STATE OF CALIFORNIA

The Resources Agency

Department of Water Resources

PROGRAM COMPONENT STATEMENTS
1976-77 PLANNING, SERVICES
AND PUBLIC SAFETY PROGRAMS

FOR

THE DIRECTOR'S
PROGRAM CONFERENCE

JULY 8, 1975

For Internal Use Only

STATE OF CALIFORNIA

The Resources Agency

Department of Water Resources

PROGRAM COMPONENT STATEMENTS 1976-77 PLANNING, SERVICES AND PUBLIC SAFETY PROGRAMS FOR THE DIRECTOR'S PROGRAM CONFERENCE

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S-8

TITLE:

"Program Component Statements
1976-77 Planning, Services and
Public Safety Programs
for the Director's Program Conf.

AUTHOR: DWR

INDEX

Planning and Flood Control Programs

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6/30/75

STATEWIDE PLANNING

PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

Work on this continuing activity was first initiated in 1963. The analytical studies conducted and synthesized under this component have provided overview evaluations of alternative and complementary water management opportunities to meet a range of possible future economic growth levels and patterns on a statewide and intrastate regional basis. These studies form the basis for the periodic modifications to the California Water Plan, as reported in the Bulletin 160 series.

Other bulletins and reports are rendered on specific study phases of this component during the interval between the Bulletin 160 editions, as appropriate. Post-project economic evaluation component was added to the program in 1974-75. Western States Water Planning and Review of Reports of other Agencies are being combined with the program in 1975-76.

Need

In the formulation of the statewide overview plans, emphasis has been placed on providing the conceptual framework necessary to guide and assist local, state and federal agencies concerned with water resources, so that they may schedule, conduct and implement their water-related planning and development activities most effectively. To reflect emerging social and environmental considerations, this program is being reoriented to take a fresh look at significant water issues facing California and to suggest specific ways of resolving them within the context of present-day attitudes. There is a need to plan towards conservation and strethcing of available supplies. Traditional methods of estimating future water demands must be reexamined and emphasis given to determining realistic water demands, achievable through both reduced water use and more effective use including the influence of changing water pricing policies on water demands. These needs are not just to save water but would impact significantly on energy savings--a national goal.

OUTPUT SCHEDULE

The output for specific component activities are as follows:

1. Memorandum Reports June 1977:
   a. Item 1--Areal studies to provide the basis for administrative policy on allocation of water supplies, etc. (see work program)

b. Item 2--Central Valley Hydrology and Coordinated Operation Studies
c. Item 6a--Post-Project Economic Evaluation. San Joaquin District also in June 1976

2. Item 3--Water Conservation Possibilities--Report. August 1975.

3. Item 66--Southern District Report: Post-Project Economic Evaluation . June 1976.

4. Item 7--Process comments on 100-150 federal and other reports, expedient 4000-4500 Clearinghouse notices and applications, and analyze approximately 350 permit applications for navigation, harbor or shoreline facilities.

5. Item 8--Report entitled "The California Water Plan in Year 2000--A Design for the Future". July 1977.

OBJECTIVE

To periodically set forth an updated status report on California's water resources, the capability to satisfy possible future levels of water supply needs and water-related services, and to report an assessment of public attitudes and desires with respect to water resources utilization.

A major product of the program for F.Y. 1976 and 1977 will be courses of action worked out with involved agencies and the public which will be documented in the report "The California Water Plan in Year 2000--A Design for the Future". It will be a road map, a water management action program, not just a development plan. It will be a living, flexible plan subject to change and refinement to meet continually changing concepts.

More specifically, the plan developed over the two-year period will:

1. Say how California wants to manage its water resources.

2. Provide the basis for administration policy concerning allocation of water supplies and priorities for expenditure of funds for water management, conservation, and development.

3. Identify and evaluate water supply-demand-quality and related flood damage prevention problems with consideration of fish, wildlife, and recreation needs.

4. Identify and evaluate alternative solutions to identified problems.

5. Provide a basis for fully integrated operation of the Central Valley Project and the State Water Project.

6. Develop a basis for assigning responsibility for maintenance of Delta water quality requirements.

7. Recommend courses of action with regard to individual issues and problems.

The scope of the program will be basically statewide in nature with emphasis on the Central Valley, San Francisco Bay and Central Coastal area, and Southern California where present and expected near future water problems exist. Interstate developments will be also monitored for impact on California. Major water problems will be identified on the basis of water supply-demand-quality relationships, but corollary problems related to or generated by those basic problems will be considered in this investigation.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

Specific components of the program are:

1. Areal studies to provide the basis for administrative policy concerning allocation of water supplies and priorities for expenditure of funds for water management with emphasis on conservation and more effective utilization of presently developed supplies. These studies will be conducted for the following water service areas throughout the State:

   a. Trinity River (instream and export considerations)
   b. Russian River (Eel River imports and Warm Springs reservoir service area)
   c. Southwestern Sacramento Valley (particularly West Sacramento Canal and Yolo-Zamora service areas)
   d. Southeastern Sacramento Valley (Folsom South Canal service to Sacramento and San Joaquin Counties and EBMUD)
   e. Eastside San Joaquin Valley (ground water overdraft and the service areas of New Melones reservoir and Mid-Valley Canal)
   f. Westside San Joaquin Valley (agricultural drainage considerations)
   g. South Bay-Central Coastal (San Felipe service area in Santa Clara, San Benito, Santa Cruz, and Monterey Counties)
   h. San Luis Obispo and Santa Barbara Counties (Coastal Aqueduct service to San Luis Obispo and Santa Barbara Counties)
   i. South Coastal Area (California Aqueduct service area)
   j. Owens-Mono area (exchange considerations for the Owens Valley-Mono Basin Area)

G$467
P$140

2. Coordinated Central Valley operation studies leading to maximizing water supplies and achieve a higher level of coordination among federal, state, and local water projects and agencies for water conservation and more effective use of existing supplies. G$170 P$ 90

3. Evaluate conservation of existing supplies through development of a report on water conservation methods, practices, and devices and their possible implementation through public education, legislation, water contracts, pricing, and allocations. G$100

4. Statewide land and water use assessments, projections of economic demand and payment capacity for water, effects of water deficiencies, and relationship of problem area studies to national and state market outlooks. G$172 R$ 25

5. Assessment and participation in matters relating to interstate planning and development impacting on California. (Western States Planning) G$ 82

6. Post-Project economic evaluation to evaluate impact of State Water Project on local economics and existing institutions.

   a. San Joaquin District
   b. Southern District G$ 43

7. Review and coordinate comments on all statements and reports affecting California water and related land management. (Review of Reports of Other Agencies--WA1324). G$464

8. Develop courses of action in cooperation with involved agencies and the public which will be documented in a report entitled "The California Water Plan in Year 2000--A Design for the Future", scheduled for publication July 1977.

9. Coordination and Management. G$ 123

Environmental Considerations

The Statewide Planning program component and the activities conducted under the component are considered to be in the category of "feasibility and planning studies" and therefore do not require an environmental impact report (Section 544 (b) of the DWR Regulations). In accordance with the provisions of the Environmental Quality Act of 1970, Section 21102, the activities conducted as part of this program component shall include consideration of environmental factors.

WORK PROGRAM FOR BUDGET YEAR 1976-77

1. Conduct areal studies to provide the basis for administrative policy concerning allocation of water supplies and priorities for expenditure of funds for water management with emphasis on conservation and more effective utilization of presently developed supplies. These studies will be conducted for the following water service areas throughout the State:

   a. Trinity River (instream and export considerations)
   b. Russian River (Eel River imports and Warm Springs reservoir service area)
   c. Southwestern Sacramento Valley (particularly West Sacramento Canal and Yolo-Zamora service areas)
   d. Southeastern Sacramento Valley (Folsom South Canal service to Sacramento and San Joaquin Counties and EBMUD)
   e. Eastside San Joaquin Valley (ground water overdraft and the service areas of New Melones reservoir and Mid-Valley Canal)
   f. Westside San Joaquin Valley (agricultural drainage considerations)
   g. South Bay-Central Coastal (San Felipe service area in Santa Clara, San Benito, Santa Cruz, and Monterey Counties)
   h. San Luis Obispo and Santa Barbara Counties (Coastal Aqueduct service to San Luis Obispo and Santa Barbara Counties)
   i. South Coastal Area (California Aqueduct service area) — G$201 / P$ 30
   j. Owens-Mono area (exchange considerations for the Owens Valley-Mono Basin Area)

2. Reconduct coordinated Central Valley operation studies leading to maximizing water supplies and achieve a higher level of coordination among federal, state, and local water projects and agencies for water conservation and more effective use of existing supplies. — G$200 / P$ 90

3. Evaluate conservation of existing supplies through development of a report on water conservation methods, practices, and devices and their possible implementation through public education, legislation, water contracts, pricing, and allocations. — G$151

4. Coordinate statewide land and water use assessments, projections of economic demand and payment capacity for water, effects of water deficiencies, and relationship of problem area studies to national and state market outlooks. — G$260

5. Continue assessment and participation in matters relating to interstate planning and development impacting on California. (Western States Planning) G$ 82

6. Post-Project Economic Evaluation. G$ 43

7. Review and coordinate comments on all statements and reports affecting California water and related land management. G$464

8. Develop courses of action in cooperation with involved agencies and the public which will be documented in a report entitled "The California Water Plan in Year 2000--A Design for the Future", scheduled for publication July 1977. G$100

9. Coordination and Management. G$105

Environmental Considerations

See WORK PROGRAM FOR CURRENT YEAR (1975-76)

INPUT

($1,000s)

	1974-75		1975-76		1976-77	
	M.Y.	$	M.Y.	$	M.Y.	$
General Fund--Support	45.7	1,454.0	50.3	1,621.0	43.6	1,606.0
Project Funds			7.5	230.0	2.9	120.0
Reimbursable--Cash			1.0	25.0		
TOTAL	45.7	1,454.0	58.8	1,876.0	46.5	1,726.0

(STATEWIDE PLANNING)
(Work Authorities 1600, 1324, 1325, 1326, 1328, 1329)
DIVISION OF PLANNING

SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Year Major Activity and/or Study	M.Y.	Fund	($1,000s) Organization and Source of Funding DP	ND	CD	SJD	SD	TOTALS
Expenditures for 1975-76								
Area Studies	16.4	G		103	120	124	120	467
	4.5	P					140	140
Coordinated CV Operation	4.4	G	170					170
	3.0	P	90					90
Water Conservation	2.4	G	90	10				100
Water Demand Overview	3.1	G	172					172
	1.0	R	25					25
Western States Planning	3.7	G	82					82
Post-Project Econ. Eval.	1.1	G				24	19	43
Review of Reports	15.7	G	118	68	86	79	113	464
Coordination and Administration	3.5	G	123					123
SUBTOTALS 1975-76	50.3	G	755	181	206	227	252	1621
	7.5	P	90				140	230
	1.0	R	25					25
TOTALS 1975-76			870	181	206	227	392	1876

(STATEWIDE PLANNING)
(Work Authorities 1600, 1324, 1325, 1328, 1329)
DIVISION OF PLANNING

SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Year Major Activity and/or Study	M.Y.	Fund	(1,000s) Organization and Source of Funding DP	ND	CD	SJD	SD	TOTALS
Expenditures for 1976-77								
Area Studies	5.1 1.0	G P		28	60	36	77 30	201 30
Coordinated CV Oper.	5.1 1.9	G P	170 90	10	10	10		200 90
Water Conservation	3.7	G	45	30	15	43	18	151
Water Demand Overflow	6.5	G	130	35	35	35	25	260
Western States Planning	2.0	G	82					82
Post-Project Econ. Eval.	1.1	G				24	19	43
Review of Reports	15.7	G	118	68	86	79	113	464
Bulletin Year 2000 Plan	2.2	G	100					100
Coordination and Administration	2.2	G	105					105
TOTALS 1976-77	43.6 2.9	G P	750 90	171	206	227	252 30	1606 120

Second Supplement
Statewide Planning Program

PROGRAM CONTRIBUTIONS TO YEAR 2000 PLAN

1975-76 ($1,000s)

Program	DP	ND	CD	SJD	SD	Total
Statewide Planning	671	113	120	124	259	1287
Operations Development	10					10
S.J. Drain. Fac. Impl.				61		61
Regional Planning		267	108		189	564
Ag. Waste Water Mgt.	36			59		95
Land Res. & Use	20	20	28	15	35	118
Water Use	30	10	32	40	16	128
More Eff. Cons. & Use				58	58	116
Title III	33					33
Waste Water Recl.			75		93	168
Qual. of Water Supplies			20		40	60
Saline Water Conv.					8	8
Water Quantity & Qual. Meas.					40	40
Weather Modification			20			20
Geothermal Resources					20	20
	800	410	403	357	758	2728

1976-77

Statewide Planning	662	105	120	124	169	1180
Operations Development	10					10
S.J. Drain. Fac. Impl.				24		24
Regional Planning		60			19	79
Agric. Waste Water Mgt.				11		11
Water Use	30					30
Title III	33					33
	735	165	120	159	188	1367

George Baumli
Don Finlayson
John Masier
Bob Potter

June 26, 1975

REGIONAL PLANNING
PROGRAM COMPONENT STATEMENT

SYNOPSIS

In July 1975, in the interest of more effective management, the following eight regionally oriented water resources planning studies were consolidated into this component:

Ground Water Basin Resources - Continuing ground water resource evaluation studies in selected areas. Investigations of Livermore Valley and Sonoma County have been completed and published in the Bulletin 118 series.

Sacramento Valley Ground Water - Cooperative study with USGS covering Sacramento Valley from Red Bluff to the Delta. Geologic and hydrologic information on ground water potential has been developed (Bulletin 118-6) and more detailed studies are underway on west side of Valley where opportunities exist for conjunctive operation of ground and surface water supplies.

Wells in Rock Areas - Statewide study to develop and desseminate information and guidelines about obtaining ground water supplies from rocky foothill and mountainous areas (Bulletin 118-5). Subsequent related studies will evaluate total ground water resources of mountainous (fractured rock) areas.

Artificial Recharge - Statewide inventory and evaluation of ground water recharge practices (Bulletin 118-7).

Ground Water in Fractured Rock - These studies are a second phase activity of "Wells in Rock Areas" and will place emphasis on the ground water resource rather than on the wells.

Ground Water Basin Protection - Statewide studies designed to protect ground water resources. Major activity is assisting local agencies in formulating and adopting water well standards (Bulletin 74 series). Seawater Intrusion studies reported in Bulleting 63 series; other protection studies reported in Bulletins 147 and 118 series. Effects of sanitary landfills are evaluated in cooperation with local agencies.

Northern California Investigation - Continuing cooperative water management studies of ground water basins throughout the state. Investigations of the following areas have been or are nearly completed: L. A. County Coastal Plain, San Juan Area, San Jacinto Valley, Ventura County, Sacramento County, Kern County, and North Santa Clara County; results reported in Bulletins 104 and 118 series. Ongoing studies

include Livermore Valley and South Santa Clara County. Ground water storage of State Water Project supplies is included in this element. Emphasis will be placed on prototype conjunctive study in San Fernando Basin and on conjunctive study in San Joaquin Valley.

Local Projects Assistance - Short-term studies at local request to assist local agencies in formulating programs to meet water supply needs.

Delta Regional Resources Study - Development of a comprehensive regional management plan that will provide information for optimum utilization of the Delta's resources, including improvement of the Delta levees.

San Diego Coastal Lagoons - Cooperative study with San Diego County to develop information on stream sediment production and effects.

Local Project Planning - Three components were previously consolidated under this element: Northern California Action Program, Fishery and Wildlife Enhancement Study, and the Character and Use of Rivers Study. Study emphasis is now shifted to working with a multi-agency Trinity River Basin Fish and Wildlife Task Force to define and correct fish and wildlife problems associated with construction of the Trinity River Project.

Need

Implementation of water resources management plans at local, regional, state, and federal levels requires basic knowledge of both ground and surface water supplies and of the alternative means of conserving, utilizing, and protecting those supplies. This component provides for basic definition of these resources, outlines and evaluates alternative plans for effectively conserving, utilizing, and protecting those supplies.

