1997

California's State Water Project

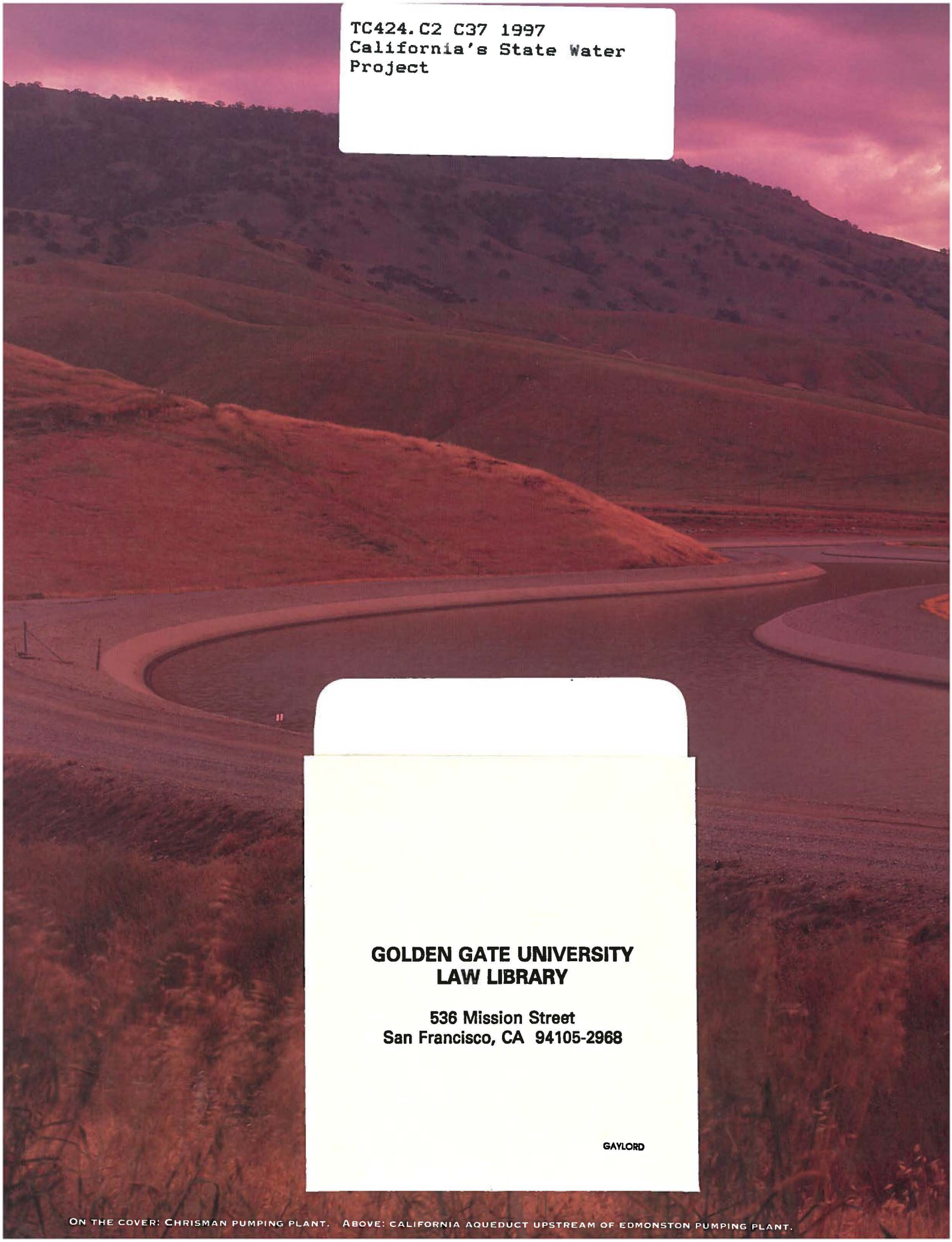
Department of Water Resources

CALIFORNIA'S

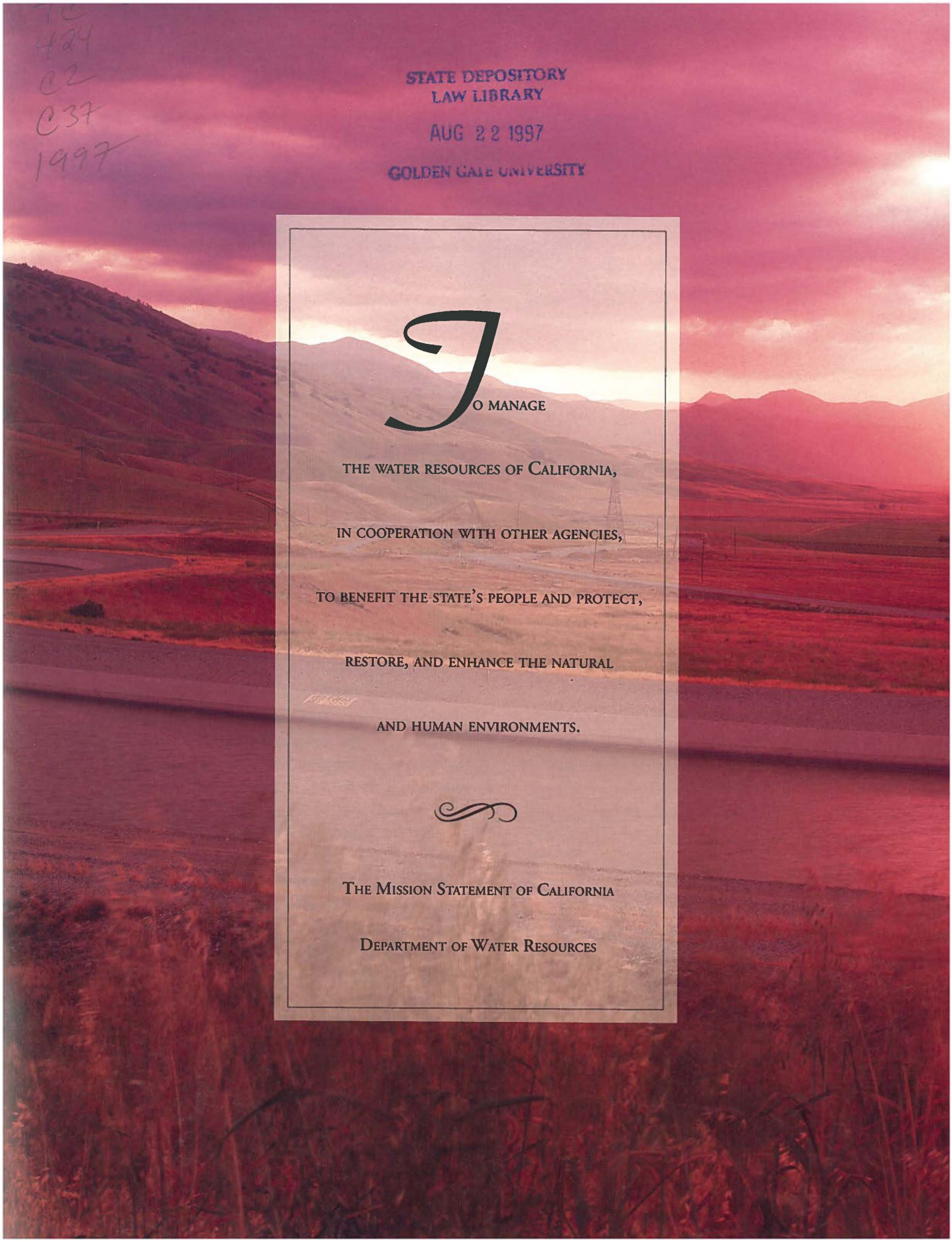
STATE WATER PROJECT

THE CALIFORNIA DEPARTMENT OF WATER RESOURCES

THE STATE WATER CONTRACTORS



ON THE COVER: CHRISMAN PUMPING PLANT. ABOVE: CALIFORNIA AQUEDUCT UPSTREAM OF EDMONSTON PUMPING PLANT.



TO MANAGE

THE WATER RESOURCES OF CALIFORNIA,

IN COOPERATION WITH OTHER AGENCIES,

TO BENEFIT THE STATE'S PEOPLE AND PROTECT,

RESTORE, AND ENHANCE THE NATURAL

AND HUMAN ENVIRONMENTS.

THE MISSION STATEMENT OF CALIFORNIA

DEPARTMENT OF WATER RESOURCES

THE CALIFORNIA STATE WATER PROJECT is a water storage and delivery system of reservoirs, aqueducts, power plants and pumping plants. It extends for more than 600 miles — two-thirds the length of California.

Planned, constructed and operated by the California Department of Water Resources, the SWP is the largest State-built, multipurpose water project in the U.S. Its main purpose is water supply — that is, to divert and store surplus water during wet periods and distribute it to service areas in Northern California, the San Francisco Bay area, the San Joaquin Valley, the Central Coast, and Southern California. Other Project purposes include flood control, power generation, recreation, fish and wildlife protection, and water quality improvement in the Sacramento-San Joaquin Delta.

California's water supply varies widely from year to year, season to season, and area to area. Sometimes floods and water shortages occur in the same year. While the wettest areas are in the north, most of California's people and irrigated lands are in the drier central and southern portions of the State. California's challenge is how best to conserve, control and deliver enough water to meet needs where and when they occur.

Following World War II, traditional water development by local and federal governments was not keeping pace with the needs of the State's expanding population. In 1951, the California Legislature authorized what is now the State Water Project. Construction began on facilities at Oroville in 1957, as the Legislature sought ways to fund the Project. In 1959, the Burns-Porter Act was passed, and in 1960 voters approved the $1.75-billion bond act to build the initial SWP facilities.

All costs for water development and delivery are repaid by the SWP water supply contractors. Costs for flood control are paid by the federal government and costs for recreation and fish and wildlife protection are paid by the State.

WATER SUPPLY - The Department has long-term contracts to supply more than 4 million acre-feet of water annually from the SWP to 29 local and regional agencies called the state water contractors. (An acre-foot is 325,851 gallons.)

