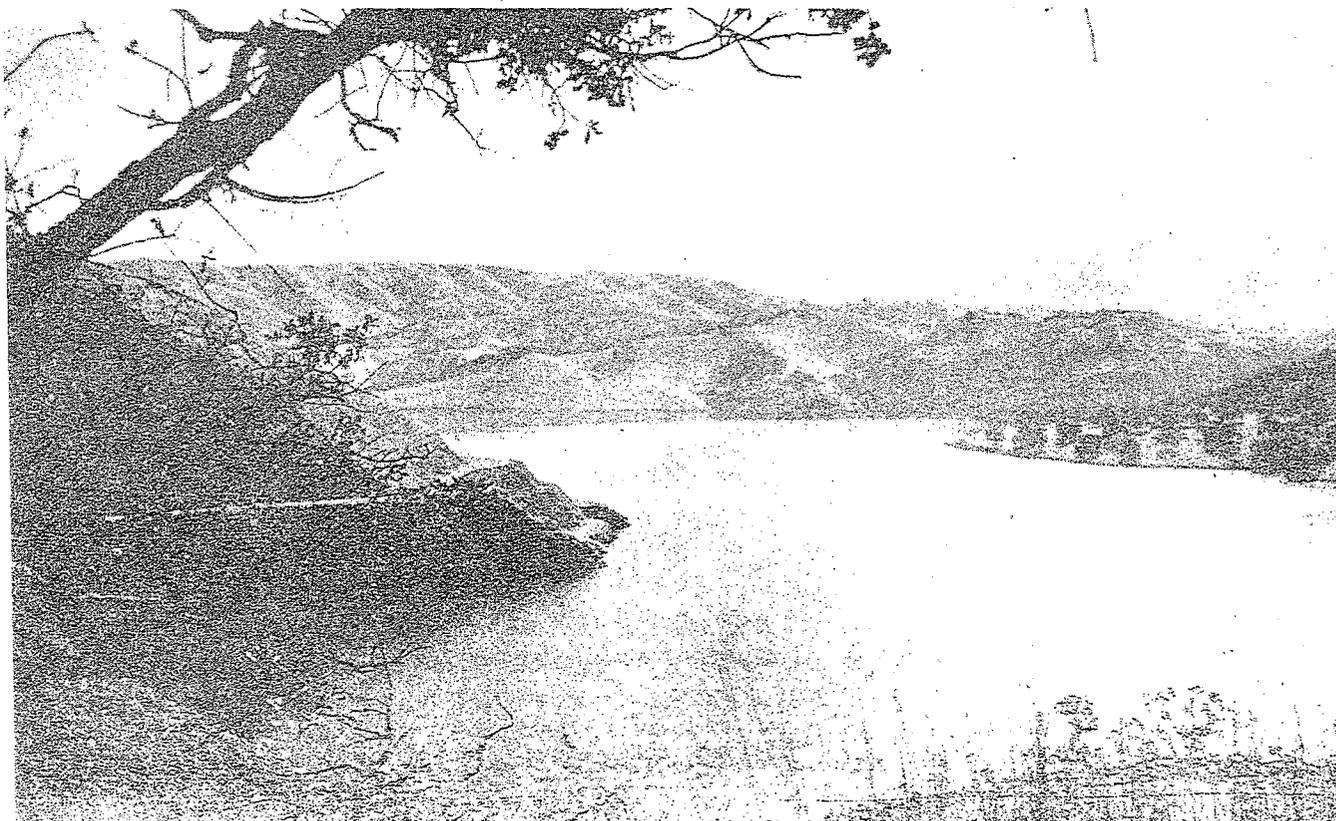
(all units in thousands)

Decade	Use (Recreation Days)		Increase Due to Frenchman Dam and Lake	
	Without Frenchman Lake	With Frenchman Lake	Use (Recreation Days)	Benefits (Dollars)
1962-71	17.4	3,043.6	3,026.2	6,234.0
1972-81	26.6	2,669.9	2,643.3	5,445.2
1982-91	42.9	3,486.3	3,443.4	7,093.4
1992-01	56.5	4,231.2	4,174.7	8,599.9
2002-11	66.5	4,860.5	4,794.0	9,875.6
TOTAL	209.9	18,291.5	18,081.6	37,248.1
Equal Annual Equivalent Benefits.....				655.1 ^(b)

a) Based on a unit value of \$2.06 per recreation day
b) At 4.5 percent interest for the 50-year period 1962-2011.