OUTPUT SCHEDULE

Ground Water Basin Resources

Study or Area	Date Started	Date to be Completed	Type of Report
Sacramento Valley, 1st Phase (ND)	7/70	12/75	Bulletin No. 118-6
Sacramento Valley, 2nd Phase (ND)	7/75	7/79	
Wells in Rock Areas (All)	7/72	6/77	Bulletin No. 118-5
Artificial Recharge (All)	7/72	6/76	Bulletin No. 118-7

Ground Water in Fractured Rocks			
Western Solano Co. (CD)	7/75	6/78	Bulletin
Sierra Nevada (CD)	7/76	6/79	Bulletin
Napa Co. (CD)	7/76	6/80	Bulletin
Lake Arrowhead Area (SD)	7/76	6/78	Bulletin

Ground Water Basin Protection

Study or Area	Date Started	Date to be Completed	Type of Report
Water Well Standards (All Dist. - Continuing)			
Coachella Valley (SD)	7/74	6/76	District
Santa Barbara Co. (SD)	1/76	12/78	Bulletin
Sanitary Landfill Impact			
Los Angeles Co. (SD)	7/69	6/76	Bulletin
Alameda Co. & others (CD)	7/73	6/77	District
Solid Waste Disposal Sites			
Orange Co. (SD)	6/74	9/75	District
San Diego Co. (SD)	10/74	12/75	District
Seawater Degradation (CD)	7/74		District
Freemont Salinity Barrier (CD)	10/68	10/81	Bulletin

Northern California Investigation (ND)

Study or Area	Date Started	Date to be Completed	Type of Report
Sacramento Valley Input to Year 2000 Plan	7/75	6/76	District
Review of USCE Cottonwood Cr. Project	7/75	6/76	District
Sacramento R. Seepage	7/76	7/78	District

Planned Utilization Studies

Study or Area	Date Started	Date to be Completed	Type of Report
Ventura County (SD)	11/68	12/75	Bulletin
San Jacinto Valley (SD)	1/69	12/75	Bulletin
Antelope Valley (SD)	7/72	6/78	Bulletin
Arroyo Grande-Paso Robles (SD)	1/74	12/76	Bulletin

South Coastal Area (SD)	7/76	6/79	Bulletin
Input to Year 2000 Plan (SD)	7/75	12/76	Memoranda
Technique Development (SD)	7/76	6/78	District
Livermore Valley (CD)	1/75	6/78	Bulletin
South Santa Clara County (CD)	7/69	1/77	Bulletin
Rohnert Park (CD)	3/75	6/77	Bulletin
Sonoma County (CD)	10/75	1/81	Bulletin

Local Projects Assistance (All)

(Letter or memorandum reports prepared upon completion of short-term study requested by local agency.)

Delta Regional Resources Study (CD)

Study or Area	Date Started	Date to be Completed	Type of Report
Delta Resources Inventory		6/75	District
Delta Resources Management Plan		6/77	District

San Diego Coastal Lagoons (SD)

Study or Area	Date Started	Date to be Completed	Type of Report
San Diego (Coop)	1/74	6/76	Bulletin 186

Local Project Planning (ND)

Trinity River Fish and Wildlife Studies		12/77	District

OBJECTIVE

The overall objective is to develop and disseminate basic information on ground and surface water supplies, and to outline and evaluate alternative plans for conserving, utilizing, and protecting those supplies. The information developed, much of which will be input to the Year 200 Plan, will be used to guide local, state, and federal agencies in effective water resources management.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

Environmental Considerations

These studies involve either data collection activities, which are a categorically exempt activity under Section 547, Class 6, or are planning studies which do not require an environmental impact report in accordance with Section 544 of the DWR Environmental Regulations. Section 21102 of CEQA requires that this component include consideration of environmental factors. EIR's are required for San Fernando Valley Conjunctive Use Project and for the Freemont Salinity Barrier.

	FUNDING	
	G	R
Ground Water Basin Resources	$324,000	-

Sacramento Valley Ground Water - (ND, Coop. w/USGS)

Prepare Bulletin 118-6 on first phase of study and initiate second phase of study on West Side, including detailed well canvass a d geohydrologic studies.

Wells in Rock Areas

All Districts to complete District reports on location construction of wells in hard rock areas; CD to incorporate results into Statewide Bulletin 118-5. Provide input to Year 2000 Plan. CD to initiate 3-year study to evaluate total ground water resource of Suisun-Fairfield ground water basin and surrounding mountainous areas.

Artificial Recharge

All Districts to complete District reports on ground water recharge practices; SJD to incorporate results into Statewide Bulletin 118-7. Provide input to Year 2000 Plan.

Ground Water Basin Protection	$225,000	$31,000

All Districts to develop information and assist local agencies and Water Quality Control Boards in formulating and adopting water well standards. SJD to cooperate with USGS on land subsidence study in San Joaquin Valley. SD and CD to continue with Seawater Degradation and Freemont Salinity Barrier Studies.

	G	R
Northern California Investigation	$200,000	-

Evaluate water allocations on west side of Sacramento Valley with emphasis on USBR West Sacramento Canal Service Area and provide input to Year 2000 Plan. Review USCE proposed Cottonwood Creek Project and prepare report; continue gathering environmental base line data on Sacramento River.

Planned Utilization Studies	GF PF	$415,000 140,000	$133,000

Prepare bulletins summarizing the results of Ventura County and San Jacinto Area investigations. Continue investigations of Arroyo Grande-Paso Robles, Antelope Valley, Livermore Valley, Santa Clara County, and Rohnert Park. Initiate investigations of Sonoma County and South Sacramento Valley. Continue implementation studies of Raymond Basin, Bunker Hill-San Timoteo Area, and Chino MWD Area. Conduct conjunctive use studies in San Fernando Valley and in other So. District basins and in San Joaquin Valley. Develop input to Year 2000 Plan.

Local Projects Assistance	$ 20,000	-

At request of local agencies, conduct short-term studies to assist them in formulating programs to meet water supply needs.

Delta Regional Resources Study	$ 85,000	-

Continue data gathering and formulation of comprehensive Delta Resources Management Plan, including improvement of leeves.

San Diego Coastal Lagoons	$ 21,000	$ 22,000

Complete studies of stream sediment production and effects on San Diego streams and lagoons and prepare Bulletin 186.

Local Projects Planning	$150,000	-

Continue studying Trinity R. fish and wildlife problems, including evaluation of increased flow releases from Trinity Reservoir, fish hatchery improvement, sediment removal from spawning areas, and debris dam construction on Grass Valley Creek. Input will be provided to Year 2000 Plan.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

Environmental Considerations

(same as 1975-76)

Ground Water Basin Resources	$364,000	-

Sacramento Valley Ground Water - (Coop. w/USGS)

Continue geohydrologic studies on West Side and evaluate subsidence potential.

Wells in Rock Areas

CD to prepare and publish bulletin, initiate 3-year study to evaluage ground water resources of rock areas in Serra Nevada and continue study in Western Solano Co. SD to initiate study in the Crestline-Lake Arrowhead Area.

Ground Water Basin Protection	$100,000	$31,000

All Districts to develop inforation and assist local agnecies and Water Quality Control Boards in formulating and adopting water well standards. SJD to continue coop. on land subsidence w/USGS. CD to continue evaluation of sanitary landfill impact and assist in development of Freemont Salinity Barrier.

Northern California Investigation	$225,000	-

Provide input to Year 2000 Plan, with emphasis on problem areas identified during previous year; continue collecting environmental base line data on Sacramento River; initiate Sacramento River Seepage Study.

Planned Utilization	GF $425,000 PF 150,000	$ 80,000

Complete the investigation in Arroyo Grande-Paso Robles and Rohnert Park Areas and finalize the input to the Year 2000 Plan. Continue the investigations in Antelope Valley, Livermore Valley, Santa Clara County, and Sonoma County. Also, continue the implementation studies of Raymond Basin, Bunker Hill-San Timoteo Area, and Chino MWD Area. Continue the conjunctive use or SWP water study in Raymond Basin, Chino Basin and others, and in San Joaquin Valley. Initiate

South Coastal Area Regional Water Resources Management Study, a study to improve the quantity model verification procedure, and San Luis Obispo County water resources management study.

Local Projects Assistance $ 20,000 -

At request of local agencies, conduct short-term studies to assist them in formulating programs to meet water supply needs.

Delta Regional Resources Study $ 85,000 -

Complete formulation of comprehensive Delta Resources Management Plan and preparation of report.

Local Projects Planning $150,000 -

Continue studying Trinity R. fish and wildlife problems, including evaluation of increased flow, releases from Trinity Reservoir, fish hatchery improvement, sediment removal from spawning areas, and debris dam construction on grass Valley Creek. Input will be provided to Year 2000 Plan. Prepare report for input to Year 2000 Plan.

INPUT

	1974-75	1975-76	1976-77
General Fund--Support	$1,490,000	$1,440,000	$1,369,000
Project Fund	67,000	140,000	150,000
Reimbursable--Cash	177,000	186,000	111,000
Total	$1,734,000	$1,766,000	$1,630,000
Man-Years			
General Fund--Suport	39.2	37.9	36.0
Project Fund	1.8	3.7	3.9
Reimbursable--Cash	4.7	4.9	2.9
Total	45.7	46.5	42.8

SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Year Major Activity and/or Study	M.Y.	Fund	($1,000s) Organization and Source of Funding DP	ND	CD	SJD	SD	Totals	Coop 2/ Services
Expenditures for 1975-76									
Ground Water Basin Resources	8.5	G	-	222	25	45	32	324	
Ground Water Basin Protection	6.7	(G	11	16	68	36	94	225	
		(R	-	-	23	-	8	31	
Northern California Inv.	5.3	G	-	200	-	-	-	200	
Planned Utilization	18.1	(G	-	-	77	40	298	415	
		(P	-	-	0	40	100	140	
		(R	-	-	44	0	89	133	
Local Projects Assistance	0.5	G	20	-	-	-	-	20	
Delta Regional Resources	2.2	G	-	-	85	-	-	85	
San Diego Coastal Lagoons	1.1	(G	-	-	-	-	21	21	
		(R					22	22	
Local Project Planning	4.0	G	-	150	-	-	-	150	
Totals 1975-76	37.9	G	31	588	255	121	445	1,440	
	3.7	P	0	0	0	40	100	140	
	4.9	R	0	0	67	0	119	186	
	46.5		31	588	322	161	664	1,766	
Expenditures for 1976-77									
Ground Water Basin Resources	9.6	G	-	312	20	-	32	364	
Ground Water Basin Protection	3.4	(G	5	12	30	21	32	100	
		(R	-	-	21	10	-	31	
Northern California Inv.	5.9	G	-	225	-	-	-	225	
Planned Utilization	17.2	(G	-	-	115	50	260	425	
		(P			-	50	100	150	
		(R			21	0	59	80	
Local Projects Assistance	0.5	G	20	-	-	-	-	20	
Delta Regional Resources	2.2	G	-	-	85	-	-	85	
Local Project Planning	4.0	G	-	150	-	-	-	150	
Totals 1975-76	36.0	G	25	699	250	71	324	1,369	
	3.9	P	0	0	0	50	100	150	
	2.9	R	0	0	42	10	59	111	
	42.8		25	699	292	131	483	1,630	

R. Whiting
June 27, 1975

ENVIRONMENTAL IMPACT ANALYSIS
PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

The environmental impact analysis program became operational in August 1971 to ensure that all department activities are conducted in compliance with the California Environmental Quality Act (CEQA) and, when applicable, with the National Environmental Policy Act (NEPA). The program initially was directed toward development of environmental assessment methods and techniques for use by the planning personnel of the Department. However, changes in CEQA and court decisions modified activity primarily toward development of a workable system for compliance with CEQA and review of environmental documents.

Regulations of the Department of Water Resources for Implementation of the California Environmental Quality Act of 1970 as required by the amendments of 1972 were published in 1973.

Need

Public concern over man's relation to his environment has caused a reassessment and reevaluation of many traditional concepts and techniques that were both relevant and sufficient for water resources planning in the past. Emerging public interest and claims for increased attention to natural environmental amentities requires development of methods to express such amentities in quantitative or qualitative terms to compare all aspects of proposed projects or water management proposals. Resource management agencies must be apprised of up-to-date evaluations of the impact of such proposals upon the state's natural resources.

OUTPUT

This component is a continuing activity to assure an integrated environmental approach for the Department's activities.

Review of environmental documents from public agencies	Continuing
Advisory, review, and educational services to all DWR units	Continuing
Review and update DWR guidelines for compliance with CEQA	As required

Update and expand DWR Handbook
on Environmental Planning Guidelines — As necessary

OBJECTIVE

To update and expand guidelines for integrating environmental information and other noneconomic factors into the Department's planning, evaluation, and decision making processes; to coordinate specific environmental studies; to prepare, analyze, and review environmental documents; to provide advisory and educational services to all units of the Department; and to serve as the focal point in the Department for environmental matters.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

1.	Preparation and processing of environmental documents	$ 25,545
2.	Provide advisory and training assistance to all department units in the preparation and processing of environmental documents	$ 9,793
3.	Continue environmental education program to advise and aid department employees, other public employees and anyone else the department comes in contact with in understanding how various department and agency activities relate to the environmental assessment process	$ 5,895
4.	Update and expand Handbook on Environmental Planning Guidelines	$ 5,895
5.	Review federal, state, and local environmental impact statements and reports	$ 64,875

Environmental Considerations

Program activities under this component consist primarily of procedures development, review, and staff advice. It can be seen with a certainty that these activities will not have a significant effect on the environment and are exempt from the requirements for the preparation of environmental documents under Section 543 of the Department Environmental Regulations.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

1.	Preparation and processing of environmental documents	$ 25,545
2.	Provide advisory and training assistance to all department units in the preparation and processing of environmental documents	$ 9,793
3.	Continue environmental education program to advise and aid department employees, other public employees and anyone else the Department comes in contact with in understanding how various department and agency activities relate to the environmental assessment process.	$ 5,895
4.	Update DWR Handbook on Environmental Planning Guidelines	$ 5,895
5.	Review federal, state, and local environmental impact statements and reports	$ 64,875

Environmental Considerations

Same as 1975-76.

INPUT

	1974-75	1975-76	1976-77
General Fund	$128,000	$112,003	$112,003
Man-Years	4.4	3.4	3.4

Richard Meffley
Max Hubbart
William Hudson

June 20, 1974

MORE EFFECTIVE CONSERVATION AND USE OF WATER PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

Work started on this program July 1, 1973. Funds were originally divided equally among the four districts. At the 1974 program conference, the funds were split between the San Joaquin and Southern Districts only.

The program in the San Joaquin District will be accomplished under contract with the University of California, Berkeley, instead of with Department personnel as originally contemplated.

Need

The increased public interest and concern for conserving resources and protecting the environment have brought about the need to conserve available water resources by increasing the effectiveness of agricultural and urban water use management.

OUTPUT SCHEDULE

Type of Report	Title or Subject	Date
Department	Conservation of water	August 31, 1975
District	Urban water conservation	
	Comparison of water application and irrigation efficiency of drip, sprinkler, and furrow irrigation.	
Contractor	Progress report	April 1976 and 1977
District	Final report	June 1978

OBJECTIVE

To identify geographic areas where more effective water use and management practices could be applied, to assess the potential for meeting additional water requirements through application of new management practices in connection with existing water development, and to work with local water agencies to develop implementation programs.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

1. Prepare urban section of bulletin on conservation of water being prepared under Division of Planning direction.

2. Complete report on urban water conservation.

3. Organize and conduct conference on urban water conservation.

4. Organize and implement program to measure the effect of water-saving devices on per capita consumption at U. S. Navy bases at Camp Pendleton and Twenty-nine Palms, and other locations where the opportunities arise.

5. Study in detail the factors which most greatly influence urban water use and are most promising for implementation. The report on urban water conservation will identify these factors.

6. Provide advice to local agencies with water supply problems.

7. Administer contract with University of California which includes installation of irrigation equipment and measuring devices to evaluate drip, sprinkler, and furrow methods of irrigation on a comparative basis -- application rates, irrigation efficiency, crop yields, soil salinity, etc. Field application measurements will commence with the 1976 irrigation season.

8. Provide input to bulletin on conservation of water on agriculture water use based on today's knowledge of water application and efficiencies.

Environmental Considerations

Most of the work under this program is a collection of information which is Class 6 Categorical Exemption in accordance with Section 547 of the Department's Environmental Regulations. Part of the work is feasibility and planning studies, which is a non-project exemption under Section 544.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

1. Continue monitoring the effect of water-saving devices on per capita consumption.

2. Report results of the selected factors most greatly influencing water use and continue to collect and refine data.

3. Continue providing advice to local agencies on water supply problems.

4. Administer contract with University of California and cooperate in studies being accomplished. Expand analysis to include other crops if first year's study warrants additional information.

5. Evaluate results of first year's endeavor to ascertain the value of information being compiled.

Environmental Considerations

Same as above in 1975-76.

INPUT

	(in $1,000's)		
	1974-75	1975-76	1976-77
General fund support	115	141	191
Man-years	3.2	3.1	4.3

MORE EFFECTIVE CONSERVATION AND USE OF WATER
(Work Authority SJD 1487, SD 1488)

SUPPLEMENT TO COMPONENT STATEMENT

Major Activity and/or Study	M.Y.	(in $1,000's) (General Funds) Organization SJD	SD	Totals
Expenditures for 1975-76				
Urban studies in Southern California	2.4	--	71	71
Contract with University of California, Berkeley, concerning comparative analysis of different types of irrigation in Fresno County	--	48	--	48
Administer contract and provide agriculture input to bulletin on conservation of water	0.7	22	--	22
Totals for 1975-76	3.1	70	71	141
Expenditures for 1976-77				
Urban studies in Southern California	3.2	--	95	95
Contract with University of California, Berkeley, concerning comparative analysis of different types of irrigation in Fresno County	--	48	--	48
Administer contract, prepare report on data collected, and expand field analysis to another crop if warranted	1.1	48	--	48
Totals for 1976-77	4.3	96	95	191

R. Whiting
Robert F. Clawson, ND
Jacob Angel, CD
Victor B. McIntyre, SJD
David J. Tong, SD

June 27, 1975

QUALITY OF WATER SUPPLIES
PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

The water quality investigation and advisory activities of this program component started in 1950 with the inception of The Dickey Water Pollution Act, and concurrent departmental responsibility. Following passage of the Porter-Cologne Act in 1969 and increasing federal and state regulation of waste discharges departmental requirements for knowledge of quality of water supply and agricultural waste water management increased. For 1976-77, the Water Quality Investigation component is divided into Quality of Water Supplies and the Agricultural Waste Water Management to reflect current needs.