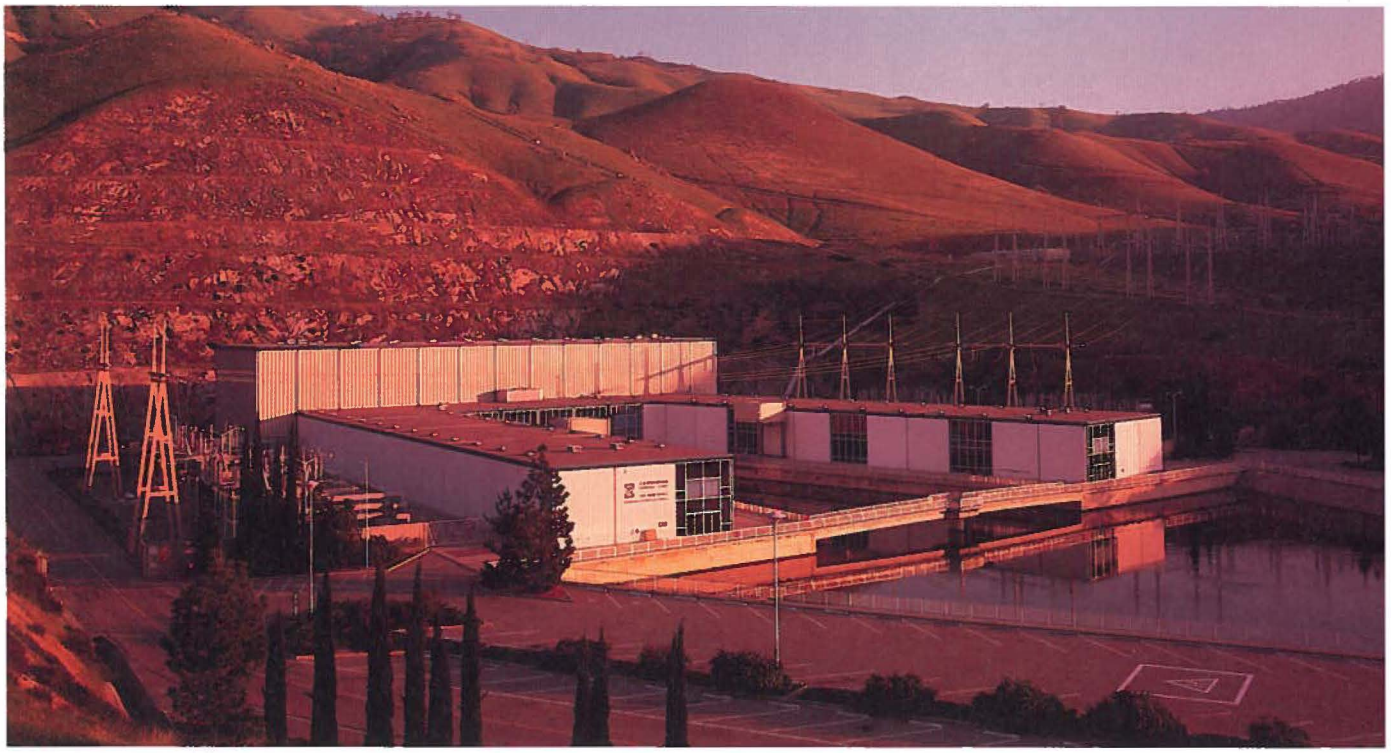
The SWP provides water to approximately 20 million Californians and about 600,000 acres of farmland, with approximately 70 percent currently going to urban users and 30 percent to agricultural users.

FLOOD CONTROL - One of the SWP's primary functions is flood control. Storage space is provided in Oroville and Del Valle lakes to capture flood flows and protect areas downstream. In Kern County an intertie diverts Kern River flood flows into the California Aqueduct.

RECREATION, FISH AND WILDLIFE - The need for more and better opportunities for water-related recreation parallels population growth. Preservation and enhancement of fish and wildlife habitat are also of critical importance. The SWP was designed and built with these needs in mind.

From the Feather River to Southern California, facilities such as marinas, trails and beaches are available to anglers, boaters, picnickers, campers, cyclists, and other visitors at Project lakes. Fishing access sites are provided along the California Aqueduct where appropriate. Each year, about five million people take advantage of recreational opportunities at SWP facilities.

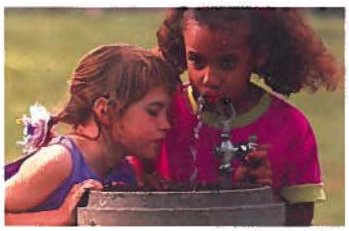
Streamflow maintenance, restricted pumping schedules, fish hatcheries, fish screens, mitigation agreements, water delivery systems, and salinity control gates are among the provisions for fish and wildlife protection. In addition, the California Department of Fish and Game operates an annual fish stocking program at most SWP reservoirs and lakes.



Power - Large quantities of electrical energy are needed to pump water long distances and over hilly terrain to serve the state water contractors. To help generate this power, eight hydroelectric power plants produce nearly half of the energy needed by the Project for pumping. The remaining energy comes from other sources, including a partially SWP-owned coal-fired plant in Nevada and from purchases and exchanges with electric utilities.

Salinity Control - The State Water Project, in cooperation with the federal Central Valley Project, is operated to limit salinity intrusion into the Sacramento-San Joaquin Delta and Suisun Marsh. This is accomplished by supplementing freshwater outflows to San Francisco Bay and limiting water exports from the Delta during specific times of the year. The projects are also operated to meet instream flow requirements in the Feather River, the Sacramento River, and Delta channels.

State water project facilities, including the Edmonston Pumping Plant (above), convey water to many destinations in California and provide recreation and drinking water for its residents.



THE FEDERAL CENTRAL VALLEY PROJECT is a large multipurpose water project. It includes 20 reservoirs, 11 power plants, 500 miles of canals, and other facilities. Its primary purpose is to provide water for irrigation throughout California's great Central Valley. Other functions include urban water supply in the Central Valley and San Francisco Bay area, water quality, flood control, power, recreation, and fish and wildlife enhancement.

Some facilities of the Central Valley Project and the California State Water Project were developed to be used jointly by both projects. These include San Luis Reservoir, O'Neill Forebay, more than 100 miles of the California Aqueduct, and related pumping and generating facilities. Costs and use of these joint facilities are shared approximately 55 percent by the State and 45 percent by the federal government.

San Luis Reservoir stores surplus water pumped from the Sacramento-San Joaquin Delta through the California Aqueduct (State) and the Delta-Mendota Canal (federal) during periods of heavy precipitation and snowmelt. Later in the year, the stored water is released for distribution to State and federal service areas.

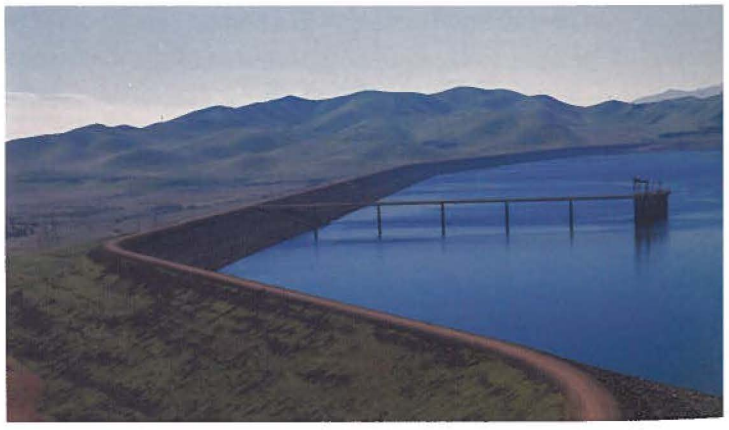
Joint and coordinated operation of facilities ensures that both projects receive an equitable share of available water and meet Delta water quality standards.

During periods of controlled flow in the Delta (summer, fall and dry years), both projects are operated so that releases from reservoirs to natural river channels are carefully balanced to satisfy:

- in-basin needs for water supply, navigation and fisheries; and
- Delta irrigation needs, salinity control standards, and other State and federal diversion requirements.

Operations for both the Central Valley Project and the State Water Project are overseen at the Joint Operations Center in Sacramento.

THE GIANELLI PUMPING-GENERATING PLANT (ABOVE) CAN BOTH PUMP WATER AND GENERATE ELECTRICITY WITH ITS EIGHT UNITS. SAN LUIS RESERVOIR (BELOW RIGHT), COMPLETED IN 1967, STORES 2,027,840 ACRE-FEET FOR STATE AND FEDERAL PROJECTS.




CENTRAL VALLEY PROJECT FACILITIES
FEDERAL/STATE JOINT-USE PUMPING PLANT
FEDERAL/STATE JOINT-USE PUMPING-GENERATING PLANT
CVP CANALS AND AQUEDUCTS
FEDERAL-STATE JOINT-USE CANAL
SWP AQUEDUCTS
CVP SERVICE AREA
CLAIRE ENGLE LAKE
SHASTA LAKE
WHISKEYTOWN RESERVOIR
REDDING
SACRAMENTO RIVER
CORNING CANAL
TEHAMA-COLUSA CANAL
FOLSOM DAM AND LAKE
CONTRA COSTA CANAL
SACRAMENTO
FOLSOM SOUTH CANAL
NEW MELONES DAM AND RESERVOIR
SAN FRANCISCO
DELTA-MENDOTA CANAL
SAN JOAQUIN RIVER
O'NEILL DAM AND FOREBAY
GIANELLI
FRIANT DAM AND MILLERTON LAKE
SAN LUIS RESERVOIR AND SISK DAM
FRIANT-KERN CANAL
LOS BANOS DAM AND RESERVOIR
LITTLE PANOCHE DAM AND RESERVOIR
BAKERSFIELD
DOS AMIGOS
SAN LUIS CANAL
COALINGA CANAL
LOS ANGELES
SAN DIEGO

TWENTY-NINE STATE WATER CONTRACTORS have signed long-term water supply contracts with the Department of Water Resources for a total Project yield of 4,172,786 acre-feet per year. Signed in the 1960s, all contracts are in effect until 2035 and are essentially uniform.

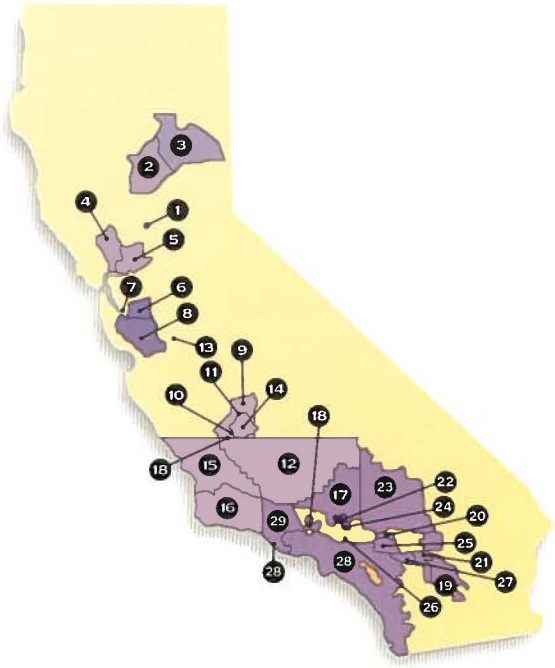
Each contract contains a schedule of the amount of water the contractor may receive annually. That amount, or the agency's annual entitlement, was designed to increase each year, with most contractors reaching maximum amounts in 1990. The names of the 29 state water contractors, the total amount of water delivered to each contractor through 1996, and each contractor's maximum annual entitlement may be found in the table on the facing page.