TABLE 14: FRENCHMAN COSTS, BY FEATURE

Type of Costs and Project Features	Multiple- purpose (55,500 AF Capacity)	Single-purpose		Separable Costs	
		Water Supply (30,000 AF)	Recreation and Enhancement (30,000 AF)	Water Supply (a)	Recreation and Enhancement (b)
	(1)	(2)	(3)	(4)	(5)
FIRST COSTS:					
<u>Joint Features</u>					
Dam and Appurtenances	\$2,523,000	\$1,808,000	\$1,847,000	\$676,000	\$ 715,000
Lands, Easements, Reloca- tions, and Rights-of-way	696,000	304,000	684,000	12,000	392,000
Subtotal	\$3,219,000	\$2,112,000	\$2,531,000	\$688,000	\$1,107,000
	(d)				
<u>Specific Recreation Features</u>					
Onshore Facilities	\$1,846,000	\$ 0	\$1,846,000	\$ 0	\$1,846,000
Recreation Lands	56,000	0	56,000	0	56,000
Subtotal	\$1,902,000	\$ 0	\$1,902,000	\$ 0	\$1,902,000
TOTAL, FIRST COSTS	\$5,121,000	\$2,112,000	\$4,433,000	\$688,000	\$3,009,000
Present Worth of Total First Costs to 1961 at 4.5%	\$4,318,000	\$2,153,000	\$3,611,000	\$707,000	\$2,165,000
EQUAL ANNUAL EQUIVALENT COSTS: (c)					
Capital Costs	\$ 218,500	\$ 108,900	\$ 182,700	\$ 35,800	\$ 109,600
<u>OMP&R Costs:</u>					
Joint Features	\$ 41,700	\$ 41,700	\$ 41,700	\$ 0	\$ 0
Special Recreation Features	127,300	0	127,300	0	127,300
Subtotal, OMP&R Costs	\$ 169,000	\$ 41,700	\$ 169,000	\$ 0	\$ 127,300
TOTAL EQUAL ANNUAL EQUIVALENT COSTS	\$ 387,500	\$ 150,600	\$ 351,700	\$ 35,800	\$ 236,900
a) Column 1 less Column 3.					
b) Column 1 less Column 2.					
c) For the 50-year period of analysis 1962 thru 2011, at 4.5% interest.					
d) The \$2,527,000 allocation to recreation and enhancement, as shown in Table 1, is equal to 78.5 percent of these costs.					



COMMENTS

BY

THE DEPARTMENT OF NAVIGATION AND OCEAN DEVELOPMENT,

THE DEPARTMENT OF PARKS AND RECREATION,

AND

THE DEPARTMENT OF FISH AND GAME

NOTED: The Resources Agency of California
W.R.G.
MAR 23 1973

Memorandum

To : Honorable William R. Gianelli, Director
Department of Water Resources
Resources Building

Bill

Date : March 19, 1973

Subject: Bulletin 132-73, Appendix
D - Cost Allocations to
Recreation, Fish and
Wildlife Enhancement,
State Water Project

From : Director of Navigation and Ocean Development

In accordance with the Water Code, Section 11912, as amended by California Statute of 1970, Chapter 1428, you requested the Department of Navigation and Ocean Development to comment on the above report which presents State Water Project cost allocations to recreation, fish and wildlife enhancement.

The draft of Bulletin 132-73, Appendix D, was reviewed by this department. We have no comments except to note with pleasure that the tabulation of some of the cost allocations are in a much more comprehensive form.


J. E. BENNETT
Director

Memorandum

To : Honorable William R. Gianelli, Director
Department of Water Resources
Room 1115-1
Resources Building

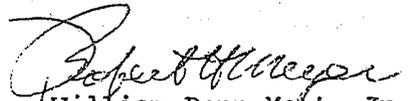
Date : April 12, 1973

Subject : Cost Allocation to
Recreation and Fish
and Wildlife Enhancement,
State Water Project

From : Department of Parks and Recreation

Your memorandum of March 28, 1973 requests our department to review and comment on Appendix D, Bulletin 132-73, "The California State Water Project in 1971".

Fortunately, your personnel have been working with members of my staff as work on the Bulletin progresses throughout the year. Our people have been able to reach agreement on recreation-related items entered in this year's revision.


William Penn Mott, Jr.
Director

Memorandum

To : Honorable William R. Gianelli, Director
Department of Water Resources

Date: MAR 30 1973

From : Department of Fish and Game

Subject: WP-State of California, Department of Water Resources - State Water Project -
1973 Cost Allocations to Recreation and Fish and Wildlife Enhancement

Pursuant to Water Code Section 11912, as amended by California Statutes of 1966, Chapter 27, you requested our written comments on State Water Project joint costs allocated to recreation and fish and wildlife enhancement, as reported on the review draft of Appendix D to Bulletin No. 132-73.

Appendix D presents new and revised allocations of joint project costs in the amount of \$16,725,981 for recreation and fish and wildlife enhancement. The new allocation is for Del Valle Dam and Lake Del Valle in the amount of \$15,534,518. We concur with this new allocation.

The major revision in costs is for a reallocation of Frenchman Dam and Lake. Changes in water use and recreational use have shifted the joint allocation from a 50-50 split to a 78.5 to 21.5 split, increasing the joint allocation to recreation and fish and wildlife enhancement by \$939,388. Other minor revisions and interest charges in the various State Water Project accounts result in the remaining \$252,075 increase.

We are pleased to see that a re-evaluation of Frenchman Dam was made in accordance with the schedule set forth in Bulletin No. 132-72. Should water use increase in future years, a reduction in the costs allocated to recreation, fish and wildlife enhancement would be appropriate.

The Department of Fish and Game finds no fault with the method or logic used in the cost allocation presented in the subject report for Del Valle Dam and Lake Del Valle or with the reallocation of Frenchman Dam and Lake. The values used in calculating the benefits as well as the total recreational use are acceptable to Fish and Game for both allocations presented. Therefore, we concur with the 1973 cost allocation as submitted in Bulletin No. 132-73, Appendix D.

EE Fullerton
FOR
Director