Departmental responsibilities for Quality of Water Supplies and the integration and implementation of the Basin Water Quality Control Plans in the California Water Plan in Year 2000 will be emphasized. 1974-75 was a transition year. The program emphasis in the quality of water supplies and agricultural water management was commenced.

This program component provides finding a strong working relationship with the regional water quality control boards, with local governments and with other departmental programs.

There have been small formal cooperative water resources management activities with the Counties of Colusa, Plumas, Butte, and Lake. During this same period the program component enabled participation through informal cooperation in water management problems of Lassen and San Bernardino Counties, the City of Los Angeles, and numerous other agencies throughout the State.

In the 1971-72 fiscal year, this program component was given responsibility for administration of a $25,000 per year state matching contribution to a water quality study of Clear Lake by the Lake County Flood Control and Water Conservation District. Participation by the Department may end on June 30, 1976.

Need

The Department has responsibility to evaluate the State's water resources to assure adequate water supply of suitable quality, to conserve water, to minimize additional development, and to protect the environment.

Rigid federal and state water quality requirements for waste discharges lessen the need for technical aid in establishing waste discharge limits. Conversely, more effort is needed to relate quality and quantity to insure that the State's water needs will be met most effectively.

There are special needs for knowledge of:

1. the quality of the State's water resources;
2. how quality needs can be met at reasonable costs;
3. benefits and costs of meeting water quality objectives;
4. alternative water quality objectives;
5. new water supplies, if any, needed to meet water quality objectives; and
6. the evaluation of water quality problems and recommendations for solution.

OUTPUT

This is a continuing activity, with no specific interim dates. Work activities are responsive to needs which must be met within specified reaction times of from one week to less than one year.

Responses will be made to significant proposed waste discharge requirements to the originating regional board. Departmental input to board water quality control plans require from a week to several months. This material is also reported to the boards by memorandum.

Short-term water quality studies to define and document areal water quality conditions; determine the nature, and extent and severity of specific problems; and to evaluate water quality studies for independent budgeting, are limited to 12 months' duration and $18,000 of state funds. Studies are scheduled at the beginning of each fiscal year, with priorities reexamined as unexpected problems arise. Hence, these activities cannot be scheduled in detail far enough in advance to appear in this budget statement.

Studies are conducted to integrate basin water quality control plans with water resource planning activities of the Department. These are scheduled concurrently with departmental planning efforts in specific areas.

Currently scheduled special studies:

Economics of Water Quality	June 1977

OBJECTIVES

1. To interpret and make available information on quality of the State's water resources, and to evaluate means to prevent or alleviate damage to these water resources.

2. To meet department responsibilities as specified in Water Code Section 13225(c), to assist the water quality control boards in formulating water quality control plans and in regulating waste discharges by providing data, evaluation, and recommendations.

3. To provide information and analysis to assist in adequately integrating water quality considerations into the planning programs of the Department.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

Division of Planning

Policy and budget coordination of district activities will be maintained. The Division uses no funds from the program.

Districts

Common work program of each district includes the following:

1. Program Administration $ 64,900 G

   a. Program management activities including budgeting, reporting status, personnel actions, and supervision.

   b. Prepare and present testimony before the regional water quality control boards on all matters concerning the Department.

2. Board Activities

   a. Comments on waste discharge requirements and other information and assistance to the regional water quality control boards. $ 65,000 G

   b. Provide assistance to the regional water quality control boards in evaluating surveillance systems and implementing water quality control plans established under the State Porter-Cologne Act and the Federal Water Pollution Control Act Amendments of 1972. $ 41,000 G

3. Department Responsibility

a. Integrate basin water quality plans into the California Water Plan - Year 2000. $ 176,600 G

b. Conduct special investigations to evaluate quality of the waters of the State and to evaluate water quality problems and recommend solutions. $ 74,300 G

c. Evaluate economic impact of water quality on municipal water supplies $ 20,000 G

Environmental Considerations

Activities in this element consist of (1) data and (2) feasibility and planning studies.

1. Data is categorically exempt under Section 547, Class 6, of the Department of Water Resources' regulations.

2. Feasibility and planning studies do not require an environmental impact report in accordance with Section 544 of the Department Environmental Regulations. Section 21102 of CEQA requires such studies to include consideration of environmental factors.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

Division of Planning

Policy and budget coordination of district activities and liaison with the State Water Resources Control Board, will be maintained.

Districts

Common work program of each district includes the same items of work as listed under work program for 1975-76 as follows:

1. Program Administration $ 64,940 G

2. Board Activities $ 105,939 G

3. Department Responsibility

a. Integrate Basin Water Quality Plans $ 176,609 G

b. Special Investigations $ 74,297 G

4. Evaluate economic impact of water quality on municipal water use. $ 20,000 G

Environmental Considerations

Same as 1975-76.

COMPONENT INPUT

	1974-75	1975-76	1976-77
General Funds	$607,000	$441,785	$441,785
Man-Years	19.8	14.6	14.6

*Includes $216,000 and 6.1 man-years for Agricultural Waste Water Management. These two program components were part of Water Quality Investiagations in 1974-75 and prior years.

QUALITY OF WATER SUPPLIES

(Work Authority 1297 DP
1173 ND
1174 CD
1175 SJD
1176 SD)

SUPPLEMENT TO COMPONENT STATEMENT

FISCAL YEAR Major Activity and/or Study	MY	Funds	($1,000s) Organization and Source of Funding DP	ND	CD	SJD	SD	Total
EXPENDITURES FOR 1975-76								
Administration	2.2	G	-	12.8	18.7	14.7	18.7	64.9
Board Activity								
Waste Disc. Requirmt.	2.2	G	-	7.9	15.8	10.8	30.5	65.0
Regional Board Support	1.3	G	-	5.0	10.0	6.0	20.0	41.0
Department Responsibility								
Impl. of WQ Basin Plans	5.8	G	-	23.0	43.5	24.0	86.1	176.6
Spec. Investigations	2.5	G	-	16.2	16.2	16.3	25.6	74.3
	0.6	G	-	-	-	20.0	20.0	20
Totals 1975-76	14.6	G	-	64.9	104.2	71.8	200.9	441.8
EXPENDITURES FOR 1976-77								
Administration	2.2	G	-	12.8	18.7	14.7	18.7	64.9
Board Activities								
Wate Disc. Requirmt.	2.2	G	-	7.9	15.8	10.8	30.5	65.0
Regional Board Support	1.3	G	-	5.0	10.0	6.0	20.0	41.0
Department Responsibility								
Impl. of WQ Basin Plans	5.8	G	-	23.0	43.5	24.0	86.1	176.6
Spec. Investigations	2.5	G	-	16.2	16.2	16.3	85.6	14.3
	0.6	G	-	-	-	-	20.0	20.0
Totals 1976-77	14.6	G	-	64.9	104.2	71.8	200.9	441.8

R. Whiting
Robert F. Clawson, ND
Jacob Angel, CD
Victor B. McIntyre, SJD
David J. Tong, SD

June 26, 1975

AGRICULTURAL WASTE WATER MANAGEMENT
PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

Agricultural Waste Water Management was included as part of Water Quality Investigations in 1974-75 and became a separate program in 1975-76.

A study on management of agricultural water use and drainage was started in the last half of the 1974-75 fiscal year. This program will serve as the focal point for coordination of other program activities relating to agricultural waste water, including implementation of the San Joaquin Drain, use of agricultural waste water for power plant cooling, desalting and agricultural waste water monitoring.

Need

Agriculture uses more than 25 million acre-feet of water annually, concentrating the salts in perhaps half that volume of waste or return flow. The return flows also contain pesticides, turbidity, and nutrients. These create water quality problems. Agriculture is experiencing drainage and salt disposal problems which must be resolved if agriculture is to be maintained. PL 92-500 will control and regulate agricultural return flows. These water quality and agricultural production problems must be resolved through integrated technical, institutional and financial considerations.

The approach will be: (1) evaluate, on the basis of existing information, present Central Valley conditions; (2) pursue those specific studies identified in the presently ongoing investigation; (3) integrate agricultural water management in the Central Valley into the California Water Plan, Year 2000; (4) coordinate departmental agricultural waste water management activities.

OUTPUT

The initial output from this component will be a bulletin prepared through the assistance of agricultural expert consultants relating the present conditions, defining problems, discussing alternative strategies, proposing policy, delineating areas for detailed study, recommending needed research and outlining the general direction this component should go.

This bulletin is scheduled for publication in June 1976. Subsequently, detailed studies will be conducted of specific problems and areas as defined in the current study. Also, viable agricultural water management in the Central Valley will be integrated into the California Water Plan, Year 200.

OBJECTIVES

The long-range objective of the new program is the determination of how to manage the agricultural return flows from irrigated agriculture in California to achieve salt control, maintain irrigated agriculture, insure the highest quality of surface and ground waters, and provide for the most efficient use of water. The immediate task is to develop policies and guidelines for California to guide development of specific solutions for agricultural waste water management for use by the Department, the Legislature, agricultural interests, control agencies, and the concerned public.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

The work for 1975-76 will be the completion of the current ongoing study of agricultural water management in the Central Valley.

Division of Planning

Policy and budget coordination of district activities will be maintained by The Division of Planning.

Districts

Studies will be conducted within the Central Valley as follows:

1. Determination of:

    a. generalized quantity, quality, and disposition of agricultural return flows,

    b. relation of agricultural return flows to water supply and pollution potential,

    c. problem areas for agriculture, immediate or potential, assess magnitude, area and priority - look at problem with respect to area causing problem and area experiencing problem,

    d. agricultural return flow problems for water quality, including salts, nutrients, turbidity, and pesticides,

    e. legal powers and ability of existing districts to manage and control agricultural return flows, and assessment of needed powers or districts,

f. possible methods to be considered to control agricultural return flows such as concentration, separate drains, salt sinks, and more efficient use of water,

g. technical state of the art on agricultural soilwater relationships,

h. costs, benefits, and financing of agricultural waste water control and management,

i. agricultural water use and leaching (irrigation efficiency) practices.

2. Produce a bulletin which reports the results of the evaluation outlined in (1) above, and proposing general principles and policies on:

a. methods of agricultural waste water management in California,

b. needed research,

c. financial arrangements to support agricultural waste water management,

d. needed legislation,

e. specific studies to be undertaken in the immediate future.

3. Initiate proposed studies in the districts and research outlined in the bulletin (see 2 above). $ 110,000 G

Environmental Considerations

Activities in this element consist of (1) data and (2) feasibility and planning studies.

1. Data is categorically exempt under Section 547, Class 6, of the Department of Water Resources' regulations.

2. Feasibility and planning studies do not require an environmental impact report in accordance with Section 544 of the Department Environmental Regulations. Section 21102 of CEQA requires such studies to include consideration of environmental factors.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

Division of Resources Development

Policy and budget coordination of district activities will be maintained.

DISTRICTS

Studies will be conducted within the Central Valley to include consideration of the folling as the basis for administrative policy for allocation of water supplies and priorities of funds for water management:

1. quantity, quality, and disposition of agricultural return flows,
2. relation of agricultural return flows to water supply and pollution potential,
3. problem areas for agriculture, (immediate or potential),
4. agricultural return flow problems for water quality, including salts, nutrients, turbidity, and pesticides,
5. legal powers and ability of existing districts to manage and control agricultural return flows, and assessment of needed powers or districts,
6. possible methods to be considered to control agricultural return flows such as concentration, separate drains, salt sinks, and more efficient use of water,
7. costs, benefits, and financing of agricultural waste water control and management,
8. agricultural water use and leaching (irrigation efficiency) practices.

Districts' studies will be input to Bulletin 160-77, California Water Plan, Year 2000.

Environmental Considerations

Same as 1975-76.

COMPONENT INPUT

	1974-75	1975-76	1976-77
General Funds	*	$ 216,065	$ 216,000
Man-Years	*	6.1	6.1

* Included in Water Quality Investigations in 1974-75.

AGRICULTURAL WASTE WATER MANAGEMENT

(Work Authority 1142 DRD
1143 ND
1144 CD
1143 SJD)

SUPPLEMENT TO COMPONENT STATEMENT

FISCAL YEAR Major Activity and/or Study	($1,000s) Organization and Source of Funding							
	M.Y.	Funds	DRD	ND	CD	SJD	SD	Total
EXPENDITURES FOR 1975-76	6.0	G	27.0	54.0	65.0	70.0	-	216.0
Totals for 1975-76	6.0	G	27.0	54.0	65.0	70.0	-	216.0
EXPENDITURES FOR 1976-77	6.0	G	12.0	59.0	70.0	75.0	-	216.0
Totals for 1976-77	6.0	G	12.0	59.0	70.0	75.0	-	216.0

June 26, 1975

POWER PLANT COOLING BY AGRICULTURAL WASTE WATER
PROGRAM COMPONENT STATEMENT

SYNOPSIS

istory

Large quantities of cooling water are used consumptively in the operation of thermo-electric power plants. At inland plant sites where sea water for once-through cooling is not available other water supplies must be used in an evaporative cooling system, such as cooling towers. Agricultural waste water is one possible source of a water supply for an evaporative cooling system. In September 1974 the Legislature passed the Waste Water Reuse Law of 1974 where it directs the Department to conduct studies and investigations on the use of reclaimed waste water for cooling thermal electric power plants and to further development of the technology of waste water reclamation. In May 1975 DWR signed contracts with three major California electric utilities and the Electric Power Research Institute for funding a study on the use of agricultural waste water for power plant cooling. DWR also signed an agreement with the University of California for technical assistance.

Need

Use of waste water in evaporative cooling systems for power plants at inland plant sites will allow fresh water supplies to be used for other purposes. To evaluate the suitability of agricultural waste water for use in an evaporative cooling system, adequate pretreatment and post-treatment must be evaluated and operating criteria developed for systems using the waste water.

OUTPUT SCHEDULE

Study	Power plant cooling by agricultural waste water
Cooperators	Los Angeles Department of Water and Power, Pacific Gas and Electric Co., Southern California Edison Co., Electric Power Research Institute, University of California at Berkeley
Date Started	June 1975
Type of Report	Interim report, October 1976; Final bulletin report, January 1978; and Quarterly progress reports
Completion Date	June 1978
Expiration Date of Contracts	Utilities and Electric Power Research Institute, June 1978; University of California, October 1977

OBJECTIVE

To obtain the data and information necessary to make designs and cost estimates of treating and processing agricultural waste water for use in evaporative systems for power plant cooling purposes, and to develop means of brine disposal to comply with discharge requirements for power plants.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

G $10,000
P $36,800
R$187,200

Treatment processes and test equipment will be developed for pretreatment and post-treatment of agricultural waste water for power plant cooling. The principal test equipment will be an ion exchange unit and interface-enhance vertical tube evaporator. A cooling tower will be developed to provide data on permissible solute concentration levels and methods for controlling biological growth and fouling. The pilot plant test equipment will be assembled and operated first separately and then as an integrated operation by the University of California prepatory to moving to the Department Waste Water Treatment Evaluation Facility at Firebaugh where the Department will operate field tests.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

G $10,000
P $42,400
R $209,600

DWR will operate the test facilities at the Firebaugh field testing site in different modes to determine feasible means to use agricultural waste water for power plant cooling. The test facilities will include an ion exchange unit, an interface-enhanced vertical tube evaporator, a foam fractionation unit, a cooling tower and auxillary equipment. The test data obtained will provide the necessary information needed for the design of a full-size cooling facility and for making a cost estimate of its operation. This design and cost information is not presently available but is essential for realistic evaluation of utilizing agricultural waste water in power plant coolant loops of both conventional and advanced design.

ENVIRONMENTAL CONSIDERATIONS

The pilot plant testing of agricultural waste water for power plant cooling is exempt under Section 544 of the Department's regulations pertaining to the Environmental Quality Act of 1970, as feasibility and planning studies not requiring an EIR but shall nevertheless include consideration of environmental factors.