In most cases, contractors use SWP water to supplement local or other imported supplies. Five contractors use Project water primarily for agricultural purposes; the remaining 24 primarily for municipal purposes. The adjacent map indicates the agencies' locations and the areas receiving at least part of their water from the Project.

In December 1994, the Department and the water contractors negotiated the Monterey Agreement, which resulted in amendments to the long-term water supply contracts. Among other things, the amendments change the method the Department uses to allocate water in water-short years. Previously, agricultural contractors were required to take cuts in deliveries up to certain limits before urban contractors' deliveries were reduced. According to the Monterey Agreement, all available water is allocated annually in proportion to each contractor's annual entitlement. Agricultural contractors are no longer required to take the first cut.

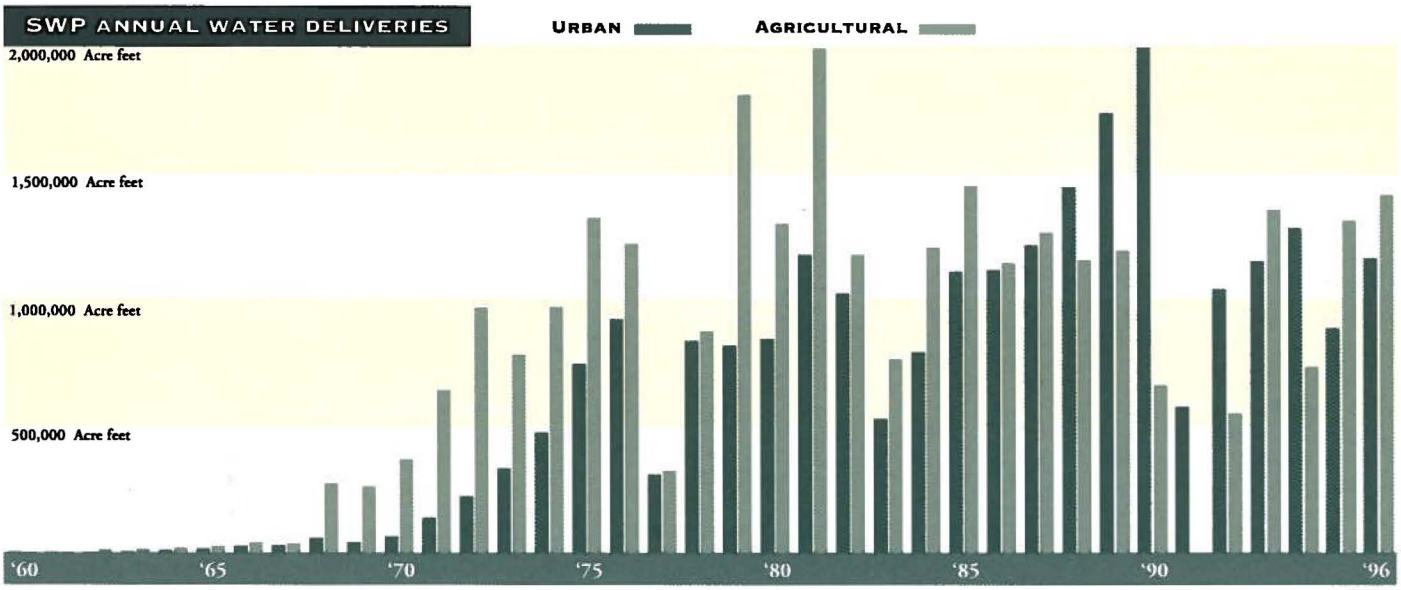
Past water deliveries through the year 1996 are indicated on the chart, "SWP Annual Water Deliveries."

WATER CONTRACTORS



Contracting Agency	Cumulative Deliveries through 1996 (acre feet)	Maximum Annual Entitlement (acre feet)
Upper Feather River		
1. City of Yuba	5,384	9,600
2. County of Butte	7,627	27,500
3. Plumas County Flood Control & Water Conservation District	9,881	2,700
Subtotal	**22,892**	**39,800**
North Bay Area		
4. Napa County Flood Control & Water Conservation District	158,022	25,000
5. Solano County Water Agency	186,636	42,000
Subtotal	**344,658**	**67,000**
South Bay Area		
6. Alameda County Flood Control & Water Conservation District, Zone 7	597,560	46,000
7. Alameda County Water District	657,453	42,000
8. Santa Clara Valley Water District	2,515,682	100,000
Subtotal	**3,770,695**	**188,000**
San Joaquin Valley		
9. County of Kings	63,822	4,000
10. Dudley Ridge Water District	1,356,631	53,370
11. Empire West Side Irrigation District	87,007	3,000
12. Kern County Water Agency	20,797,204	1,112,730
13. Oak Flat Water District	140,388	5,700
14. Tulare Lake Basin Water Storage District	2,804,398	118,500
Subtotal	**25,249,450**	**1,297,300**
Central Coast		
15. San Luis Obispo County Flood Control & Water Conservation District	0	25,000
16. Santa Barbara County Flood Control & Water Conservation District	1,240	45,486
Subtotal	**1,240**	**70,486**
Southern California		
17. Antelope Valley-East Kern Water Agency	857,244	138,400
18. Castaic Lake Water Agency	571,126	54,200
19. Coachella Valley Water District	319,070	23,100
20. Crestline-Lake Arrowhead Water Agency	29,692	5,800
21. Desert Water Agency	513,184	38,100
22. Littlerock Creek Irrigation District	12,309	2,300
23. Mojave Water Agency	126,875	50,800
24. Palmdale Water District	60,509	17,300
25. San Bernardino Valley Municipal Water District	281,139	102,600
26. San Gabriel Valley Municipal Water District	174,287	28,800
27. San Gorgonio Pass Water Agency	0	17,300
28. The Metropolitan Water District of Southern California	14,519,920	2,011,500
29. Ventura County Flood Control District	5,824	20,000
Subtotal	**17,471,179**	**2,510,200**
Total State Water Project	**46,860,114**	**4,172,786**

** Castaic Lake Water Agency acquired Devil's Den W.D. entitlement in 1992.*



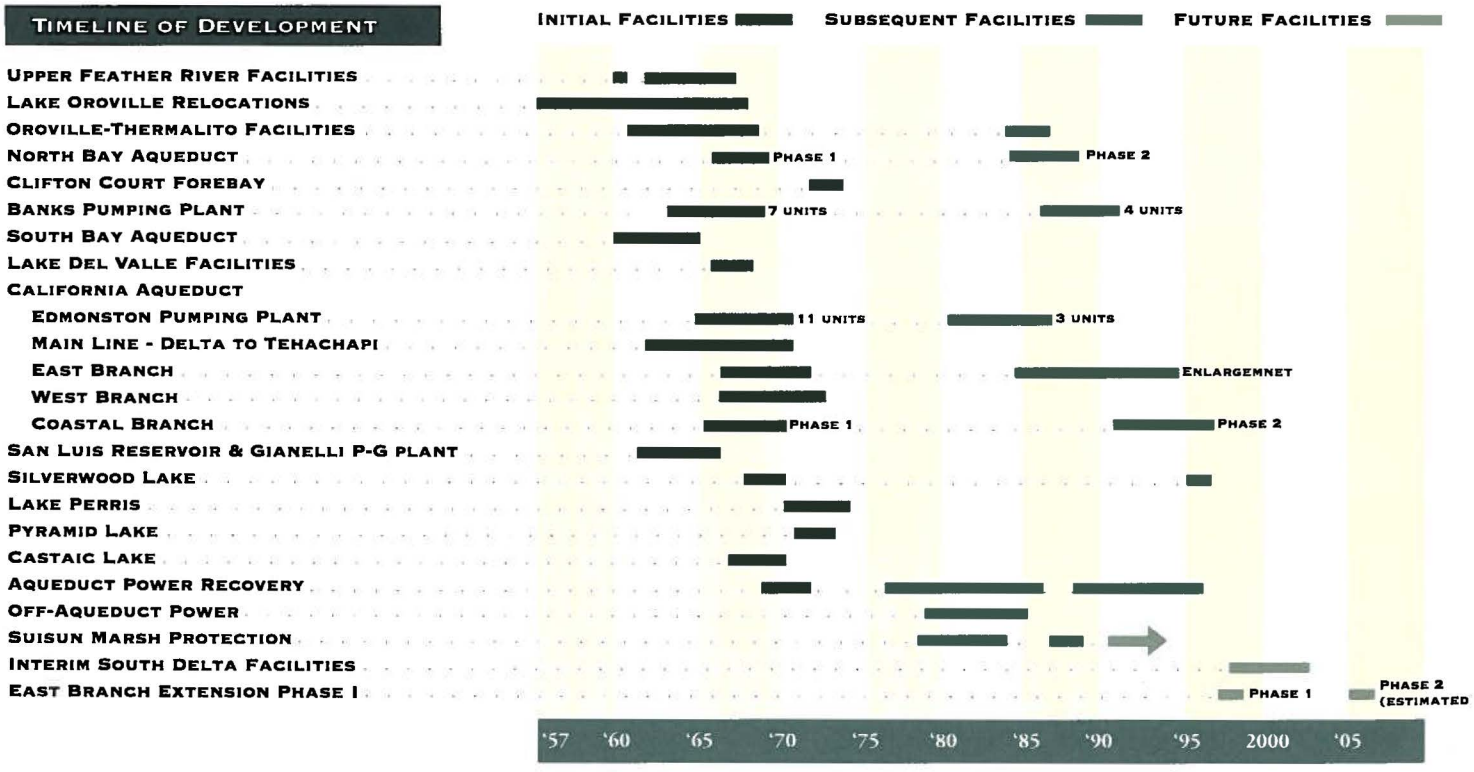
THE STATE WATER PROJECT facilities were and are being built in stages. Initial construction provided urgently needed flood control on the Feather River and delivery of water to areas of pressing need in the South Bay area.

Project construction began in 1957 with the relocation of the Western Pacific Railroad and Highway 70 around the proposed Oroville reservoir site. In 1962, the first water deliveries were made from the partially completed South Bay Aqueduct, and construction started on Oroville Dam and the joint-use San Luis facilities.

In 1963, work began on the California Aqueduct and by 1968, the SWP was able to deliver water to its contractors in the San Joaquin Valley. By 1973, the initial facilities were completed, allowing water delivery to Lake Perris, the SWP's southernmost point.

Since the late 1970s, development efforts have centered on adding pumping units that were initially deferred, building power plants where economically justified, enlarging or extending aqueduct reaches, and constructing facilities to protect water quality in the Suisun Marsh. The Marsh facilities were constructed by the Department under an agreement with U.S. Bureau of Reclamation, the Suisun Resource Conservation District, and the California Department of Fish and Game.

Since the mid-1980s, development has focused on constructing the North Bay Aqueduct to provide water to Solano and Napa counties, extending the Coastal Branch to San Luis Obispo and Santa Barbara counties, enlarging the East Branch of the California Aqueduct to provide greater capacity and operating flexibility, extending the East Branch into the San Gorgonio Pass Water Agency service area, and developing interim facilities to improve water levels and circulation in the South Delta and enhance the SWP delivery reliability.



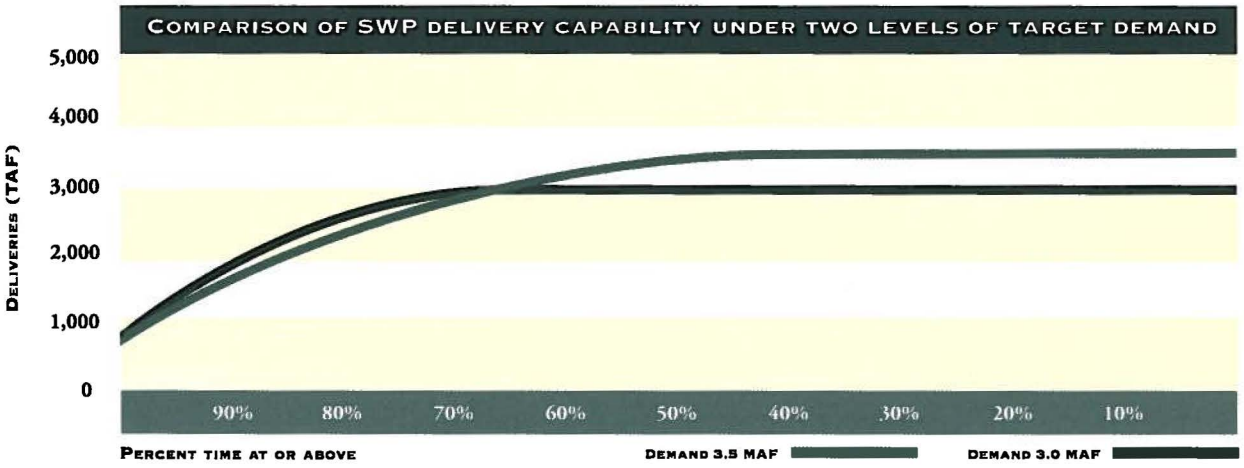
THE CAPABILITY of the State Water Project to deliver full water supply requests by the state water contractors in a given year depends on probabilities of rainfall, snowpack, runoff, water in storage, pumping capacity from the Delta, and legal constraints on SWP operation. The water supply contracts call for an ultimate yield of more than 4 million acre-feet per year.

The calculated average annual delivery during a repeat of the worst drought of this century is about 2.1 million acre-feet per year. About half of this water comes from Lake Oroville and the rest from surplus flow in the Delta, some of which is temporarily stored in San Luis Reservoir.

The chart below projects SWP delivery capability under two levels of water demands—3.0 and 3.5 million acre-feet—by SWP contractors. Based on past hydrologic records, the chart shows the mathematical probability of delivering water under those demands.

As shown on the chart, under a 3.0 million acre-feet annual demand scenario, the Project has a 70 percent chance of making full deliveries and has a 90 percent chance of delivering 2.0 million acre-feet in any given year. Similarly, under a 3.5 million acre-feet annual demand scenario, the Project has more than a 45 percent chance of making full deliveries and has more than an 85 percent chance of delivering 2.0 million acre-feet in any given year.

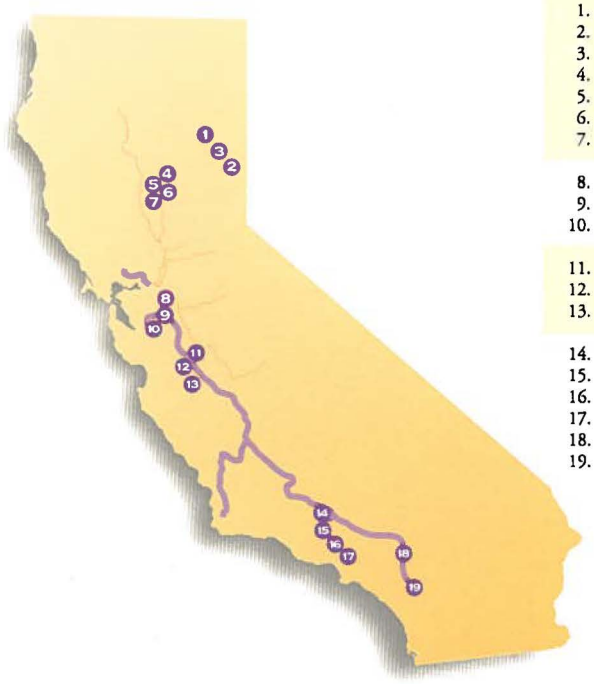
THE EAST BRANCH ENLARGEMENT (TOP) INCREASED THE AQUEDUCT'S CAPACITY FOR DELIVERIES TO SOUTHERN CALIFORNIA. COMPLETION OF THE COASTAL BRANCH BRINGS WATER TO CONTRACTORS IN CENTRAL CALIFORNIA.