INPUT

	1974-75		1975-76		1976-77	
	M.Y.	$	M.Y.	$	M.Y.	$
General Fund -- Support	---	550	0.1	10,000	0.2	10,000
Project Fund	---	1,850	0.1	36,800	0.7	42,400
Reimbursable Cash	0.1	9,600	0.4	187,200	3.3	209,600
TOTAL	0.1	12,000	0.6	234,000	4.2	262,000

POWER PLANT COOLING BY AGRICULTURAL WASTE WATER
W.A. 1242 - Environmental Quality Branch, DP

SUPPLEMENT TO COMPONENT STATEMENT

FY 1975-76	M.Y.	Fund	Organization and Source of Funding DP	SJD	Totals
Expenditures for 1975-76					
	0.1	G	10	0	10
	0.1	P	36	1	37
	0.4	R	183	4	187
TOTALS 1975-76	0.6	G	10	0	10
		P	36	1	37
		R	183	4	187
Expenditures for 1976-77					
	0.2	G	3	7	10
	0.7	P	14	28	42
	3.3	R	69	141	210
TOTALS 1976-77	4.2	G	3	7	10
		P	14	28	42
		R	69	141	210

BRICE
6/25/75

SALINE WATER CONVERSION
PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

Saline Water Conversion program activities were started in 1957. Since that time, several cooperative agreements have been signed with the federal Office of Saline Water (OSW). One of the first significant agreements with OSW was the DWR-OSW agreement for the construction of the Point Loma sea water conversion plant in 1960. In 1966, the State's interest in the Point Loma plant was transferred to the San Diego Saline Water Test Facility by DWR-OSW agreement. Also in 1966 DWR entered into an agreement with OSW and the City of San Diego to market desalted water to the City through a department-built and -operated pipeline facility. The Test Facility has been shutdown and the site restored. The pipeline was shutdown in 1973. In August 1974 a termination agreement concerning the State's interest in the Test Facility was entered into between DWR and OSW.

The Cobey-Porter Saline Water Conversion Law of 1965 made possible the marketing of desalted water as well as authorizing the Department to participate in future desalting plant studies, construction, and operation. In 1970, DWR and OSW agreed to cooperate on a feasibility study for a 40-million-gallon-per-day prototype desalting plant on the California coast. That study, called the Diablo Canyon Desalting Project, was completed in 1972.

We have had technical cooperation with the University of California since the inception of our program in 1957. In 1971, an experimental reverse osmosis desalting unit to desalt agricultural waste water was built by the University and installed by DWR at the Firebaugh Test Station under an agreement with the University. In 1972, OSW joined DWR in a cooperative agreement for testing at Firebaugh by furnishing two RO units with different membrane configuration and composition. The first phase of this test program was completed by the end of 1974. In 1973, a university-built unit was installed to desalt Colorado River water for water quality improvement at the Weymouth Water Treatment Plant of The Metropolitan Water District of Southern California. The MWD operated the unit for the Department until April 1975 when the test was completed and the unit removed. In April 1975 we entered into a memorandum of understanding with the Marin Municipal Water District to test reverse osmosis desalting on secondary treated municipal waste water. Equipment is now being fabricated.

Three bulletins on desalting have been prepared, the latest of which is Bulletin No. 134-69, "Desalting - State of the Art", June 1969. Three reports on the Diablo Canyon Project were prepared including the "Feasibility Report, Diablo Canyon Desalting Project", March 1972. Bulletin 193, "Desalting in Ten California Communities" - Reconnaissance Evaluation Report was released in 1975.

Need

A desalting effort focused on the areas of primary concern, conservation and reuse, and information on desalting to improve water quality for both use and reuse, to treat waste water for power plant cooling and reclaim waste water by a desalting step and to desalt brackish, sea water or other saline water

is required to assess the role of desalting in water resource development in the State. Because of the effort in water quality improvement and more strigent requirements on the release of chemicals into the waterways of the state, there is more activity in water treatment and there is a need to evaluate the role desalting can play in this area including the removal of virus, stable organics and trace heavy metals by membrane desalting processes. These desalting applications will be a part of developments that result in more efficient management of water resources as well as reuse of these resources to a much greater extent than has been practiced in the past. To be responsive to these needs the desalting of agricultural waste water, municipal waste water, and other brackish water supplies is being given increased emphasis.

OUTPUT SCHEDULE

Study	Desalting Agricultural Waste Water
Cooperator	University of California
Date Started	July 1971
Type of Report	Annual District Reports, Phase 1 Final Report June 1975, Final Report June 1978
Completion Date	June 1978
Expiration Date of Cooperative Contract	June 1976
Study	Desalting of Raw Municipal Waste Water
Cooperator	City of San Diego
Date Started	July 1972
Type of Report	Interim Memorandum Report June 1975, Final Report October 1977
Completion Date	June 1977
Expiration Date of Cooperative Contract	June 1977
Study	Desalting of Treated Municipal Waste Water
Cooperator	Marin Municipal Water District
Date Started	July 1974
Type of Report	Interim Report June 1975 and June 1976, Final Report October 1977
Completion Date	June 1977
Expiration Date of Cooperative Contract	June 1977

OBJECTIVE

To assess the role of desalted water as a source of supplemental water supply encompassing development, implementation, and assessment of desalting technology including processes for waste water reclamation and by the actual construction and operation of pilot and demonstration plants on selected saline waters, which primarily include agricultural waste water, raw and treated municipal waste water and poor quality surface water.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

Staff Activities and Expertise on Desalting G $97,254

This activity provides departmentwide expertise on exisiting and potential desalting processes, energy requirements and economics, investigates possible application of saline water conversion in state and regional planning and cooperates with others in desalting development and application. This activity provides up-to-date appraisal of the potential role desalting can play in the management of saline, brackish and waste water supplies for reuse in California and assistance to water users with water quality and/or discharge problems from ongoing development activities and information developed by others. This activity includes the management of a program on the study and development of desalting techniques necessary in the treatment of agricultural waste water for power plant cooling and other related cooling water for power plant activities. This activity also supplies information on desalting status, energy requirements and costs to other programs involved in water resources planning and development including the year 2000 plan; and it provides assistance to water purveyors in preliminary consideration of desalting applications. This is the base program activity which serves as program manager for the centrally managed program and from which other desalting activities in the Department originate

Desalting of Treated Municipal Waste Water G $19,835

In cooperation with a local waste water treatment agency, Marin Municipal Water District (MMWD), a pilot plant study will be initiated to evaluate the effectiveness of reverse osmosis desalting techniques in conjunction with conventional waste water treatment systems to improve quality of product water for reuse including removal of stable organic compounds and trace heavy metals. The MMWD will provide the local support, facilities and operating personnel for the pilot plant. The Department will provide the desalting pilot plant equipment and staff consultation.

Desalting Agricultural Waste Water G $59,235
P $119,415

The purchase, installation, and initial checkout operation of a larger reverse osmosis unit to obtain design information and cost data will be completed this year and operation on an annual cycle of agricultural waste water quality will begin. On-site reverse osmosis membrane manufacture will be initiated. Auxiliary studies on membrane deterioration will continue. Ion exchange development based on using concentrated brine from the operation of the reverse osmosis desalter will be continued on a bench-scale level to further develop the pilot plant process. This year's activity is more directly related to solving the problem of agricultural waste water in the San Joaquin Valley than was the earlier technical demonstration work in previous years.

Desalting of Raw Municipal Waste Water G $37,875

The Department is cooperating with the City of San Diego in the desalting of raw municipal waste water by using the reverse osmosis desalting process. During the year, data evaluation will be continued and laboratory analysis will be supported. A study of virus survival and removal by the reverse osmosis membrane used for desalting will be continued. Program and personnel support will be provided on the role of desalting in the south coastal service area of the State Water Project in connection with the 2000 plan.

Environmental Considerations

Staff activities and expertise are exempt under Section 543 of DWR regulations for implementation of the C.E.Q.A., as activities which will not have significant impact on the environment. The desalting for quality improvement of waste water and surface water are exempt under Section 544, as planning studies not requiring an EIR, but shall include consideration of environmental factors.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

Staff Activities and Expertise on Desalting — G $78,600, P $20,500

This activity provides departmentwide expertise on existing and potential desalting processes, energy requirements and economics, investigates possible application of saline water conversion in state and regional planning and cooperates with others in desalting development and application. This activity provides up-to-date appraisal of the potential role desalting can play in the management of saline, brackish and waste water supplies for reuse in California and assistance to water users with water quality and/or discharge problems from ongoing development acitivities and information developed by others. This activity includes the management of a program on the study and development of desalting techniques necessary in the treatment agricultural waste water for power plant cooling and other related cooling water for power plant activities. This activity also supplies information on desalting status, energy requirements and costs to other programs involved in water resources planning and development; and it provides assistance to water purveyors in preliminary consideration of desalting applications. This is the base program activity which serves as program manager for the centrally managed program and from which other desalting activities in the Department originate.

Desalting of Treated Municipal Waste Water — G $35,700

In cooperation with a local waste water treatment agency, Marin Municipal Water District (MMWD), a pilot plant study will be continued to evaluate the effectiveness of reverse osmosis desalting in conjunction with conventional waste water treatment systems to improve quality of product water for reuse including removal of viruses, stable organic compounds and trace heavy metals. The MMWD will provide the local support, facilities and operating personnel for the pilot plant. The Department will provide the desalting pilot plant equipment, replacements of membranes and parts and staff consultation.

Desalting Agricultural Waste Water — G $36,800, P $147,500

The large reverse osmosis unit acquired, checked out and initially operated last year will continue to be operated this year to obtain design information and cost data during an annual cycle of agriculturalwaste water quality. Replacement membranes will be supplied from onsite production. An ion exchange pretreatment unit will be operated using brine from the reverse osmosis process to regenerate the ion exchange resin. The activity is directed at solving the problem of disposal or agricultural waste water in the San Joaquin valley.

Desalting of Raw Municipal Waste Water G $ 62,900

The Department is cooperating with the City of San Diego in the desalting of raw municipal waste water by using the reverse osmosis desalting process. A reverse osmosis membrane desalting unit with membranes similar to those used in the program for agricultural and treated municipal waste waters will be provided and operated in connection with a study on virus removal by reverse osmosis membranes. The removal of stable organic compounds and trace heavy metals will be investigated. During the year, laboratory analysis will also be supported.

Environmental Considerations

Staff activities and expertise are exempt under Section 543 of DWR regulation for implementation of the C.E.Q.A., as activities which will not have significant impact on the environment. The desalting for quality improvement of waste water and surface water are exempt under Section 544, as planning studies not requiring an EIR, but shall include consideration of environmental factors.

INPUT

	1974-75		1975-76		1976-77	
	M.Y.	$	M.Y.	$	M.Y.	$
General Fund--Support	10.0	354,000	6.2	214,199	5.1	214,000
Project Fund	2.4	141,000	2.5	119,415	3.2	168,000
Estimated Value of Cooperator's Service		(90,000)		(75,000)		(100,000)
Total	12.4	495,000	8.7	333,614	8.3	382,000

SALINE WATER CONVERSION
(WA 1343, Environmental Quality Branch, Division of Planning)

SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Year Major Activity and/or Study	M.Y.	Fund	($1,000s) Organization and Source of Funding DP	CD	SJD	SD	TOTALS	Coop Services
Expenditures for 1975-76	3.0	G	97				97	
Staff Activities and Expertise on Desalting Applications								
Desalting of treated Municipal Waste Water	0.3	G		20			20	25
Desalting of Agricultural Waste Water	1.7	G			59		59	
	3.5	P			119		119	
Desalting of Raw Municipal Waste Water	-	G				30	30	50
Year 2000 Plan	0.2	G	—	—	—	8	8	—
TOTALS 1975-76	8.7	G	97	20	59	38	214	75
		P			119		119	

Expenditures for 1976-77	M.Y.		($1,000s) Organization and Source of Funding DP	CD	SJD	SD	TOTALS	Coop Services
Staff Activities and Expertise on Desalting Applications	2.5	G	79				79	
	0.5	P	20				20	
Desalting of treated Municipal Waste Water	0.3	G		36			36	30
Desalting of Agricultural Waste Water	1.0	G			37		37	
	3.8	P			148		148	
Desalting of Raw Municipal Waste Water	0.2	G	—	—	—	62	62	50
TOTALS 1976-77	8.3	G	79	36	37	62	214	80
		P	20		148		168	

D. Finlayson
M. Schwartz
D. Hill
6/25/75

WEATHER MODIFICATION
PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

Departmental activities began in 1951 with the initiation of licensing of weather modification operators. Annual reporting of weather modification activities by each operator began in 1957. The Weather Modification Program became a separate program in 1968-69. Bulletin 16, "Weather Modification Operations in California", which summarizes weather modification activities for the previous year, was published annually until 1974-75 FY.

Contractual studies with Fresno State College Foundation (FSCF) were started in 1969-70 to develop guidelines on three phases of weather modification: evaluation, precipitation increase potential estimation, and cost estimation, with summarizing guidelines for all three phases. Phase I, concerning evaluation, was completed at the end of 1970-71. Phase II, a series of reports summarizing precipitation increase potential, was completed in June 1973. Phase III, cost estimates, was eliminated in July 1973 when the Foundation was dissolved because of withdrawal of U. S. Bureau of Reclamation support.

An interagency agreement for a project design and environmental impact study for a cooperative snow augmentation project in the Sierra Nevada was negotiated with USBR in 1974; it was signed by USBR and submitted for DWR approval in October 1974. (DWR approval is still pending.) The interagency agreement expands the areal coverage to include the upper American River basin. The Department has primary responsibility for the Feather River Basin and the Bureau has primary responsibility for the American River Basin. Funding through 1974-75 has been about even between the two agencies. In 1975-76 Bureau funding will increase and by 1976-77 will be several times that of the Department. The large increase will be due to the high cost of cloud seeding. Expenditure of state funds will be controlled to expend project funds on the Feather River Basin and general funds on both the Feather and American River Basins.

A series of 21 public involvement meetings to discuss the proposed snow augmentation pilot project in the Sierra Nevada were held by DWR and USBR during 1974. The report, "Investigations for Assessing the Environmental Impact of Snow Augmentation in the Sierra Nevada, California", was prepared for DWR and USBR and published by the Center for Regional Environmental Studies, San Diego State University, in October 1974. "A Summary of the Initial Response to a Proposed Research Program for Snow Augmentation in the Sierra Nevada, California" was published by USBR in December 1974. A rawinsonde (air-mass tracking equipment) and other meteorological instrumentation for the project were loaned to DWR by USBR during 1975.

In response to the Director's comments on the 1975-76 Planning Program, and to provide input to the Year 2000 Plan, funding has been reduced $30,000 GR and $20,000 PF below previously planned levels for 1975-76 and 1976-77. The reduced level of base funding may delay installation of some precipitation gages.

Need

The Department carries out the provisions of Chapter 4, Division 1, California Water Code, by issuing licenses to persons engaged in weather modification activities and by receiving and evaluating notices of intention and reports of completion for each operation carried on by each licensee.

Studies indicate that the demand for water and power will continue to increase even beyond 2020. All alternative sources, including water conservation measures, surface water development, increased use of ground water, desalination, reclaimed waste water, geothermal resources, and weather modification, must be explored. The present state-of-the-art for weather modification indicates that a potential additional supply of water could feasibly be developed by weather modification activities. However, a demonstration project, including five years of actual field operations, is needed before the feasibility of developing additional water and power for the State Water Project can be determined with reasonable reliability. Also, the possible effects on communities, transportation, and natural ecosystems which may result from moderate (from 5 to 30 percent) increases in the snowfall of selected storms during other than "wet" years need to be determined.

OUTPUT SCHEDULE

Preliminary Draft EIR for Snow Augmentation Demonstration Project	March 1, 1976
Draft EIR/EIS for the State-Federal Snow Augmentation Demonstration Project	July 31, 1976
USBR Consultant's Final Design Report for Demonstration Project	July 1976
Final EIR/EIS on State-Federal Snow Augmentation Program	July 1977
Snow Augmentation Demonstration Project Feasibility Report	July 1977
Annual Progress Report on Snow Augmentation Demonstration Project	July 1979 and Subsequent Years
Program Final Report	June 30, 1986

OBJECTIVE

Record and regulate California weather modification activities in accordance with the California Water Code. Maintain knowledge and advance expertise in weather modification and, in particular, precipitation management.

Determine the feasibility of development of an additional water supply for the State Water Project by means of weather modification. Determine the environmental effects of weather modification. Provide input for development of improved state regulations governing weather modification operations.

WORK PROGRAM FOR CURRENT YEAR (1975-76)		($1,000's)
Review California projects, issue licenses, assure compliance with Water Code, and prepare letter report on weather modification operations in California. (G)		6.5
General planning for Northern Sierra Project. (G-17; P-16)		33
Environmental assessment for EIR/EIS, including contracts to Department of Fish and Game, Department of Transportation, California Highway Patrol, UC-Davis, and Social Consultant. (G-34; P-34)		68
Installation and operation of rawinsonde station near Oroville. (G-8; P-10)		18
Acquisition of new and modification of existing precipitation gages. (G-28.5; P-30)		58.5
Design contract (USBR Funding)		(130)
Environmental assessment on forests and biota chain (USBR funding of Forest Service)		(68)
Hydrologic studies of American River Basin (USBR service)		(40)
Social impact assessment (USBR portion of funding)		(4.5)
Project planning and management, EIR/EIS preparation		(60)
Monitoring equipment (loaned by USBR)		(60)
Totals	G	94*
	P	90*
		184*
USBR Contracts, Activities and Services		(362.5)

*The $234,000 total in current 1975-76 budget reduced $30,000 General and $20,000 Project Fund to provide input to the Year 2000 Plan.