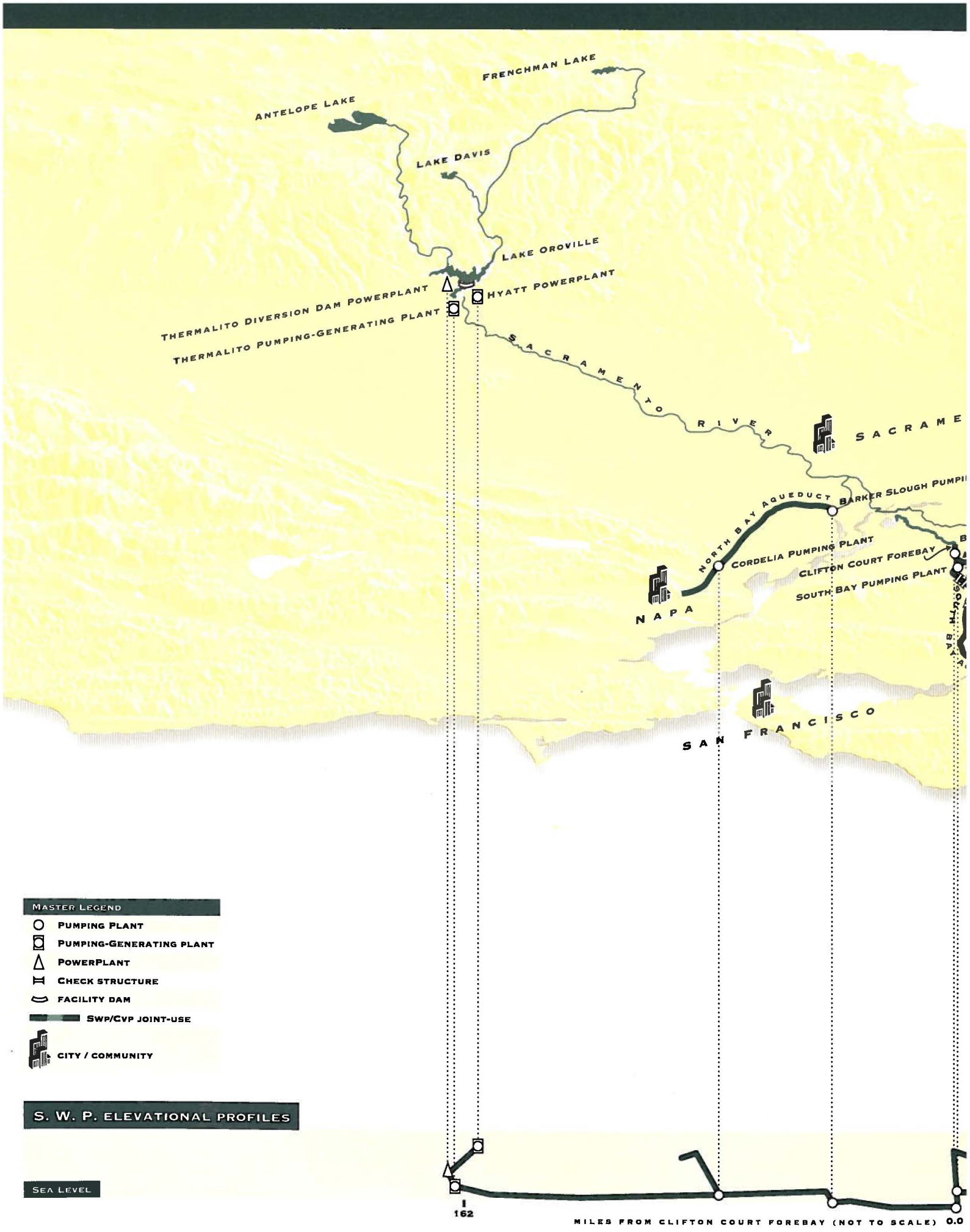
TOTAL MILES OF AQUEDUCTS

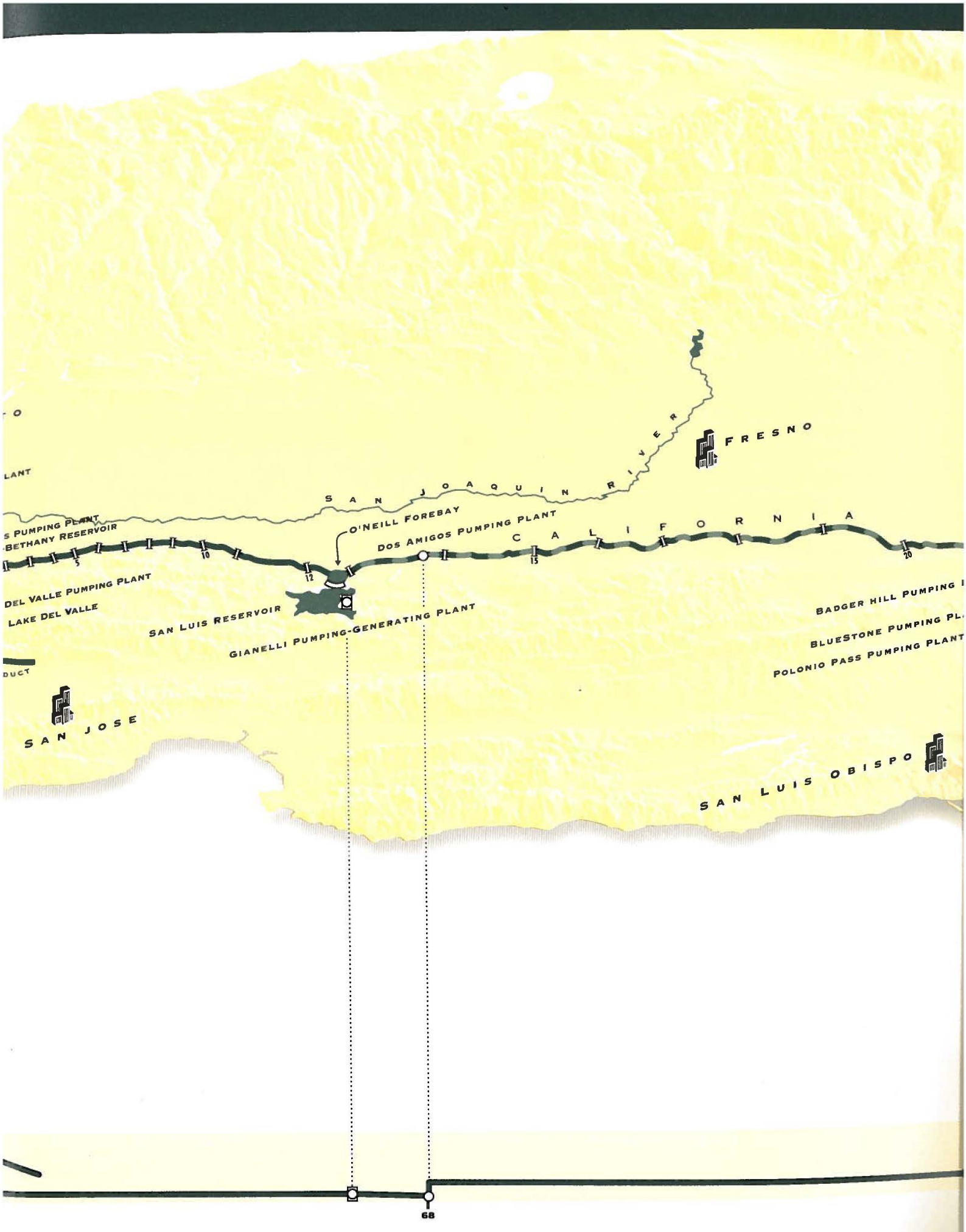
FACILITY	CHANNEL AND RESERVOIR	CANAL	PIPELINE	TUNNEL	TOTAL
1. North Bay Aqueduct	0.0	0.0	27.4	0.0	27.4
2. South Bay Aqueduct	0.0	8.4	32.9	1.6	42.9
SUBTOTAL	**0.0**	**8.4**	**60.3**	**1.6**	**70.3**
3. California Aqueduct, Main Line					
Delta to O'Neill Forebay	1.4	67.0	0.0	0.0	68.4
O'Neill Forebay to Kettleman City	2.2	103.5	0.0	0.0	105.7
Kettleman City to Edmonston Pumping Plant	0.0	120.9	0.0	0.0	120.0
Edmonston Pumping Plant to Tehachapi Afterbay	0.0	0.2	2.5	7.9	10.6
Tehachapi Afterbay to Lake Perris	2.9	93.4	38.3	3.8	138.4
SUBTOTAL	**6.5**	**385.0**	**40.8**	**11.7**	**444.0**
California Aqueduct Branches					
4. West Branch	9.2	9.1	6.4	7.2	31.9
5. Coastal Branch	0.0	14.8	98.3	2.7	115.8
SUBTOTAL	**9.2**	**23.9**	**104.7**	**9.9**	**147.7**
TOTAL	**15.7**	**417.3**	**205.8**	**23.2**	**662.0**

PRINCIPAL DAMS AND RESERVOIRS



FACILITY	RESERVOIRS		DAMS	
	GROSS CAPACITY (ACRE-FEET)	SURFACE AREA (ACRES)	CREST LENGTH (FEET)	STRUCTURAL HEIGHT (FEET)
1. Antelope Lake	22,600	930	1,320	120
2. Frenchman Lake	55,500	1,580	720	139
3. Lake Davis	84,400	4,030	800	132
4. Lake Oroville	3,537,600	15,800	6,920	770
5. Thermalito Diversion Pool	13,400	320	1,300	143
6. Thermalito Forebay	11,800	630	15,900	91
7. Thermalito Afterbay	57,000	4,300	42,000	39
8. Clifton Court Forebay	31,300	2,180	36,500	30
9. Bethany Reservoir	5,100	180	3,940	121
10. Lake Del Valle	77,100	1,060	880	235
11. O'Neill Forebay	56,400	2,700	14,350	88
12. San Luis Reservoir (Sisk Dam)	2,027,840	12,520	18,600	385
13. Los Banos Reservoir	34,600	620	1,370	167
14. Quail Lake	7,600	290	6,600	40
15. Pyramid Lake	171,200	1,300	1,090	400
16. Elderberry Forebay	33,000	500	1,990	200
17. Castaic Lake	323,700	2,240	4,900	425
18. Silverwood Lake	75,000	980	2,230	249
19. Lake Perris	131,500	2,320	11,600	128


FRENCHMAN LAKE
ANTELOPE LAKE
LAKE DAVIS
LAKE OROVILLE
THERMALITO DIVERSION DAM POWERPLANT
HYATT POWERPLANT
THERMALITO PUMPING-GENERATING PLANT
SACRAMENTO RIVER
SACRAME
NORTH BAY AQUEDUCT
BARKER SLOUGH PUMPI
CORDELIA PUMPING PLANT
CLIFTON COURT FOREBAY
SOUTH BAY PUMPING PLANT
NAPA
SOUTH BAY
SAN FRANCISCO
MASTER LEGEND
PUMPING PLANT
PUMPING-GENERATING PLANT
POWERPLANT
CHECK STRUCTURE
FACILITY DAM
SWP/CVP JOINT-USE
CITY / COMMUNITY
S. W. P. ELEVATIONAL PROFILES
SEA LEVEL
162
MILES FROM CLIFTON COURT FOREBAY (NOT TO SCALE)
0.0


SAN JOAQUIN RIVER
FRESNO
CALIFORNIA
O'NEILL FOREBAY
DOS AMIGOS PUMPING PLANT
BETHANY RESERVOIR
DEL VALLE PUMPING PLANT
LAKE DEL VALLE
SAN LUIS RESERVOIR
GIANELLI PUMPING-GENERATING PLANT
BADGER HILL PUMPING
BLUESTONE PUMPING PL
POLONIO PASS PUMPING PLANT
SAN JOSE
SAN LUIS OBISPO
5
10
12
15
20


BAKERSFIELD
TEERINK PUMPING PLANT
CHRISMAN PUMPING PLANT
EDMONSTON PUMPING PLANT
ALAMO POWERPLANT
PYRAMID LAKE
CASTAIC LAKE
CASTAIC POWERPLANT
WEST BRANCH
LOS ANG
OSO PUMPING PLANT
WARNE POWERPLANT
BUENA VISTA PUMPING PLANT
LAS PERILLAS PUMPING PLANT
AQUEDUCT
DEVIL'S DEN
PUMPING PLANT
COASTAL BRANCH
SANTA BARBARA
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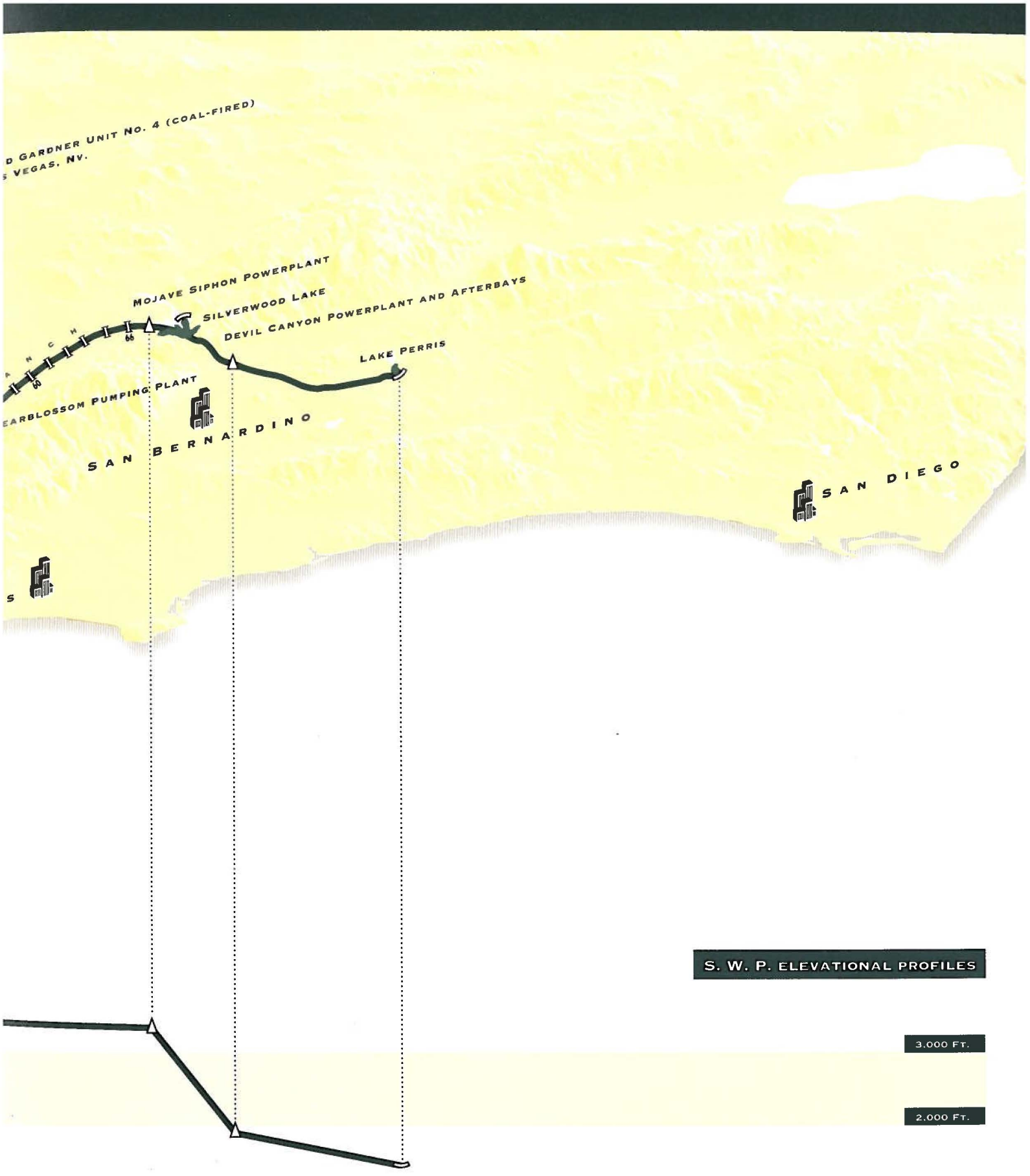

D GARDNER UNIT NO. 4 (COAL-FIRED)
S VEGAS, NV.
MOJAVE SIPHON POWERPLANT
SILVERWOOD LAKE
DEVIL CANYON POWERPLANT AND AFTERBAYS
LAKE PERRIS
EARBLOSSOM PUMPING PLANT
SAN BERNARDINO
SAN DIEGO
S
S. W. P. ELEVATIONAL PROFILES
3,000 Ft.
2,000 Ft.
1,000 Ft.
Sea Level

Pumping Plant Characteristics

	Facility	Number of Units	Normal Static Head (ft)	Total Flow at Design Head (cfs)	Total Motor Rating (hp)
1.	Thermalito	3 (p-g)	85-101	9,120	120,000
2.	Hyatt	3 (p-g)	410-660	5,610	519,000
3.	Barker Slough	9	95-120	228	4,800
4.	Cordelia	11	104-439	138	5,600
5.	Banks	11	236-252	10,668	333,000
6.	South Bay	9	566	330	27,800
7.	Del Valle	4	0-38	120	1,000
8.	Gianelli	8 (p-g)	99-327	11,000	504,000
9.	Dos Amigos	6	107-125	15,450	240,000
10.	Las Perillas	6	55	461	4,000
11.	Badger Hill	6	151	454	11,800
12.	Devil's Den	6	515	150	10,500
13.	Bluestone	6	482	150	10,500
14.	Polonio Pass	6	524	150	10,500
15.	Buena Vista	10	205	5,405	144,500
16.	Teerink	9	233	5,445	150,000
17.	Chrisman	9	518	4,995	330,000
18.	Edmonston	14	1,926	4,480	1,120,000
19.	Oso	8	231	3,252	93,800
20.	Pearblossom	9	539-546	2,575	203,200

p-g = pumping-generating

Power Plants

	Name	Number of Units	Normal Static Height (feet)	Total Flow at Design Head (cfs)	Total Generator Rating (kw)
Hydro					
1.	Thermalito Diversion Dam	1	63-77	615	3,000
2.	Thermalito	4 (3 p-g)	85-101	16,900	115,000
3.	Hyatt	6 (3 p-g)	410-675	16,950	644,250
4.	Gianelli	8 (p-g)	99-327	16,960	424,000
	SWP share				222,100
5.	Alamo	1	115-141	1,740	17,000
6.	Warne	2	719-739	1,564	74,300
7.	Mojave Siphon	3	95-146	2,880	32,400
8.	Devil Canyon	4	1,406	2,811	280,000
Thermal					
9.	Reid Gardner Unit 4	1			245,000
	SWP share				169,500

p-g = pumping-generating

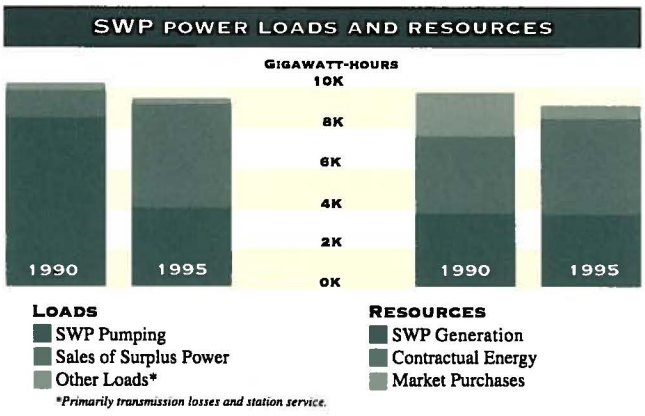
THE STATE WATER PROJECT'S EIGHT POWER PLANTS, INCLUDING DEVIL CANYON POWERPLANT (TOP) ON THE EAST BRANCH AND HYATT POWERPLANT AT OROVILLE, PRODUCE ELECTRICITY TO OPERATE PROJECT PUMPING FACILITIES.

THE STATE WATER PROJECT requires dependable, economical power to deliver water to the areas served by the state water contractors. How much power SWP facilities consume depends on contractor requests for water and the amount of water available for delivery and storage. Since 1984 SWP power requirements have ranged from more than 8 billion kilowatthours a year, as in 1990, to under 4 billion kwh, as in 1995.

In an average water supply year, SWP hydroelectric power plants and a partially SWP-owned coal-fired plant in Nevada produce about 5.9 billion kilowatthours. Of that total, 4.5 billion kilowatthours come from hydroelectric generation.

Another large portion of energy used by the SWP is provided by exchange agreements with Southern California Edison Company; the Department exchanges on-peak energy and corresponding capacity at SWP power plants for larger quantities of off-peak energy from SCE supplies. Joint development and long-term purchase agreements also provide a significant amount of power for SWP operations. The Department has entered into numerous agreements with electric utilities, energy brokers and power pools in California, the Northwest and the Southwest for short-term sale, purchase or exchange of power. Under these agreements, the Department purchases energy as needed. When SWP power requirements are less than power resources, the Department sells surplus power to help defray the net cost of water deliveries.

The SWP has operational flexibility in managing its pumping requirements. This flexibility comes by temporarily storing water in SWP reservoirs, which can then be released to meet the daily and seasonal demands of the state water contractors. In managing its operation, pumping is minimized during on-peak hours when power costs are highest. Maximum pumping is usually scheduled during off-peak periods (nights, weekends and holidays) when power costs are cheaper. Such flexibility allows the SWP to purchase, when needed, inexpensive surplus generation from other power suppliers for its pumping operations.



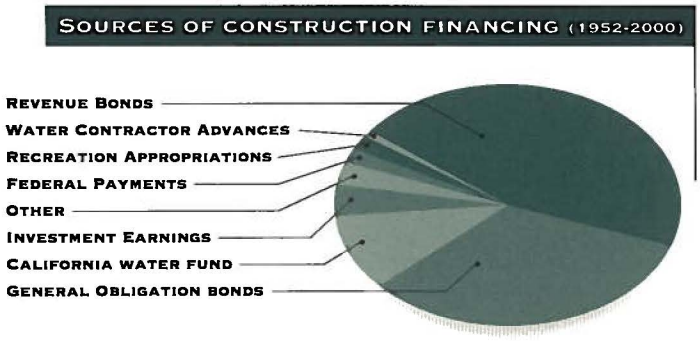

NORTHWEST POWER TRANSMISSION ACCESS
REDDING
HYATT
THERMALITO DIVERSION DAM
THERMALITO
SACRAMENTO
SAN FRANCISCO
GIANELLI
PINE FLAT
FRESNO
CALIFORNIA AQUEDUCT
BAKERSFIELD
ALAMO
WARNE
CASTAIC
LOS ANGELES
MOJAVE SIPHON
DEVIL CANYON
REID GARDNER UNIT 4
SAN DIEGO
TRANSMISSION PATHS CONNECTING POWER RESOURCES AND POWER DELIVERY POINTS
SWP POWERPLANTS
CONTRACT SUPPLIES
BULK POWER DELIVERY POINTS
TRANSMISSION BY OTHERS
STATE WATER PROJECT POWER RESOURCES
66% HYDRO
04% LONG-TERM PURCHASE
11% COAL
19% CONTRACT HYDRO

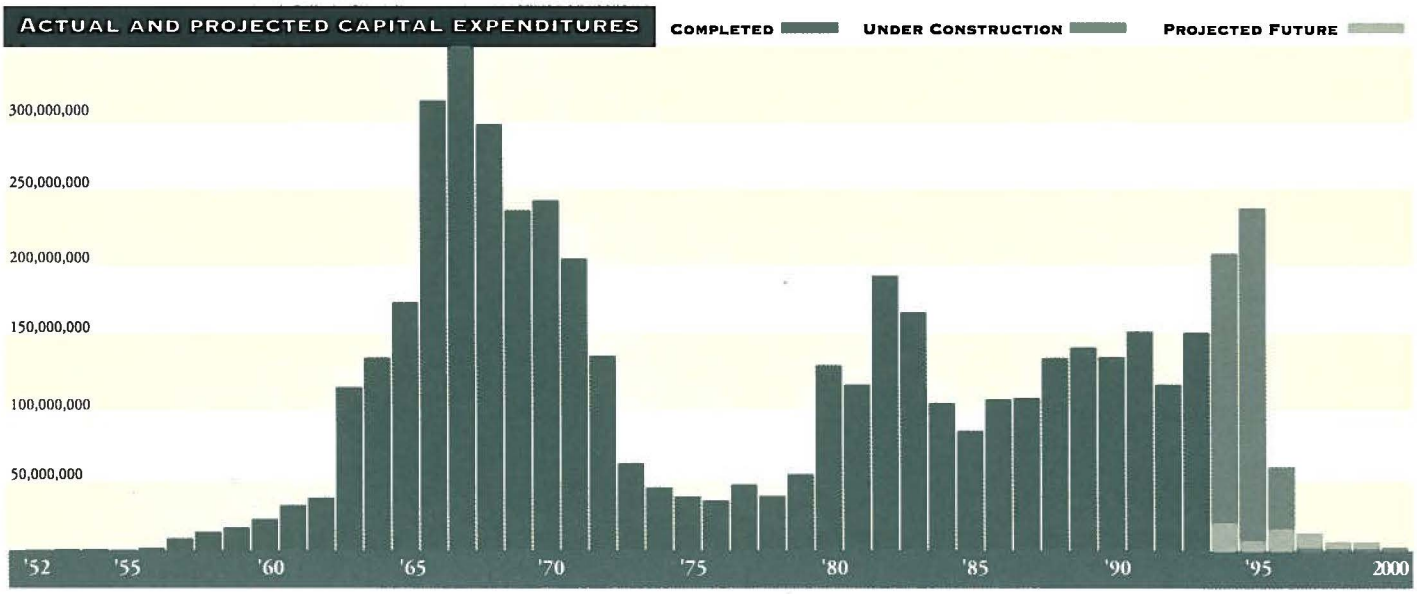
EXPENDITURES - By the end of 1996, about $5 billion had been spent to construct State Water Project facilities. The Department projects that another $300 million will be required to complete facilities under construction, primarily the Coastal Branch, Phase II and the East Branch Extension. The amount also includes projected costs for the South Delta facilities.

FINANCING - Funds from the sale of general obligation and revenue bonds have provided the major source of financing (approximately 78 percent) for construction of the State Water Project. Full repayment of these bond funds is being made by Project beneficiaries rather than by the general taxpayer.

Other capital funding sources have included tideland oil revenues (deposited in the California Water Fund), investment earnings, legislative appropriations for recreation, federal flood control payments, and funds advanced by water contractors. The Department currently finances its construction by obtaining short-term commercial paper notes that are periodically replaced by long-term revenue bonds. The relative amounts of these funding sources are shown on the pie chart. The portion labeled "other" includes legislative appropriations prior to the 1959 Bond Act, payment for the non-Project share of Castaic Powerplant, and excess operating revenues to be used for SWP construction.

Revenue bonds are expected to be the main financing source for future Project facilities.