Environmental Considerations

Licensing activities under this program are exempt from California Environmental Quality Act requirements in accordance with Department Regulations, Section 545, Ministerial Exemption.

Preparation of a letter report, "Weather Modification Operations in California" is exempt under Department Regulations, Section 547, Class 6, Categorical Exemption, Information Collection.

The Northern Sierra Demonstration Project will require an Environmental Impact Report/Statement prior to seeding operation. The draft EIR/EIS will be prepared in the current year.

WORK PROGRAM FOR BUDGET YEAR (1976-77)		($1,000's)
Review California projects, issue licenses, assure compliance with Water Code, and prepare annual letter report on weather modification operations in California. (G)		6.5
General planning coordination and program management for Northern Sierra Project. (G-17; P-16)		33
Environmental assessment, including public hearings and preparation of Final EIR/EIS. (G-17; P-17)		34
Preseeding analysis and report on project feasibility. (G-17; P-17)		34
Operation of rawinsonde near Oroville. (G-3; P-4)		7
Acquisition, installation, and/or operation of precipitation gages and telemetry. (G-33.5; P-36)		69.5
USBR project planning and management, final project design, final EIR/EIS, meteorological instrumentation installation and operation, project feasibility evaluation, and installation of ground-based seeding apparatus and controls.		(1,100)
Totals	G	94
	P	90
		184
USBR Activities and Services		(1,100)

Environmental Considerations

Licensing activities under this program are exempt from California Environmental Quality Act requirements in accordance with Department Regulations, Section 545, Ministerial Exemption.

Preparation of a letter report on weather modification operations in California is exempt under Department Regulations, Section 547, Class 6, Categorical Exemption, Information Collection.

The Northern Sierra Demonstration project will require an Environmental Impact Report/Statement prior to seeding operation. Final EIR/EIS will be prepared in the budget year.

INPUT

	1974-75		1975-76		1976-77	
	M.Y.	$	M.Y.	$	M.Y.	$
General Fund	2.0	72	2.0	124*	1.5	94
Project Fund	1.1	54	1.9	110*	1.4	90
Estimated Value of USBR Services		(80)		(260)		(200)
Total	3.1	126	3.9	234*	2.9	184

*Of the budgeted amount, $30,000 GF and $20,000 PF will provide input to the Year 2000 Plan.

WEATHER MODIFICATION

Work Authority 1417, Division of Planning
Work Authority 1418, Central District

SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Year Major Activity and/or Study	M.Y.	Fund	($1,000's) Organization and Source of Funding: DRD	CD (FR)*	CD (AR)*	Total	Services
Expenditures for 1975-76							
Project Planning	0.3	G		9	8	17	
	0.3	P		16		16	
		U**		(70)	(70)		(140)
Environmental Assessment	0.7	G		17	17	34	
	0.7	P		34		34	
		U		(46)	(46)		(92)
Rawinsonde	0.1	G		8		8	
	0.1	P		10		10	
		U		(21)			(21)
Precipitation Gages	0.3	G		28		28	
	0.3	P		30		30	
		U		(35)	(35)		(70)
Hydrologic Studies		U			(40)		(40)
Activities not charged to Study Areas:							
Review projects and issue licenses	0.1	G	7			7	
TOTALS 1975-76	1.5	G	7	62	25	94#	
	1.4	P		90		90#	
		USBR		(172)	(191)		(363)

* Feather River and American River.
** USBR Contracts, activities, and services.
\# The Governor's 1975-76 Budget included $124,000 GF and $110,000 PF. The reductions of $30,000 GF and $20,000 PF were to provide funds for input to the Year 2000 Plan.

WEATHER MODIFICATION

Work Authority 1417, Division of Planning
Work Authority 1418, Central District

SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Year Major Activity and/or Study	M.Y.		($1,000's) Organization and Source of Funding DRD	CD (FR)*	CD (AR)*	Total	Services
Expenditures for 1976-77							
Project Planning	0.7	G		17	17	34	
	0.7	P		33		33	
		U**		(70)	(70)		(140)
Environmental Assessment	0.3	G		9	8	17	
	0.3	P		17		17	
		U		(23)	(23)		(46)
Rawinsonde	0.1	G		3		3	
	0.1	P		4		4	
		U					
Precipitation Gages	0.3	G		33		33	
	0.3	P		36		36	
		U		(35)	(35)		(70)
Generator Installations		U		(422)	(422)		(844)
Activities not charged to Study Areas:							
Review projects and issue licenses	0.1	G	7			7	
TOTALS 1976-77	1.5	G	7	62	25	94	
	1.4	P		90		90	
		USBR		(650)	(650)		(1,100)

* Feather River and American River.
** USBR Contracts, activities, and services.
\# The Governor's 1975-76 Budget included $124,000 GF and $110,000 PF. The reductions of $30,000 GF and $20,000 PF were to provide funds for input to the Year 2000 Plan.

DP	Kleine
ND	Clawson
CD	Mitchell
SJD	Nevins
CD	Koyasako

WASTE WATER RECLAMATION

SYNOPSIS

This program will be substantially realigned in 1975-76, to implement (build) a number of specific waste water reclamation projects. The goal in 1975-76 is to start six actual projects, either separately or cooperatively with other agencies; two of these in the Central District, two in the Southern District, one in the San Joaquin District, and one in the Northern District*. In addition, studies will be undertaken as necessary to meet the needs of Bulletin No. 160-77. Inventories of waste water production will be curtailed.

History

Beginning in July 1950, activities have been carried on to promote waste water reclamation to extend usable water supplies and to reduce costs and environmental problems associated with waste water disposal.

The Department's waste water reclamation activities between 1950 and 1965, involving the collection of statewide inventory of waste water production and waste water reclamation practices, were reported in four statewide inventory bulletins, and three office reports.

Between 1965 and 1971, the data on waste water production was incorporated as Appendix F to the Department Bulletin No. 130 series, "Hydrologic Data" for Southern California and for Central Coastal area.

The Department also prepared four waste water reclamation areal overview reports, and two bulletins dealing largely with specific projects.

In 1973 the Department published Bulletin No. 189, "Waste Water Reclamation--State of the Art". Bulletin No. 189 is for the layman, describing waste water reclamation in simple, easily understood terms.

Emphasis will now be placed upon the development and implementation of specific waste water reclamation projects to supplement other water supplies to meet the State's future water demands through inclusion of reclaimed water in existing projects, new projects, for specific uses or in exchange for other supplies. The studies of water reclamation projects which directly benefit local interests

*In implementing specific projects, all possible sources of funds will be considered, including federal grants and State Water Project funds. In determining the project justification, all possible benefits associated with waste water reclamation should be taken into account.

will be closely coordinated with the State Water Resources Control Board to promote adequate consideration of water supply-waste water quality, policy and waste water disposal relations. In implementing such projects, all possible sources of funding will be considered, including federal grants and State Water Project funds.

Work will be undertaken as necessary during 1975-76 to develop a practical plan for Bulletin No. 160-77 involving integrated water management which includes waste water reclamation.

Information on waste water production and waste water reclamation practices and technology leading to the identification of additional specific waste water reclamation projects for implementation will continue, and will be reported upon every two years or so in the Bulletin No. 68 series. However, work will be given lesser priority to development of specific projects and the work during 1975-76 for Bulletin No. 160-77, and will be limited to one man-year per district. This activity will lead to the development and implementation of additional waste water reclamation projects which will be reported in the Bulletin No. 188 series. In this latter bulletin series, will also be reported the results of technological studies and research activities on the feasibility of reclaiming waste water for specific beneficial uses.

NEED

The reclamation of water from wastes must be considered in any comprehensive system of water management. Waste water reclamation and recycling of waste waters represent increasingly significant sources of new or upgraded water supply which may be used to augment existing supplies, release better quality water for higher beneficial uses, and diminish water quality problems resulting from waste water disposal. Further, reclamation is a promising source of water for use in enhancing environmental amenities through the development of recreational areas and lakes and the irrigation of greenbelts. The recent trend of locating thermal power plants inland requires increasing water for evaporative cooling. Reclaimed water may be used for this purpose, decreasing the demand on higher quality supplies.

OUTPUT

Reports on the six specific projects to be implemented.

Potential for Reclamation of Agricultural and Municipal Waste Waters for Power Plant Cooling
(Bulletin No. 188-1) March 31, 1976

Reclamation of Municipal and Industrial Waste Waters from San Francisco Bay Area Communities
(Bulletin No. 188-6) June 30, 1977

Reuse of Municipal Waste Water for Greenbelt Irrigation in the Los Angeles Area
(Bulletin No. 188-3 March 31, 1976

Reclamation of Municipal Waste Water for Irrigated Agriculture in Tulare Basin
(Bulletin 188-) March 31, 1977

Reclamation of Municipal Waste Water for Irrigated Agriculture in North Bay Area
(Bulletin 188-) December 31, 1977

Reclamation of Municipal Waste Water in South Coastal Hydrologic Area for Water Conservation
(Bulletin 188-) September 30, 1977

Office Report on Information on Waste Water Reclamation in Southern California for Inclusion in Bulletin No. 160-77
March 31, 1976

Office Report on the Technological Phase of Releasing Water from Waste from Pulp and Paper Industry
March 31, 1976

Statewide Waste Water Production and Waste Water Reclamation Practices and Technology
(Bulletin 68-75) August 31, 1976

OBJECTIVE

To build six waste water reclamation projects, separately or in cooperation with other agencies. To evaluate and promote other waste water reclamation and implement waste water reclamation projects to extend usable water supplies, ~~reduce costs,~~ and minimize environmental problems associated with waste water disposal. Develop adequate information to permit comparison of waste water reclamation with other supply sources on a project, regional, and statewide basis.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

Specific Waste Water Reclamation Projects $326,000

Conduct studies to develop specific projects to reclaim municipal waste water from Central and South San Francisco Bay area communities (1) for direct or indirect augmentation of the outflow from the Sacramento-San Joaquin Delta; (2) for reuse for irrigation in the San Joaquin Valley, Santa Clara Valley, Sacramento-San Joaquin Delta, or in upper Pajaro River Basin and San Mateo Coastal area, and (3) for power plant cooling water in the Bay and Central Valley areas.

Prime consideration will be given to the development of specific waste water reclamation projects to serve as possible alternatives to additional importation of water into the San Francisco Bay area from such developments as the San Felipe Project, enlarged Hetch Hetchy or by the East Bay Municipal Utility District and Contra Costa County as related to the Folsom-South Canal Project.

$90,200

Conduct studies to develop specific projects to reclaim municipal waste water from North San Francisco Bay communities (1) for irrigation of agriculture and greenbelts; (2) for power plant cooling water; and (3) for marsh area enhancement.

Prime consideration will be given to the development of specific waste water reclamation projects to serve as possible alternative to additional importation of water through the State's North Bay Aqueduct, local water development at Warm Springs and the extension of the Sacramento-Westside Canal.

$45,000

Complete the technological study on the feasibility of using reclaimed agricultural waste water and municipal waste water from Southern San Joaquin Valley for power plant cooling. ~~Publish this information as a state~~ of the art in Bulletin 188~~-1~~.

$52,400

Initiate a study to implement a proposed cooperative waste water reclamation project with the State Water Resources Control Board to develop a waste water reclamation demonstration project using reclaimed municipal waste water for irrigated agriculture in the Tulare Basin. Waste water from Bakersfield or Fresno are possible sources. It is proposed to design, construct, operate and monitor a large waste water reclamation project to demonstrate that reclaimed waste water is a valuable water source for irrigating various agricultural lands in California and that reclaimed waste water can be beneficially used for irrigating agriculture without health hazards or damage to the soil. The study will be carried out in three phases - Phase I is the planning phase to include site selection and development of facilities plans; Phase II is the project design and construction phase and Phase III is the operation and monitoring phase.

Proposed participants in the studies are also to include Department of Health, University of California at Davis and at Riverside, U.C. Agriculture Extension Service and representation of the local farmers and agricultural groups.

$16,000

Complete the study to implement a waste water reclamation project to irrigate a greenbelt area using reclaimed municipal waste water in the Los Angeles area. This final stage is to include site selection, design of project plans, and development of implementation plans. The Las Virgenes Municipal Water District has a supply of suitable reclaimed waste water from its Tapia Plant to serve as a source of water for this type of a project.

$33,200

Study the feasibility of reclaiming waste water being discharged into the saline water within South Coastal Hydrologic Area as a water conservation measure. The objective of this study is to implement the design of specific waste water projects by (1) developing the physical system necessary to conserve imported water by using reclaimed waste water; (2) defining the areas in which reclaimed waste water can be exchanged for imported water; (3) developing plans for potential interbasin transfer of treated waste water being discharged into saline waters, (4) exploring ways to solve water quality problems using reclaimed waste water; and (5) envolving financial plans to permit the construction and operation and maintenance of the various features of the overall waste water reclamation project proposed.

Special studies to be made include (1) energy savings that can be achieved by not having to pump over the Tehachapis the quantity of California Water Project water exchanged by using reclaimed waste water; (2) the possibility of extending the time before any additional importation projects will be needed if waste water reclamation projects are implemented and quantifying this time savings; (3) cooling water needs for new inland power plants; (4) when "new" water demands, such as greenbelt irrigation, might occur which have a definite possibility of being met by using reclaimed waste water; (5) designing the features of the waste water reclamation project which will result; (5) schedule for constructing of the various features; and (6) ways and means to finance and implement the project features.

A possible project is the construction of a demonstration plant for the use of reclaimed waste water from the City of Los Angeles' Hyperion Plant for direct well injection to provide a seawater intrusion barrier. The user of the water supply would be the Central and West Basin Water Replenishment District.

$58,000

Administer a contract for health criteria for ground water recharge using reclaimed waste water.

The use of treated waste waters to recharge underground water supplies for further reuse for beneficial purposed provides an important potential for saving a reusable resource which might otherwise be lost. The use of treated waste waters for this purpose is regulated by the Department of Health and by the regional water quality control Boards. At present, there are no generally applicable criteria and each proposal must be considered on a case-by-case basis.

The lack of such criteria constrains planning for reclamation of waste water. An agreement is being executed among the State Water Resources Control Board, the Department of Health, and the Department of Water Resources to empanel a group of recognized experts to

support criteria development. This program element would fund the Department's portion of the related costs.

$15,000 G

Staff Coordination of Districts' Activities $14,800 G

Status of Waste Water Production and Reclamation Practices and Technology $160,000

The activities to be included under this heading are all those which were previously listed under "Inventory of Waste Water Production and Waste Water Reclamation Practices" and "Areal Overview Studies of Waste Water Reclamation". The content of the Bulletin No. 68 series will be revised to include tabulations of waste water production and reclamation similar to the previous editions; waste water quality, and waste water treatment and reclamation facilities; discussions of the status of waste water reclamation projects, technology and research; and listings of potential waste water reclamation project and research. The districts will provide the Division of Planning the needed data and information annually.

The districts will collect data and information on waste water production and waste water reclamation. The quantity data is requested on a monthly basis if at all possible. This is so that planners can use these data in hydrologic, water supply and water demand studies.

The water quality parameters to be used will be those which will define the quality of waste water for reuse for agriculture, landscape, golf course and recreational irrigation; and for ground water recharge. Parameter which specifically define health aspects of use of reclaimed will not, per se, be included, nor will special parameters necessary to define industrial uses, except for power plant cooling water, be gathered.

The information to be collected on waste water treatment and reclamation facilities will be of a general nature. These data will be presented in bulletins for years ending in 5 and 0. Any major change will be reported as soon as possible.

The discussion of the status of noteworth waste water reclamation project are to include historical information regarding the objectives, reasons for the project, when the project started, where and how much reclaimed waste water has been used annually to date, quality of the waste water, treatment and any special research carried on prior to the operation of the project.

Listings of potential waste water reclamation projects are to include sources, quantity, quality and treatment of waste water's specific markets or uses for the reclaimed waste water, objectives or goals to be achieved, projected water demands and waste water

production; and problems to be solved. The listings will be included in bulletins for years ending in 5 and 0. Any changes which will affect the programming of studies of specific waste water reclamation projects will be presented in the next bulletin to the time the decision for change is made.

The scheduling and accomplishment of activities for 1975-76 are subject to uncertainty due to the estimated $198,000 worth of work to be contributed to studies designed to provide information on waste water reclamation for Bulletin No. 160-77.