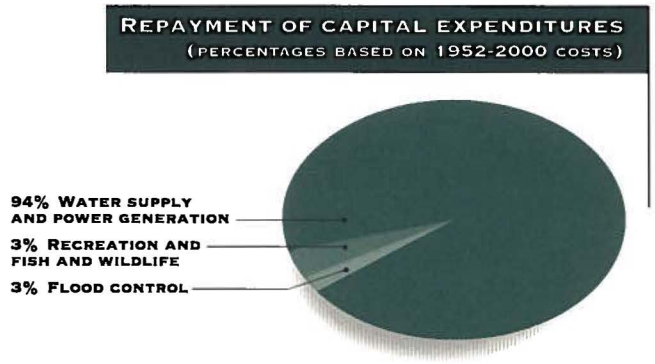


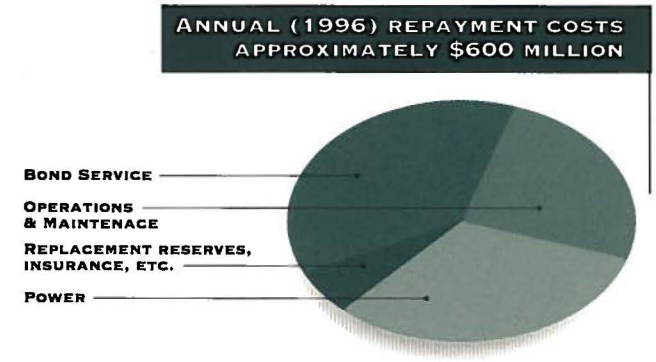


REPAYMENT - The 29 state water contractors repay, with interest, about 94 percent of the cost for constructing the SWP. All contractors pay the same unit rate for constructing and operating the SWP conservation facilities. These facilities are used to develop the Project's water supply and include Lake Oroville, San Luis Reservoir, and a portion of the California Aqueduct from the Sacramento-San Joaquin Delta to San Luis. Each contractor also pays its own "transportation charge." The charge repays the cost for constructing and operating the aqueduct facilities needed to deliver water to a contractor's service area. Under the transportation charge, the more distant contractors pay a higher charge than those located near the water source in the Sacramento-San Joaquin Delta.

In addition to repayment by water contractors, the federal government has paid for facilities built by the Project for flood control. Recreation, fish and wildlife protection costs are paid by the State.

ANNUAL REPAYMENT COSTS - Annual repayments by SWP contractors total about $600 million a year (1996). Of that amount, operation and maintenance (O&M) costs for labor and equipment account for 25 percent. The cost for power (purchases less generation and sales) amounts to 32 percent. Bond service payments of principal and interest and repayments for other capital financing are about 37 percent. The remaining 6 percent includes deposits for replacement reserves, insurance and other miscellaneous costs.





REPAYMENT COSTS COVER THE SKILLED LABOR AND EQUIPMENT NEEDED TO OPERATE AND MAINTAIN SWP FACILITIES.

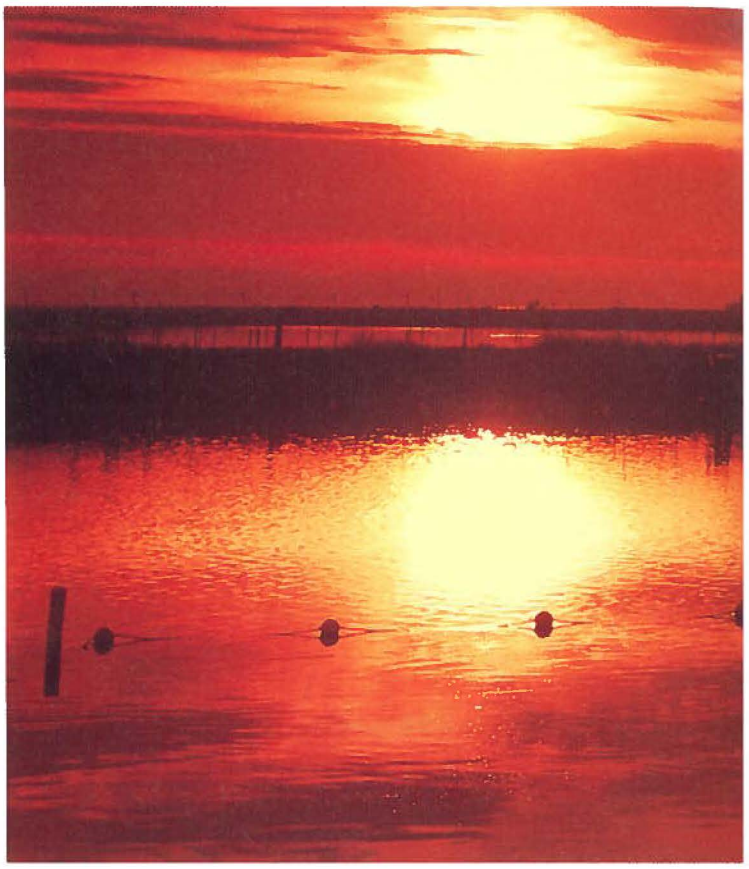
TO COMPLY with an array of environmental regulations and to provide fish and wildlife protection, DWR has built major facilities. The Department also funds and participates in a variety of programs to protect the environment.

The Suisun Marsh Salinity Control Structure, built in 1988, is operated to keep saline water out of the marsh. The Skinner Fish Protective Facility was built to divert fish from the intake channel that leads to the Banks Pumping Plant. At the facility, fish are collected and counted then returned to the Delta. DWR also installs temporary barriers in the south Delta to improve conditions for chinook salmon and for local water users. The Feather River Fish Hatchery near Lake Oroville raises millions of salmon and steelhead annually.

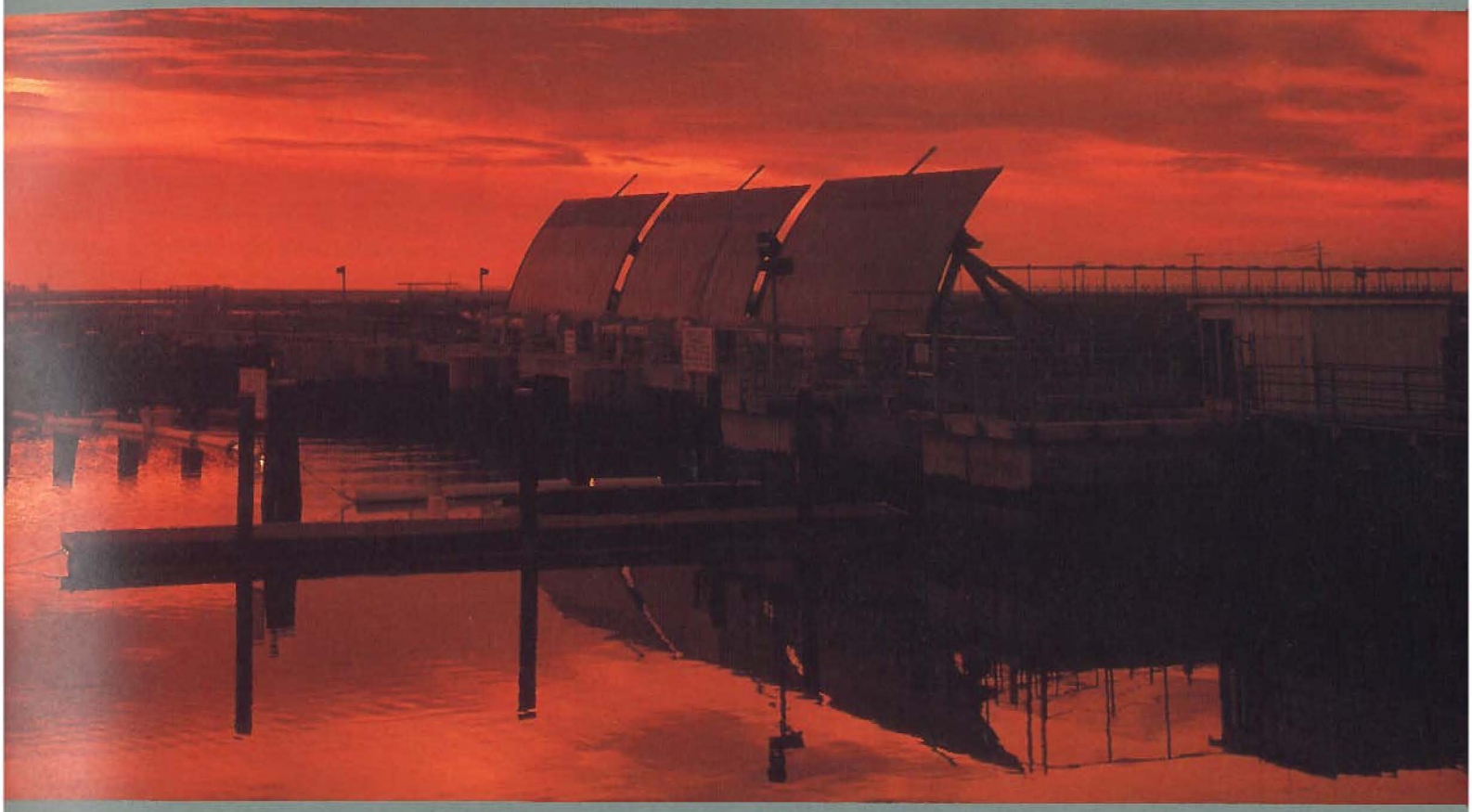
In 1986, DWR and the Department of Fish and Game signed an agreement to determine mitigation measures for the Banks Pumping Plant. The primary purpose of the agreement, often referred to as the "4-Pumps Agreement," is to offset the direct losses of striped bass, chinook salmon and steelhead caused by the pumping plant's operations. The agreement also established a $15 million program, funded by DWR and the state water contractors, to enhance striped bass, steelhead and chinook salmon fisheries.

Activities funded by the program include improving salmon spawning habitat in the Sacramento and San Joaquin river systems; creating a law enforcement unit to combat poaching in the Bay-Delta Estuary; conducting programs to monitor movements of listed fish species in the estuary; expanding and modernizing the Merced River Fish Hatchery; developing design and operational criteria for fish screens; and establishing a Mill Creek conjunctive use project, in which wells were installed and operated for local agriculture use, leaving sufficient flows in the creek at critical times for salmon and steelhead migration.

In addition, DWR is involved with creating wetland and upland wildlife habitat areas at Lake Oroville and Thermalito Afterbay, on Sherman and Twitchell islands in the Delta, and in Southern California; coordinating preparation of habitat conservation plans, which define sensitive habitat areas on State land; conducting surveys of fish and other aquatic communities in the Bay-Delta Estuary; and supporting and taking part in research studies under the auspices of the Interagency Ecological Program for the Bay-Delta.



THE SUISUN MARSH SALINITY CONTROL GATES (TOP) SERVE TO IMPROVE WATER QUALITY IN THE SUISUN MARSH. DWR'S ENVIRONMENTAL SPECIALISTS HELP PROTECT SENSITIVE HABITAT AREAS THROUGH A VARIETY OF PROJECTS, INCLUDING FISH SURVEYS.



SOUTH DELTA PROGRAMS - The Department and the U.S. Bureau of Reclamation are proposing a project that would install permanent, operable barriers in several south Delta channels and also increase the operational flexibility of the SWP.

The Temporary Barriers Project was initiated in 1991 to improve conditions for agricultural diversions and provide data for the design and potential environmental impacts of the permanent barriers. The project, which will no longer be needed once the Interim South Delta Program is implemented, consists of three rock barriers operated through the irrigation season and a rock fish barrier installed at the head of Old River in the spring and fall.

The ISDP is designed to begin operation in the near-term, prior to the implementation of the long-term Delta solution. It will improve water conditions for local agricultural diversions and alleviate SWP export restrictions. A draft environmental impact report/statement was released to the public in August 1996. Construction is scheduled to begin in 2000 and be completed by 2005.

The components of the ISDP are 1) construction of a new intake structure at the SWP Clifton Court Forebay; 2) channel dredging along 4.9 miles of Old River just north of Clifton Court Forebay; 3) construction and seasonal operation of a barrier at the head of Old River in the spring and fall to improve conditions for salmon migrating along the San Joaquin River; and 4) construction and seasonal operation of flow control structures at Old River, Middle River and Grant Line Canal to improve existing water level and circulation patterns for local irrigators.

The proposed ISDP will enable the Banks Pumping Plant to take advantage of high winter flows and expand pumping from a maximum monthly average of 6,700 cubic feet per second to 10,300 cfs—the maximum capacity of the Banks plant and the California Aqueduct.

The proposed project will be compatible with the long-term Delta solution being developed by the CALFED Bay-Delta Program. The final decision to proceed with the export features of the ISDP will be made after the progress of the Bay-Delta Program is evaluated. If it appears that the features are incompatible with the long-term solution being developed by the Bay-Delta Program, DWR and the USBR will consider proceeding with only the permanent barriers.

EAST BRANCH EXTENSION - The East Branch Extension is a cooperative effort between DWR, San Bernardino Valley Municipal Water District, and San Gorgonio Pass Water Agency to deliver SWP water to the east side of SBVMWD's service area and SGPWA's service area. The project will convey water from the Devil Canyon Powerplant Afterbay to Cherry Valley through a series of existing and new facilities, and will be constructed in two phases.

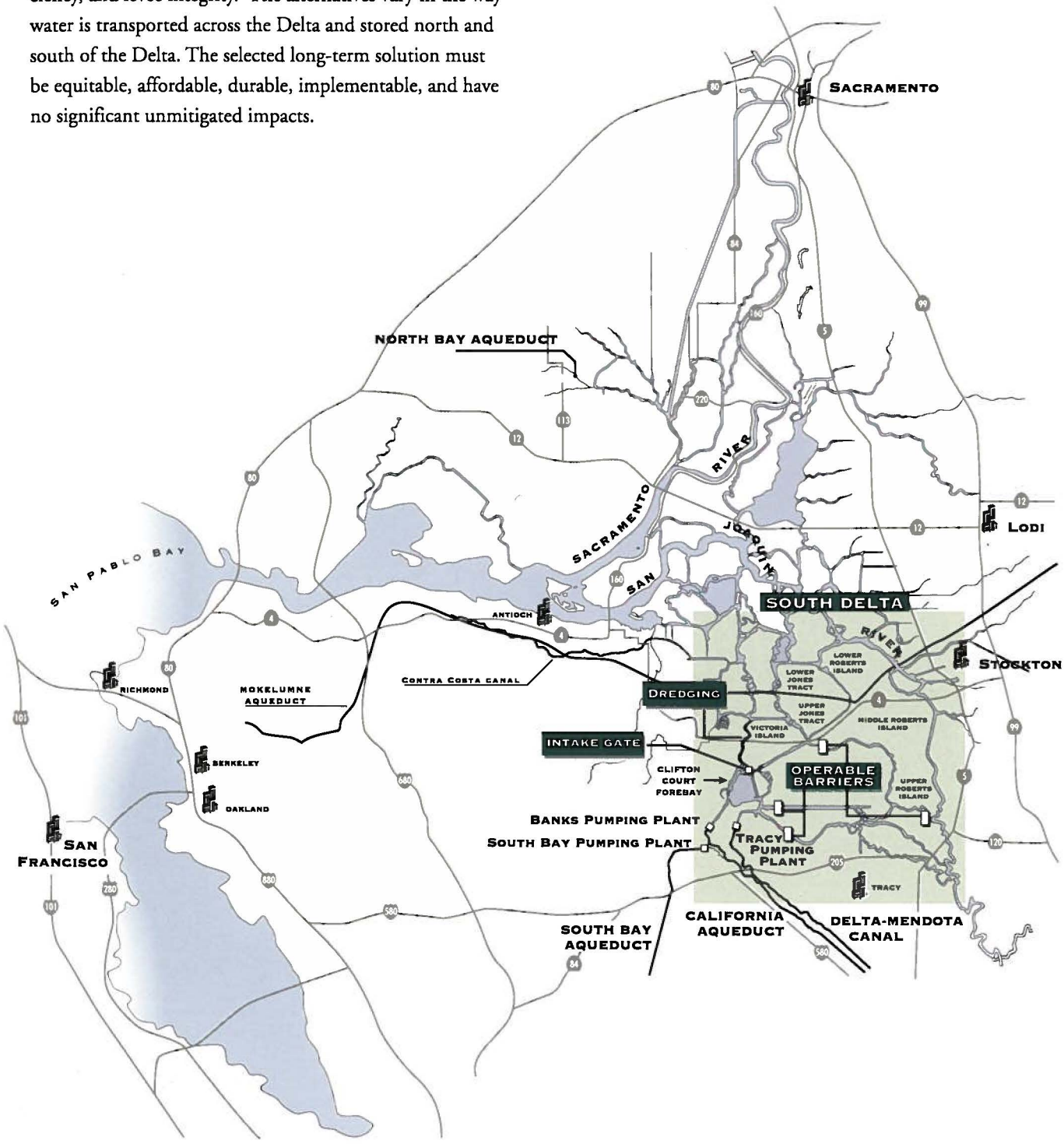
Phase 1 will deliver one-half of the San Gorgonio Pass Water Agency's entitlement water (8,650 acre-feet) for recharging groundwater in Cherry Valley. New facilities will consist of approximately 14 miles of pipeline and two pump stations. Final design began in August 1996 with project completion scheduled for early 1999.

Phase 2 will add facilities that bypass a segment of Phase 1 and provide additional pumping capacity to convey the full entitlement of SWP water (17,300 acre-feet) to the San Gorgonio Pass Water Agency. Phase 2 construction will be scheduled when there is sufficient demand for additional water in the service area.

CALFED BAY-DELTA PROGRAM - The CALFED Bay-Delta Program began in 1995 and is a joint venture of State and federal agencies and water supply and environmental interests. Its mission is to develop a long-term, permanent solution for water problems in the Bay-Delta. The Department is a member of CALFED and strongly supports and participates in the program.

Through a series of public workshops, stakeholders and CALFED agencies developed criteria for a Bay-Delta solution. During Phase I of its work, CALFED generated 20 comprehensive Bay-Delta solutions and hosted 13 public meetings to encourage input. The Bay-Delta Advisory Council was also established to help CALFED identify problems to be addressed and discuss other program objectives and alternatives. BDAC's membership consists of more than 30 citizen-advisors selected from California's agricultural, environmental, urban, business, fishing, and other interests.

During Phase II, the list of alternatives was narrowed to three for a two-year period of intensive study and public participation, after which an environmental impact report/ statement will be released. All alternatives contain programs for ecosystem restoration, water quality, water use efficiency, and levee integrity. The alternatives vary in the way water is transported across the Delta and stored north and south of the Delta. The selected long-term solution must be equitable, affordable, durable, implementable, and have no significant unmitigated impacts.



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

ABBREVIATED NAME	COMPLETE NAME	NAME AND POSITION OF HONOREE
Banks Pumping Plant	Harvey O. Banks Delta Pumping Plant	**Harvey O. Banks,** first Director of the California Department of Water Resources, 1956-60
California Aqueduct	Governor Edmund G. Brown California Aqueduct	**Edmund G. (Pat) Brown,** Governor of California 1959-67, under whose leadership the Legislature authorized and the voters approved the State Water Project
Chrisman Pumping Plant	Ira J. Chrisman Wind Gap Pumping Plant	**Ira J. Chrisman,** Member of the California Water Commission 1960-76 (Chairman 1967-76)
Edmonston Pumping Plant	A. D. Edmonston Pumping Plant	**A. D. Edmonston,** State Engineer, Division of Water Resources, Department of Public Works, 1950-55
Gianelli Pumping-Generating Plant	William R. Gianelli Pumping-Generating Plant*	**William R. Gianelli,** Director of California Department of Water Resources, 1967-73, and Assistant Secretary of the Army for Civil Works, 1981-84
Hyatt Powerplant	Edward Hyatt Powerplant	**Edward Hyatt,** State Engineer, Division of Water Resources, Department of Public Works, 1927-50
Lake Davis	Lake Davis	Assemblyman **Lester Thomas Davis,** California Legislature, 1947-52, and Assemblywoman **Pauline L Davis,** California Legislature, 1953-72. Husband and wife were active in legislative water matters. Mrs. Davis coauthored the Davis-Grunsky and Davis-Dolwig Acts.
O'Neill Forebay	O'Neill Forebay*	**Jack Edward O'Neill,** a pioneer farmer in the San Joaquin Valley, who worked for authorization of the San Luis Division of the federal Central Valley Project
Porter Tunnel	Carley V. Porter Tunnel	Assemblyman **Carley V. Porter,** California Legislature, 1949-72, coauthored the 1959 Water Resources Development Bond Act to help finance the State Water Project.
Silverwood Lake	Silverwood Lake	**W. E. "Ted" Silverwood,** a resident of Riverside County who worked unceasingly to promote the State Water Project
Sisk Dam	B. F. Sisk San Luis Dam*	**Congressman B. F. Sisk,** U. S. Congress, 1955-79, introduced legislation authorizing the San Luis Unit of the federal Central Valley Project.
Skinner Fish Facility	John E. Skinner Delta Fish Protective Facility	**John E. Skinner,** California Department of Fish and Game, 1954-78, supervised the evaluation and improvements of the fish protective facility.
Teerink Pumping Plant	John R. Teerink Wheeler Ridge Pumping Plant	**John R. Teerink,** Director of the California Department of Water Resources, 1973-75
Warne Powerplant	William E. Warne Powerplant	**William E. Warne,** Director of the California Department of Water Resources, 1961-66

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

CALIFORNIA AQUEDUCT NEAR THE CITY OF PATTERSON ►