Environmental Considerations

The Waste Water Reclamation program is a "feasibility and planning" study and does not require an environmental impact report in accordance with Section 544 of the Department Environmental Regulations. Section 21102 of CEQA requires that this program include consideration of environmental factors.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

Specific Waste Water Reclamation Projects $327,000

Conduct studies to develop specific projects to reclaim municipal waste water from Central and South San Francisco Bay area communities (1) for direct or indirect augmentation of the outflow from the Sacramento-San Joaquin Delta; (2) for reuse for irrigation in the San Joaquin Valley, Santa Clara Valley, Sacramento-San Joaquin Delta or in the upper Pajaro River Basin and San Mateo Coastal area, and (3) for power plant cooling water in the Bay and Central Valley areas.

Prime considerations will be given to project selection, preparation of preliminary project designs and development of construction implementation plans for project authorization envolving state participation and local agencies cooperation and preliminary EIR.

$90,200

Conduct studies to develop specific projects to reclaim municipal waste water from North San Francisco Bay communities (1) for irrigation of agriculture and greenbelts; (2) for power plant cooling water; and (3) for marsh area enhancement.

Prime consideration will be given to project selection, preparation of preliminary project design and development of construction implementation plans for project authorization envolving state participation and local agencies cooperation and preliminary EIR.

$45,000

Conduct a study cooperatively with the State Water Resources Control Board to develop a waste water reclamation demonstration project

using reclaimed municipal waste water for irrigated agriculture in Tulare Basin. Waste water from Bakersfield or Fresno are possible sources.

The studies during 1976-77 would involve Phase I - Site selection and development of facilities plans.

Participants in the studies are also to include Department of Health, University of California at Davis and at Riverside, U.C. Agriculture Extension Service and representatives of local farmers and agricultural groups.

$68,400

Conduct the feasibility of reclaiming waste water being discharged into saline water within South Coastal Hydrologic Area as a conservation measure.

The activities include project selection, development of project design plans and preparation of implementation plan involving participation of the State and local agencies cooperation.

$91,200

Administer contracts for research studies on health aspects of ground water recharge using reclaimed waste water.

Recommendations of the Panel on Health Aspects of Ground Water Recharge will be the basis for research projects.

$15,000

Staff Coordination of Staff Activities $14,800

Status of Waste Water Production and Reclamation Practices and Technology $160,000

The activities to be pursued during the budget year, 1976-77, are the same as for 1975-76. However, Bulletin No. 68-75 covering these two years 1974 and 1975 will be prepared and published by August 31, 1976.

Environmental Consideration

See statement for 1975-76 fiscal year.

INPUT

	1974-75		1975-76		1975-77	
	MY	($1,000s)	MY	($1,000s)	MY	($1,000s)
General Fund	16.0	472	14.4	487	14.1	487
Total	16.0	472	14.4	487	14.1	487

WASTE WATER RECLAMATION

(1243, DP
1244, ND
1245, CD
1246, SJD
1280, SD)

SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Year

Major Activity and/or Study	MY	F	DRD	ND	CD	SJD	SD	Total
Expenditures for 1975-76								
Specific Waste Water	9.5	G	32.2	-	135.2	68.4	91.2	327.0
Reclamation Projects								
Status of Waste Water	4.6	G	29.8	31.4	31.4	34.2	33.2	160.0
Production of Reclamation								
Practices and Technology								
Total	14.1	G	62.0	31.4	166.6	102.6	124.4	487.0
Expenditure for 1976-77								
Specific Waste Water	9.5	G	32.2	-	135.2	68.4	91.2	327.0
Reclamation Project								
State of Waste Water	4.6	G	29.8	31.4	31.4	34.2	33.2	160.0
Production and Reclamation								
Practices and Technology								
Total	14.1	G	62.0	31.4	166.6	102.6	124.4	487.0

DP Kleine
ND Clawson
CD Mitchell
SJD Nevins
SD Koyasako
6/26/75

WASTE WATER RECLAMATION

PURPOSE

Reclamation and reuse of water from wastes must be considered in any comprehensive system of water management. Waste water reclamation, the reuse of waste water, provides a potential source of new water to augment existing supplies, while diminishing water quality problems resulting from disposal. Further, reclaimed waste water is an especially attractive source of supply to meet the State's growing demands for water for power plant cooling and for enhancing the environment through development of recreational lakes or for irrigation of green belts.

MAJOR STUDIES AND/OR ACTIVITIES

This program is conducted in two parts: (1) Implementation of specific waste water reclamation projects, independently or in cooperation with other agencies. This activity will take priority and precedent over other waste water reclamation work; (2) Statewide studies of waste water production and waste reclamation practices and technology leading to the identification of additional projects for implementation (limited to 1 man year per district).

The Department of Water Resources has entered into a cooperative agreement with the Department of Health and the State Water Resources Control Board to establish a blue ribbon panel of consultants to advise upon "Health Aspects of Waste Water Reclamation for Ground Water Recharge". The panel has already met once and another meeting is scheduled for July 10-11, 1975. Hopefully, this meeting will result in development of specific recommendations for resolution of some of the unresolved technical questions in this area of interest.

During 1975-76, program activities will contribute waste water reclamation information to Bulletin 160-77.

SIGNIFICANT CHANGES

The program is being realigned to actually implement (build) a number of specific waste water reclamation projects, cooperatively with local and other agencies. During 1975-76 two projects will be started in the Southern and Central Districts, and one each in the San Joaquin and Northern Districts. (Also during 1975-76, part of this program study effort will contribute to Bulletin 160-77).

INPUT

Year	1974-75	1975-76 Gov. Budget	1975-76 Proposed	1976-77 Proposed
General Funds	472	487	487	487
Project Fund	-	-	-	-
Reimbursable	-	-	7	
Total	472	487	494	487
Man Years	12.8	13.0	14.1	14.1

Charles R. White
June 23, 1975

GEOTHERMAL RESOURCES
PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

Geothermal resources in the Imperial Valley are a potential source of freshwater and electrical energy for California. The Department of Water Resources has been involved in a program since July 1971 to evaluate the potential for development of the geothermal resources. The Department's role in the multiagency effort on geothermal resources ranges from the drilling of test wells to participation in coordination meetings to overall evaluations and preparation of reports. A test hole was drilled at Dunes Anomaly in Imperial County, in June 1972, by the Department. A report based on data obtained from the Dunes test hole, "Preliminary Findings of an Investigation of the Dunes Thermal Anomaly, Imperial Valley, California" was prepared in February 1973 jointly with the University of California at Riverside. An overview study was conducted and the results were summarized in Bulletin No. 190, "Water and Power from Geothermal Resources in California, An Overview", which was completed in December 1974. Numerous coordination meetings were held.

Need

The Department is considering a range of alternatives to provide a portion of the future water and energy needs in California. Several agencies, along with the Department, are engaged in exploratory work to determine the feasibility of developing fresh water and electrical energy from geothermal resources in the Imperial Valley. In addition to conducting its own studies, the Department monitors and evaluates the studies of others in order to provide an overview of the potential for geothermal development. The results from this study will be summarized in reports and will provide the Department with a basis for comparing geothermal development with other alternative sources of water and energy.

OUTPUT SCHEDULE

This is a continuing program. Because a major activity of this program is the collection and evaluation of data developed from investigations and research projects conducted by other agencies such as the USBR, USGS, and the University of California, a definitive report schedule cannot be developed. Periodic reports on progress will be prepared.

OBJECTIVE

To assess, in cooperation with other agencies, the quantity, quality, cost, benefits, environmental effects, and problems associated with development of geothermal resources.

WORK PROGRAM FOR CURRENT YEAR 1975-76

Continue collection and evaluation of data on wells and associated facilities by USBR and others, participate in corrosion and scaling research, if warranted. Coordination will be maintained with the University of California, and public and private agencies engaged in geothermal exploration, assessment and production in the Imperial Valley. In addition, a forum will be provided for geothermal information exchange through the geothermal coordinating committee. Continue participation in the multiagency* determination for pre-development land subsidence evaluation in the Imperial Valley. An annual progress report will be prepared.

Specific activities and their fund allocations are:

Collect and evaluate data on pilot and production wells, including geohydrologic data.	$32,000
Acquire knowledge of principles involved in water and power development facilities and observe and collect data on consequences of water and power production, including effects on land subsidence.	5,000
Collect and evaluate data on scaling and corrosion, and assess its state of the art.	12,000
Coordination, exchange information and keep abreast in the development of geothermal resources.	5,000
Technical Information Record (TIR)	3,000
TOTAL	$57,000

ENVIRONMENTAL CONSIDERATIONS

The Geothermal Resources program is a "feasibility and planning" study and does not require an environmental impact report in accordance with Section 544 of the Department Environmental Regulations. Section 21102 of CEQA requires that this program include consideration of environmental factors.

WORK PROGRAM FOR BUDGET YEAR 1976-77

No change from 1975-76. (General Statement)

Specific activities and their fund allocations are:

Collect and evaluate data on pilot and production wells, including geohydrologic data.	$32,000

*Agencies participating are: Department of Transportation, Division of Mines, DWR, Imperial Irrigation District, Imperial County and USBR.

Acquire knowledge of principles involved in water and power development facilities and observe and collect data on consequences of water and power production, including effects on land subsidence.	5,000
Collect and evaluate data on scaling and corrosion, and assess its state of the art.	12,000
Coordination, exchange information and keep abreast in the development of geothermal resources.	5,000
Technical Information Record (TIR)	3,000
TOTAL	$57,000

ENVIRONMENTAL CONSIDERATIONS

Same as for 1975-76

INPUT	(In $1,000's) 1974-75	1975-76	1976-77
General Fund	58	57	57
Man Years	2.1	1.7	1.7

WATER QUANTITY AND QUALITY MEASUREMENTS

SYNOPSIS

History

The first state stream gage was installed in 1878 by William Ham Hall, the first State Engineer, at about the time the first precipitation gages were established. Measurements of the level of ground waters were initiated in 1917. All available precipitation and surface water data were used in development of the State Water Plan as outlined in Bulletin No. 5 "Flow In California Streams, March 1923", and which was later partially constructed by the Federal Government as the Central Valley Project.

Quality of water data along with continuing surface and ground water and climatologic measurements were collected during the continuance of numerous cooperative local hydrologic studies during the 1940's and early 1950's, to provide the foundation for The California Water Plan, the first phase of which is now nearing completion as the State Water Project.

Starting with the local cooperative investigations, the Department's policy was to maintain a data collection activity which, in addition to its own planning needs, was adequate to satisfy local agency project development needs in order that the State's limited resources would not be improperly utilized. At the same time, encouragement was extended to local agencies to initiate their own data programs. By the middle 1960's, data was being collected from some 540 surface water measurement stations, over 1,200 surface water diversion stations, 230 surface water quality stations, more than 1,000 climate stations maintained by private cooperators, more than 10,000 ground water level measurements annually and water quality samples from about 2,500 wells.

Since 1967, this component has annually reduced the magnitude of its activities with relation to local needs. At the present time all of the foregoing activities have been reduced to less than half the 1967 level with climate activities to less than one-quarter and surface water diversion measurements having been discontinued.

Funds were provided starting in 1971-72, to initiate a system for the efficient storage and retrieval of water-related data. When handling large volumes of data, traditional hand methods are tedious, time consuming, error prone, and costly. Machine programs are being developed to efficiently and accurately process, store and retrieve data utilizing the increased capabilities of the newer electronic machines.

Need

Planning for the management and development of water resources as well as providing for its protection requires accurate knowledge of the phenomina involved. This is fundamental to the decision-making process. Thus it is important to define the resource by measuring it in terms of quantity, movement of that quantity, and assessing its quality both as it occurs naturally or as affected by man's activities. To be valid, such determinations must be made over extended periods of time. Historic records also form the basis for defining trends and spotting problems. In addition, to be useful to all governmental agencies and the public, the accumulating information must be assembled in readily available form.

OUTPUT

The component operates on a water-year cycle for which data are collected from October 1 through September 30 of any year. About 2,600 requests for information are responded to in an average year.

The specific outputs are:

Bulletins or Report	Due Date
Bulletin No. 130 "Hydrologic Data" Volumes I to V by areas of the State (This bulletin is being converted to a station index.)	August each year
Bulletin No. 120 "Water Conditions in California - Summary Report"	November each year
Bulletin No. 157 "Index of Stream Gaging Stations in and Adjacent to California, 1975"	Every 5 yrs.-June '76
Bulletin No. 165 "Index of Climatological Stations"	Every 5 yrs.-June '76
Bulletin No. 91-23 "Water Wells and Springs in Palo Verde Valley"	December 1976
Bulletin No. 195 "Precipitation Analysis for California"	Every 5 yrs.-Dec. '80
Bulletin No. 73 "Evaporation from Water Surfaces in California"	Every 5 yrs.-June '79
District or Division reports on Surface or Ground Water Quality Conditions	Unscheduled (various reports each year)
Memorandum Report "Monthly Precipitation Data for California"	March each year
USGS Cooperative Reports: "Water Resources Data for California"	Fall annually
"Ground Water Extractions in Areas of California"	Unscheduled (various reports each year)
"Sediment Data in Areas of California"	Unscheduled (various reports each year)

OBJECTIVE

To gather and evaluate hydrologic (quantity, quality, and movement) data in order to provide the basic support needed for the development, management, protection, and control of the State's water resources. To provide a unified system for the collection, handling, evaluation, and dissemination of current and historic hydrologic data gathered in California.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

1. General Program Management - General supervision in four districts and coordination by the central planning division. $204,326

2. Data Collection, Preparation, and Placing in Storage
   a. Maintenance and collection of data from 84 surface water measurement stations, 5,000 ground water level measurements by DWR and receipt of 50,000 from other agencies; collection and/or analysis of water samples from 200 surface water stations, 100 waste water stations (quantity data from 500 waste water stations), 1,400 wells; cooperate with National Weather Service in collection of precipitation data and maintain 40 precipitation storage gages; process and store the forgoing data. $783,564

   b. Cooperate with USGS in support of data collection from 193 surface water measurement stations and 95 thermographs in streams, ground water pumpage estimates, ground water data collection in desert areas and sediment data collection in streams. $430,810

   c. Receive and file notices of intent to drill and drillers' reports. 29,500

   Subtotal $1,243,874

3. Data Program Analysis and Evaluation
   a. Continued planning for efficient use of electronic, microfilm, and original document storage of data including programming of machine activities. $258,207

   b. Qualification of wells selected from some 17,000 wells measured by the Department and other local, state, and federal agencies and network evaluation. $120,227

   Subtotal $378,434

4. Dissemination of Data
Publication of data bulletins and summaries, contributions to other department bulletins, and response to inquiries from other agencies, companies, and individuals. $159,456

TOTAL $1,986,000

Note: The USGS will complement the funding of data collection with $430,810 federal funds. Additionally, they will justify $475,242 data-oriented research and investigative federal programs based on the magnitude of state data collection activities. This cooperation is offered by the Federal Government only on financial evidence of an interest by the State.

Environmental Considerations

Data collection, per se, is a categorically exempt activity under Section 547, Class 6, of the Department's Environmental Regulations. The collection of most hydrologic data requires the installation and operation of collection devices and appropriate housing on a permanent though sometimes temporary, basis. New construction of most such facilities is exempt under Section 547, Class 3, and most existing facilities are exempt under Section 547, Class 1.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

1. General Program Management - General supervision in four districts and coordination by the central planning division. $204,326

2. Data Collection, Preparation, and Placing in Storage
   a. Maintenance and collection of data from 84 surface water measurement stations, 5,000 ground water level measurements by DWR and receipt of 50,000 from other agnecies; collection and/or analysis of water samples from 200 surface water stations, 100 waste water stations (quantity data from 500 waste water stations), 1,400 wells; cooperate with National Weather Service in collection of precipitation data and maintain 40 precipitation storage gages; process and store the forgoing data. $783,564

   b. Cooperate with USGS in support of data collection from 193 surface water measurement stations and 95 thermographs in streams, ground water pumpage estimates, ground water data collection in desert areas and sediment data collection in streams. $430,810

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Note: The USGS will complement the funding of data collection with $430,810 federal funds. Additionally, they will justify $475,242 data-oriented research and investigative federal programs based on the magnitude of state data collection activities. This cooperation is offered by the Federal Government only on financial evidence of an interest by the State.

Environmental Considerations

Refer to statement of Environmental considerations for 1975-76.

INPUT

	1974-75	1975-76	1976-77
General Fund	$1,856,000	$1,986,000	$1,986,000
Man-Years	45.4	48.8	48.8

WATER QUANTITY AND QUALITY MEASUREMENTS

Work Authority 1640, Division of Planning
" " 1641, Northern District
" " 1642, Central District
" " 1643, San Joaquin District
" " 1644, Southern District

SUPPLEMENT TO COMPONENT STATEMENT

		($1,000's) Organization and Source of Funding *					
	M.Y.	DP	ND	CD	SJD	SD	TOT
Expenditures for 1975-76							
Surface Water Measurement	13.6	429	142	123	99	8	801
Ground Water Quality	7.1	14	39	31	86	64	234
Ground Water Measurement	11.4	37	50	71	93	116	367
Surface Water Quality	14.2	43	104	155	119	100	521
Climatological Data	1.8	26	12	12	10	3	63
	48.1	549	347	392	407	391	1,986
Expenditures for 1976-77							
Surface Water Measurement	13.6	429	142	123	99	8	801
Ground Water Quality	7.1	14	39	31	86	64	234
Ground Water Measurement	11.4	37	50	71	93	116	367
Surface Water Quality	14.2	43	104	155	119	100	521
Climatological Data	1.8	26	12	12	10	3	63
	48.1	549	347	392	407	391	1,986

Significant Proposed Changes in Work Program for 1976-77

No Changes

*All fund "General Fund".

PROGRAM COMPONENT STATEMENT
COOPERATIVE SNOW SURVEYS

SYNOPSIS

History

Prior to 1929, snow surveys and related runoff forecasting activities were an uncoordinated effort by various agencies throughout the State. In 1929 the Legislature, through the Water Code, directed the Department of Water Resources to act as coordinating agency for the program of snow surveys and water supply forecasting. The Department has been coordinating these activities continuously since then.

Need

Timely forecasts of the State's water supply are needed by many agencies and individuals to help them effectively manage and put the available water supply to reasonable and beneficial use.

OUTPUT

This is a continuing program. Each year reports are published as Bulletin 120 "Water Conditions in California". Four reports, issued monthly, contain water supply forecasts based on snow conditions as of the first of February, March, April and May, and are mailed ten days later. These monthly forecasts are updated weekly based on snow sensor information and simulated runoff from computerized hydrologic models. Additional forecasts are issued as required or requested. A fifth report is distributed in December summarizing the previous water year.

OBJECTIVE

To reliably predict the State's snowmelt runoff as necessary to meet the annual operating needs of California's water using agencies.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

The Cooperative Snow Surveys Program is divided into two major activities: Forecasting Activities and Support Activities.

1. Forecast Activities.

   a. Continue standardization and updating of present water supply forecast procedures with emphasis on the use of additional snow parameters and more rapid field information to increase forecast accuracy and timeliness.

   b. Continue efforts to implement a long-range transition to automatic snow sensors and more frequent forecasts.

   c. Review and expand the use of hydrologic modeling and EDP methods to provide a broader range of information to water operation managers.

   Cost $ 196,000
   G 166,000
   R 30,000

2. Support Activities.

   a. Continue to foster cooperative relations by providing program direction and agency coordination in areas such as measurement scheduling, funding, safety and training, communication, maintenance, and standardized installations.

   b. Issue reports on water conditions in California and on related program activities as needed.

   c. Provide field and technical assistance as required to meet the operational needs of cooperating agencies.

   Cost $ 147,000
   G 115,000
   R 40,000

Environmental Considerations

The activities of this program are categorically exempt under Section 547, Class 6, of DWR environmental regulations.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

The Cooperative Snow Surveys Program is divided into two major activities: Forecasting Activities and Support Activities.

1. Forecast Activities.

   a. Continue standardization and updating of present water supply forecast procedures with emphasis on the use of additional snow parameters and more rapid field information to increase forecast accuracy and timeliness.

   b. Continue efforts to implement a long-range transition to automatic snow sensors and more frequent forecasts.

   c. Continue the use of hydrologic modeling and EDP methods to provide a broader range of information to water operation managers. Evaluate alternative runoff forecasting procedures, and the use of long-range weather forecasts.

   Cost

   $ 196,000
   G 166,000
   R 30,000

2. Support Activities.

   a. Continue to foster cooperative relations by providing program direction and agency coordination in areas such as measurement scheduling, funding, safety and training, communication, maintenance, and standardized installations.

   b. Issue reports on water conditions in California and on related program activities as needed.

   c. Provide field and technical assistance as required to meet the operational needs of cooperating agencies.

   Cost

   $ 149,000
   G 115,000
   R 40,000

Environmental Considerations

The activities of this program are categorically exempt under Section 547, Class 6, of DWR environmental regulations.

INPUT

	1974-75	1975-76	1976-77
General Fund	$268,000	$281,000	$281,000
Reimbursable	31,000	70,000	70,000
TOTAL	$299,000	$351,000	$351,000
Man-Years	8.8	9.5	9.5

Richard J. Wagner, DP
R. McGill ND
J. Lawrence CD
F. Stumpf SJD
R. Smith SD

6/26/75

WATER USE
PROGRAM COMPONENT STATEMENT

SYNOPSIS:

History

The purpose of the Water Use program is to determine urban, agricultural and recreational unit rates of water use. These activities were initiated in 1954 and broadened as a result of Senate Bill 434, 1959 Legislative Session. The work is authorized in Section 226(e) of the State Water Code.

The program has produced Bulletins Nos. 113, 113-2, 113-3, 114, 124, and 166-1, and will publish Bulletins 166-2, and 124-2 during 1975. In addition, many office reports dealing with specific aspects of water use have been produced.

Need

Constant updating of urban, agricultural and recreational unit water use is essential for monitoring change in water use and to provide a basis for estimating future water use. The program provides means to seek and evaluate opportunities to improve efficiency of water use. In addition it develops data necessary to calculate potentially available amounts of urban effluent, agricultural drainage and surface runoff, and that part of the applied water which contributes to ground water storage.

Program activities are directly responsive to Coordinated Statewide Planning Program data requirements and similarly meet the needs of other Department programs such as More Effective Conservation and Use, Planned Utilization of Water Resources, and others. The program is currently modified to reflect the needs and requirements of the "25-year plan", whereby major emphasis is being placed on seeking ways to save and conserve water.

Objectives

To determine historic and current unit rates of water use for all purposes, to evaluate conservation methods and proposals in terms of the potential effect on future water needs, and to develop techniques and secure information necessary for predicting future unit values of use.

OUTPUT

TITLE	TYPE	DATE OF COMPLETION
Recreational Reports		
Recreational Per Capita Campground Water in Northern California	Memorandum	August 1975
Urban Water Use Reports		
Residential Water Use	Memorandum	October 1976
Agricultural Water Use Reports		
ET for 5 Crops Grown in Kern County	Memorandum	August 1975
Water Use on Grapes in So. San Joaquin Valley	Memorandum	December 1977
General Water Use		
Water Use Characteristic - Santa Ana River Drainage Area	District	August 1976
Water Use Characteristics - San Diego County	District	July 1976
Major Water Use Reports		
Bulletin No. 166-2 - Municipal and Industrial Water Use 1/	Department Bulletin	July 1975
Bulletin No. 124-2 - Water Use by Manufacturing Industries in California 2/	Department Bulletin	September 1975

1/ Detailed information and data prepared by Districts, coordinated and assembled in DP
2/ Prepared in DP - A cooperative study with U.S. Bureau of Reclamation and U.S. Army Corps of Engineers.

WORK PROGRAM FOR THE CURRENT YEAR (1975-76)

Water Use Program's Contribution to 25 Year Plan study:

Northern District	
Activity:	
Water Conservation Studies	$10,000
Central District	
Water Allocation Area Studies:	
Russian-Eel	$32,000
S.E. Sacramento Valley (Lower American)	
South Bay-Central Coast (San Felipe)	
Other Activities:	
CV Hydrology	
Water Conservation Studies	
Water Demand Overview	
San Joaquin District	
Activities:	$40,000
Water Demand Overview	
CV Hydrology	
Southern District	
Water Allocation Area Studies:	$16,000
San Luis Obispo-Santa Barbara	
South Coast	
Owens-Mono	
Other Activity:	
Water Demand Overview	
Division of Planning	
Activities:	$30,000
Water Conservation Studies	
Water Demand Overview	

Remaining Water Use Program Activities:

1. Municipal and Industrial Unit Water Use and opportunities for conservation measures	$19,000
a. Publish Bulletin No. 166-2 (M. & I. Water Use)	
b. Publish Bulletin No. 124-2 (Industrial Water Use)	
2. Recreational Water Use Study	$ 1,000
a. Complete Campground Water Use Study	
3. Agricultural Unit Water use and Possibilities for Conservation Measures	$31,000

a. Conduct irrigation efficiency study
b. Conduct a minimum of agroclimatic and evapotranspiration studies
c. Collect applied water data for principal crops, for all geographic areas of the State. Relate farm management, soils, water prices, climate, irrigation systems, etc.

ENVIRONMENTAL CONSIDERATIONS (1975-76 Fiscal Year):

This program is categorically exempt under Section 547, Class 6 (Information Collection), of the Department's Environmental Regulations.

WORK PROGRAM FOR THE BUDGET YEAR (1976-77)

Water Use Program's Contribution to 25 Year Water Plan study:

Division of Planning

Activities:	
1. Water Conservation Studies	$15,000
2. Water Demand Overview	$15,000

Water Use Program:

1. Municipal and Industrial Unit Water use and Opportunities for Conservation Measures $53,000
   a. Review present unit use values and update where needed (for cities where changes are taking place)
   b. Complete a special study of residential water use rates and prepare a memorandum report. (Central District)
   c. Analyze urban metering (primarily a Central Valley activity). Estimate rate of water saving by converting all services to meter
   d. Reanalyze predictive curves of unit water use in urban areas (Southern District)
   e. Study and quantify municipal and industrial water saving potentials

2. Agricultural Unit Water use and Possibilities for Conservation Measures $96,000
   a. Continue irrigation efficiency study (consider soils, climate, irrigation systems, source of water, cost of water, and other factors).
   b. Continue minimum level agroclimatic and evapotranspiration studies
   c. Collect applied water data for principal crops, for all geographic areas of the State. Relate farm management, soil, water prices, climate, irrigation system, etc.

WATER USE
(W.A. 1114, DP)

SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Year Major Activity and/or Study	M.Y.	Fund	Organization and Funding (in $1,000) DP	ND	CD	SJD	SD	Total	
Expenditures for 1975-76									
Water Use Program's Contribution to 25 Year Plan Study									
1. Water Conservation			15	10	10			35	
2. CV Hydrology					10	10		20	128
3. Water Demand Overview			15		12	30	16	73	
Water Use Program:									
1. Municipal & Industrial W. U. Studies			5	2		2	10	19	
2. Recreational W. U. Studies				1				1	51
3. Agricultural W. U. Studies			4	4		14	9	31	
TOTAL			39	17	32	56	35	179	
Expenditures for 1976-77									
Water Use Program's Contribution to 25 Year Plan Study									
1. Water Conservation			15					15	30
2. Water Demand Overview			15					15	
Water Use Program:									
1. Municipal & Industrial W. U. Studies			5	5	16	10	17	53	
2. Agricultural W.U. Studies			4	12	16	46	18	96	149
TOTAL			39	17	32	56	35	179	

LAND RESOURCES AND USE

PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

Starting about 1950, the Department began a series of land use and land classification surveys to determine current water-using land development and the suitability of land for specific kinds of development as required for specific planning investigations. By the mid-1960s, all of the State had been covered by land classification surveys although not to the same detail in all areas. At that time, this current program was developed with the principal objective to periodically survey land use throughout the State. Up to the 1975-76 fiscal year, the cycle of surveys has been about once every 7 or 8 years for areas of major development or change and once every 10 to 18 years elsewhere. Program funding was increased starting with the 1975-76 fiscal year, with the result that the survey cycle will be reduced to once every 6 or 7 years. Additional land classification work of limited extent continues to be done as required for specific investigations. In recent years, special inventories have been made in a few counties to assemble more kinds of land-related data. Some of this has been accomplished in conjunction with the State Office of Planning, with matching funds provided from U.S. Department of Housing and Urban Development planning grants.

Need

The Department's effort to maintain a statewide plan for long-range management of the State's water resources requires continued surveillance of the nature, location, and rate of changing water utilization. Recurring land use surveys provide the basis for determining this information. Although some land use data are generated by others, either geographic coverage is too limited or the data is not sufficiently accurate or properly definitive for water planning purposes.

Formulation of predictions of the nature and location of future water use also requires information on the availability and suitability of land for various kinds of water-using development. The land classification surveys provide these data.

Evaluation of social, economic, and environmental impacts of land and water development requires continuous monitoring of land uses and information on the characteristics of the land involved.

OUTPUT

1. Memorandum reports by each district, reporting completion of the following surveys and tabulation of data:

   - Standard land use surveys of Stanislaus and San Benito Counties and Central Coast portions of Santa Cruz and Santa Clara Counties (surveys conducted during 1975-76 fiscal year). 10/76

   - Standard land use surveys of Madera, Merced, Sacramento, San Joaquin Counties 12/75

   - Standard land use surveys of Sutter, Glenn, Colusa, Contra Costa, Sierra, Plumas, Amador, Calaveras, Alpine, Monterey, and Kern Counties (surveys conducted during 1976-77 fiscal year) 10/77

   - Reconnaissance land use surveys based on high elevation photography and satellite imagery ("irrigated" and "urban" area only) of portions of Central Valley 12/75

2. District reports will be prepared on the following:

   - Standard land use survey of the Upper Santa Ana River Basin (survey completed during 1975-76 fiscal year) 10/76

   - Standard land use survey of San Diego County (survey conducted during 1975-76 fiscal year) 02/77

   - Standard land use survey of Santa Barbara and San Luis Obispo Counties (surveys conducted during 1976-77 fiscal year) 10/77

OBJECTIVE

Monitor changes in water-related land use in the State by preparing maps at a scale of 1:24,000 showing the actual location and extent of irrigated land by crop type and urban land by type of development. Determine and map the

suitability of land areas for various uses. Assemble other information about the land resource as required for evaluating impact of land and water development. Prepare acreage tabulations of all data.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

1. Conduct land use surveys as follows:

   a. initiate and complete surveys of the complete areas of Stanislaus, San Benito, and San Diego Counties and the Central Coastal portion of Santa Cruz and Santa Clara Counties. Tabulate acreages.

   b. complete survey initiated in 1974-75 fiscal year of the Upper Santa Ana Basin portion of Los Angeles, San Bernardino, and Riverside Counties. Tabulate acreages.

   c. complete acreage tabulation of San Joaquin, Merced, and Madera Counties surveys conducted in 1974-75 fiscal year. Prepare memorandum reports of these and Sacramento County. G $161,000

2. Continue to monitor NASA satellite programs and related research, particularly University of California's LANSAT-II research funded by NASA. Provide advice and some assistance to the U.C. study. G $6,000

3. Cooperatively work with counties or other local government on preparing land related resource maps of the wide range of ecological and physical data required for evaluating impact of land and water development. (Expenditure of General Fund money for this item will depend on matching funds being provided by cooperating agencies). G $38,000
   R $38,000

4. Provide input to the Department's 25 Year Plan study. This includes preparation of maps and tabulations of land-related data, analysis of impacts of land use projections, and other required study input. G $120,000

Environmental Considerations

This is a continuing program to provide up-to-date land use data and other land-related data required by other Department planning programs. The program produces information only, and is categorically exempt under Section 547, Class 6, of the Department's Environmental Regulations.

WORK PROGRAM FOR BUDGET YEAR 1976-77

1. Conduct land use surveys as follows:

a. initiate and complete standard land use surveys of Sutter, Glenn, Colusa, Contra Costa, Sierra, Plumas, Amador, Calaveras, Alpine, Monterey, Kern, San Luis Obispo and Santa Barbara Counties. Initiate acreage tabulation.

b. prepare memorandum reports of 1975-76 surveys of Stanislaus and San Benito Counties and the Central Coast portion of Santa Cruz and Santa Clara Counties.

c. Prepare District reports of Upper Santa Ana River Basin and San Diego County surveys completed during 1975-76 fiscal year. G $319,000

2. Continue to monitor NASA satellite programs and related research performed throughout the country to determine suitability of satellite imagery for DWR data determinations. G $6,000

Environmental Considerations

Same as 1975-76 statement.

INPUT

	1974-75		1975-76		1976-77	
	M.Y.	$	M.Y.	$	M.Y.	$
General Fund-Support	6.1	238,000	8.0	325,000	8.0	325,000
Reimbursable - Cash	1.0	34,000	1.0	38,000	--	--
TOTAL	7.1	272,000	9.0	362,000	8.0	325,000

LAND RESOURCES AND USE

(Work Authority 1001, Division of Planning)

SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Year Major Activity and/or Study	M.Y.	Fund	($1,000s) Organization and Source of Funding DP	ND	CD	SJD	SD	TOTALS
Expenditures for 1975-76								
- Stanislaus, San Benito, and portions of Santa Cruz and Santa Clara Counties	1.5	G	26			35		61
- San Diego County and Upper Santa Ana Basin	2.4	G	35	16			62	113
- San Joaquin, Merced and Madera Counties	0.6	G	25					25
Activities not charged to Study Areas:								
- Monitor satellite programs	0.2	G	1	1		3	1	6
- Conduct land resources inventories	1.0	R	38*					38
- 25 Year Plan Study	3.3	G	20	17	38	15	30	120
TOTALS 1975-76	8.0	G	107	34	38	53	93	325
	1.0	R	38					38
	9.0		145	34	38	53	93	363
Expenditures for 1976-77								
- Sutter, Glenn, Colusa Counties	1.3	G	21	33				54
- Contra Costa, Sierra, Plumas, Amador, Calaveras, Alpine Counties	1.5	G	25		37			62
- Monterey, Kern Counties	2.5	G	39			52	9	100
- San Luis Obispo, Santa Barbara Counties and Upper Santa Ana Basin and San Diego County	2.5	G	20				83	103
Activities not charged to Study Areas:								
- Monitor satellite program	0.2	G	2	1	1	1	1	6
TOTALS 1976-77	8.0	G	107	34	38	53	93	325

* To be allocated to any District which develops a coop program with local agency

J. Angel
June 25, 1975

CALIFORNIA-NEVADA JOINT WATER QUALITY INVESTIGATION OF LAKE TAHOE PROGRAM COMPONENT STATEMENT

SYNOPSIS

This program now consists of two elements as a result of being combined with the services for California-Nevada Interstate Compact Commission (CNICC) Program. The water quality work was undertaken primarily as a result of a Governor's Conference held about 10 years ago at Stateline. The Governors of California and Nevada were deeply concerned about the future of Lake Tahoe and established a 7-point program to assure the continuing clarity of the lake. One of the points in this program was that a continuing monitoring program should be undertaken to assess the quality levels of Lake Tahoe and to determine if remedial actions were effective in preventing the loss of clarity.

We have published nine annual reports since the inception of this continuing monitoring program. The last report, "California Nevada-Federal Joint Water Quality Investigation of Lake Tahoe, Ninth Annual Summary" was dated June 1975. Despite improvements in sewage disposal by export from the basin, in order to assure continued clarity of the lake, it is still necessary to monitor the effects of erosional runoff which carries silt and nutrients into the lake and threatens its clarity and oligotrophic state.

The work for CNICC is a continuation of 18 years of technical and administrative services for the Commission. The compact was ratified by the two States in 1971. Congressional consent legislation has been delayed by the Pyramid Lake controversy.

OUTPUT SCHEDULE

Our major cooperators in this program are: (1) California Regional Water Quality Control Board, Lahontan Region and (2) State of Nevada, Health Division; (EPA withdrew as a cooperator as of December 31, 1974). At the completion of the calendar year, an annual cooperator's meeting is held to discuss past activities, review the draft of the annual report, and to consider the work program for the forthcoming year. The cooperators have agreed on the following schedule:

Undertake water sampling cruises in May and August. Tabulation of data and preparation of the report will be undertaken throughout the year and the final report should be completed after data from the August sampling run has been transmitted to us from the cooperators. It is tentatively planned that the cooperators' final report for the calendar year's activities can be completed in June of the following year. The cooperators' final report is a joint report of all three agencies, which the Department drafts and publishes annually as a part of its contribution to the investigation.

OBJECTIVE

The work of the Department for the California-Nevada Compact Commission is an addition to the 1974-75 program. Various studies requested by the Commission

will be conducted. Because of the interrelated use of the waters of the Truckee and Carson River Basins, this use has a direct effect on the releases and water quality of Lake Tahoe.

To obtain information to establish the rate of eutrophication occurring in Lake Tahoe and to be able to predict if present and proposed protective measures, such as exportation of sewage from the basin and erosion control measures, have been instrumental in retaining the crystal clarity of Lake Tahoe's water.

To provide the California-Nevada Compact Commission with any requests for technical information.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

Water quality sampling cruises will be undertaken in May and in August and samples will be obtained from tributary streams and stations in the lake. These samples will be forwarded to various laboratories for analyses to determine the biological, bacteriological, and mineral levels present at the time of sampling. Upon receipt from the laboratory, the data will be organized for presentation in the annual report.

Studies will be conducted for the California-Nevada Compact Commission as requested. Administrative services and provision of assistance to Attorney General's Office in Truckee and Carson River litigation has been requested starting last year.

Environmental considerations. This program is limited to collection and interpretation of basic data, and is, therefore, categorically exempt under Section 547, Class 6, of Department of Water Resources Guidelines.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

Water quality sampling cruises will be undertaken in May and in August and samples will be obtained from tributary streams and stations in the lake. These samples will be forwarded to various laboratories for analyses to determine the biological, bacteriological, and mineral levels present at the time of sampling. Upon receipt from the laboratory, the data will be organized for presentation in the annual report.

Continue to provide information to the California-Nevada Compact Commission.

Environmental considerations. This program is limited to collection and interpretation of basic data, and is, therefore, categorically exempt under Section 547, Class 6, of Department of Water Resources Guidelines.

INPUT

	M.Y.	1974-75	M.Y.	1975-76*	M.Y.	1976-77
General Fund - Support	0.7	$	0.8	$24,000	0.8	$24,000
General Fund - Cal-Nev CC		21,000	0.3	10,000	0.3	10,000
Reimbursement (State of Nevada)	0.2	5,000	0.2	7,000	0.2	7,000
Est. Value of Cooperator's Service		(5,000)		(5,000)		5,000
TOTAL	0.9	$26,000	1.3	$41,000	1.3	$41,000

*These figures do not agree with the 1975-76 Governor's Budget because we submitted a Work Authority Revision No. 76-1 on March 27, 1975.

An extra $3,000 (including $1,000 from the State of Nevada) is required because EPA dropped out of the program, and we must absorb the cost of the biological work that EPA formerly contributed.

CALIFORNIA-NEVADA-FEDERAL JOINT WATER QUALITY
INVESTIGATION OF LAKE TAHOE
Work Authority 1299, Central District

SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Year Major Activity	M.Y.	Fund	($1,000's) Organization and Source of Funding DRD	ND	CD	SJD	SD	Totals	Coop[1/] Services
Expenditures for 1975-76									
Coordination of Field Work and Final Report	0.1	G			2			2	
Field Work and Laboratory Analyses	0.5	G			14			14	5
		R			7			7	
Prepare Final Report	0.15	G			6			6	
Management and Supervision	0.05	G			2			2	
Coordinate Cal-Nevada Compact Commission Work	0.3	G			10			10	
	---				---			---	-
Totals 1975-76	1.0	G			34			34	5
		R			7			7	
Expenditures for 1976-77									
Coordination of Field Work and Final Report	0.1	G			2			2	
Field Work and Laboratory Analyses	0.5	G			14			14	5
		R			7			7	
Prepare Final Report	0.15	G			6			6	
Management and Supervision	0.05	G			2			2	
Coordinate Cal-Nevada Compact Commission Work	0.3	G			10			10	5
	---				---			---	-
Totals 1976-77	1.0	G			34			34	10
		R			7			7	

1/ Cooperator's share only, not computed in the totals.

Edwin J. Barnes
June 25, 1975

MIDDLE FORK EEL RIVER STUDIES
(ADVANCE PLANNING)
1976-77 PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

This component was initiated on July 1, 1964, after authorization of an Upper Eel River Development as the first additional facility of the State Water Project. The activity began with a 3-year investigation of alternative conveyance routes from the Eel River to the Sacramento Valley, culminating with publication of Bulletin No. 171 in August 1967. Controversy over the recommended eastern routing delayed the planned work on formulation of a definite project; in September 1968, the California Water Commission recommended that the Department develop additional information on the routing aspect.

In May 1969, this reexamination of routing issues was, in turn, deferred while studies were prepared in response to the Governor's request for information on the alternatives to flooding Round Valley with a high Dos Rios Dam. This study of alternatives was reported upon in Bulletin No. 172 in December 1969. Work on reexamination of routing issues was resumed after Bulletin No. 172 was completed. At the request of the California Water Commission and the Water Contractor's Audit Committee, this phase of the program was extended and reduced in level and scope.

In 1972 the Legislature passed SB 107, California Public Resources Code Section 5093.50-5093.64 establishing the California Wild and Scenic Rivers System. This system covers the Klamath, Smith, Trinity, and Eel Rivers; however, it expresses legislative intent that the Department shall report to the Legislature on the need for water supply and flood control projects on the Eel River and its tributaries after 12 years (1985). Also in 1972 an agreement was made with the Department of Fish and Game to initiate an appraisal of fishery enhancement possibilities in the Eel River Basin.

The report on reexamination of routing issues was published in May 1973 as a district report, summarizing all work on the alternative Eel River projects and conveyance routes prior to establishment of the California Wild and Scenic Rivers System.

In December 1974 a report entitled "Eel River Basin Environmental Studies - Progress Report" was printed as the first of a series of reports documenting the status of environmental studies dealing with fish, wildlife, recreation, water quality, sedimentation, and landslides.

Need

The report to the Legislature in 1985 called for by SB 107, California Public Resources Code Section 5093.50-5093.64 will require additional information on environmental effects and enhancement possibilities in connection with Eel River development. Low key studies of these factors must continue at least through 1984.

Additional water supplies for the State Water Project will probably not be needed until sometime after 1990. The possible role of the Eel River in meeting the needs of the State Water Project beyond 1990 would be identified in the 1985 report to the Legislature as requested by SB 107, California Public Resources Code Section 5093.50-5093.64.

Before a proper decision can be reached as to whether all or a part of the Eel River should be excluded from wild river status, it is necessary that we know the condition of the Eel River under historic, as well as under expected project conditions. At the present time, there are many environmentally oriented problems in the basin that are not fully understood. A detailed study of historic conditions is needed before it will be possible to ascertain whether they will be aggrevated or improved by an Eel River Project. For the next 6 years work on the program will be dedicated almost solely to environmental problems and possible solutions.

OUTPUT SCHEDULE

Report	Type	Date
"Eel River Basin Environmental Studies - Progress Report"	District	December 1974
"Eel River Basin Environmental Studies - Progress Report"	District	June 1977
"Environmental Effects and Opportunities - Status Report"	District	June 1980
Report to the Legislature (Input to report required by SB 107)	District	October 1984

OBJECTIVES

To evaluate alternative plans for possible development of the Eel River to satisfy needs for water supply, flood control, recreation, fish and wildlife enhancement, and other environmental factors in the Eel River Basin; to develop a base for comparison with other sources of water supplies to satisfy needs elsewhere in the State; and to provide a basis for legislative determination as to whether all or any segment of the Eel River should be deleted from the Wild and Scenic Rivers System.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

Studies of major environmental concerns including water quality, fisheries enhancement, recreation, sedimentation, and landslides will be continued. Engineering studies will be reduced in scope to maintain the reduced funding level.

	$1,000
Program Management	20
General planning	25
Sedimentation and channel changes	25
Geology - landslides	20
Water quality	25
Fish and Game Contract	
Fishery enhancement	20
Fishery mitigation	30
Recreation	21
	$186

Environmental Considerations

This program is exempt from preparation of an Environmental Impact Report under Section 547 Class 6 as largely data collection. However, the program consists essentially of consideration of environmental factors.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

The program will consist of continuing environmental data collection and analysis. The work would be maintained at the 1975-76 level of expenditure. It will include fishery and wildlife studies, studies of sedimentation and channel changes, landslide studies, recreation studies, and water quality studies.

Environmental Considerations

Refer to 1976-77 statement.

	$1,000
Program Management	20
General planning	25
Sedimentation and channel changes	25
Geology - landslides	20
Water quality	25
Fish and Game Contract	
Fishery enhancement	20
Fishery mitigation	30
Recreation	21
	$186

INPUT

	1974-75	1975-76	1976-77
Support	$184,000	$186,000	$186,000
Man-Years	4.2	4.2	4.2

MIDDLE FORK EEL RIVER STUDIES
Work Authority 1257 - Northern District

SUPPLEMENT TO COMPONENT STATEMENT

Expenditures for 1975-76

	M.Y.	Project Fund $1,000
Program Management	0.4	20
General planning	1.1	25
Sedimentation and channel changes	0.9	25
Geology - landslides	0.4	20
Water quality	0.8	25
Fish and Game Contract		
Fishery enhancement	-	20
Fishery mitigation	-	30
Recreation	0.6	21
TOTALS 1975-76	4.2	$186

Expenditures for 1976-77

Program Management	0.4	20
General planning	1.1	25
Sedimentation and channel changes	0.9	25
Geology - landslides	0.4	20
Water quality	0.8	25
Fish and Game Contract		
Fishery enhancement	-	20
Fishery mitigation	-	30
Recreation	0.6	21
TOTALS 1976-77	4.2	$186

Significant Proposed Changes in Work Program for 1975-76

Passage of the "California Wild and Scenic Rivers Act" in 1972 dictated that the emphasis on this program be changed from advanced water development planning to environmental protection and enhancement planning. The emphasis of the program for the next several years has shifted from development of alternative export plans to development of data needed to assure environmental protection of the Eel River Basin. The name of the program component has been changed to reflect the changed character of the work.

George Deatherage
Melvin Schwartz
Central District
June 25, 1975

Water Rights Studies
(W.A. 1346, DP; and 1347, Central District)
1976-77 PROGRAM COMPONENT STATEMENT

SYNOPSIS:

History - Work started in July 1959. Original and supplemental filings for water rights for the State Water Project have been made and are being administered on the Feather River and in the Delta, with the most recent activity being participation in the water rights hearings which resulted in Decision 1379 and in the litigation which followed. At the present time there are some eleven lawsuits pending before federal and state courts. Fifty-three agreements with appropriative, riparian and other water users on the Feather River have been negotiated and are being administered. Two agreements with Delta municipal users have been executed. Negotiations with Delta industrial and agricultural users and the remaining Feather River users are continuing. Studies of dry year criteria and presentation of independent testimony before the State Water Resources Control Board are new functions as of 1975-76.

Need - In planning for the reasonable use and protection of the State's water supplies it is imperative that the Department present objective testimony on its own or in participation with others at hearings before the State Water Resources Control Board. In the planning, development, and operation of the State Water Resources Development System, the State must obtain, perfect and protect its own water rights and must respect and protect all local water rights and the environment of all areas subject to change because of the project. Reports concerning these matters are required pursuant to Decision 1379 and other permits issued by the State Water Resources Control Board.

OUTPUT SCHEDULE:

This is a continuing program. The administration of executed agreements, negotiation of agreements with new water users, and compliance with water right decisions will require actions periodically for the life of the project. That part of this program having to do with negotiation of agreements or with water rights determinations is of the "reaction" or "contingency" type; that is, funds and manpower are expended as conditions develop. The target completion date for agreements is 1978. Agreements known to be required:

Delta Users		Feather River Users	
Industrial	- 6	Appropriative	- 5
Agricultural	- 6	Riparian	- 9

Upon completion, each agreement will be the subject of a memorandum to the Director for his approval. Reports to the State Water Resources

Control Board concerning the status of project water rights are made annually. That part of the program having to do with the determination of a dry year criteria is expected to take two years and will be included in the Year 2000 Plan and will be submitted to the State Water Resources Control Board when the hearings pursuant to Decision 1379 are reopened for the purpose of receiving further evidence related to salinity control, protection of fish and wildlife in the Delta and coordination of the terms and conditions of the permits involved with subsequent decisions concerning the Delta. This reopening would not be later than July 1, 1978.

OBJECTIVE:

Obtain, perfect and administer the State's water rights, execute and administer agreements respecting water rights of all affected interests, collect data to monitor compliance with agreements, and prepare or coordinate the required reports.

WORK PROGRAM FOR THE CURRENT YEAR (1975-76):

	Planned Expenditures (Thousands of Dollars)
1. Continue work toward water entitlement agreements in the Delta with six Delta agencies representing agricultural users and with six individual industrial users. Continue investigation of the western Delta overland water facilities plan. Negotiations with the three agencies (North, Central and South Delta Water Agencies) established in 1974 by legislation continue with a goal of establishing an agreement prior to December 1978. Negotiations with the other three water agencies (East Contra Costa Irrigation District, Byron-Bethany Irrigation District and Contra Costa County Water Agency) will become more active as progress is made with the first three water agencies; estimated completion, December 1978. Negotiations with the six industrial water users will continue; estimated completion, December 1978.	40.0
2. Perform studies: (1) of counter-proposals by Delta water agencies to determine effect on the Project in terms of water or dollars, and (2) to provide a basis for decision of the Office of Chief Council.	25.0

WORK PROGRAM FOR CURRENT YEAR (1975-76): (con't)

		Planned Expenditures (Thousands of Dollars)
3.	Continue negotiations with five remaining Feather River appropriative water users. Negotiations have terminated on nine unsigned riparian water users and will be reopened only at users' request. Negotiations with new water users will be initiated as required. Make studies and evaluations and participate in proposed litigation as required.	11.0
4.	Continue monitoring of (1) diversions by 53 Feather River water users to assure compliance with agreements and (2) water temperature conditions in Feather River service area.	11.0
5.	Continue administration of: (1) executed Feather River agreements including forecast of available water, official notification of deliveries, and monitoring money exchanges and (2) execute Delta agreements requiring determination of depletions caused by the Project and of magnitude of payments or credits.	3.0
6.	Maintain liaison with interagency group developing water management plans for the Suisun Marsh.	5.0
7.	Prepare reports concerning progress of negotiations in Delta as required.	1.0
8.	Provide engineering services, staff review and coordination for State Water Project water rights and at water right hearings affecting the project.	41.0
9.	Act as DWR representative to the SWRCB in complying with its conditions regarding SWP permits and licenses.	21.0
10.	Program management and coordination	19.0
11.	Perform studies as necessary to determine project operating criteria during dry and critical hydrologic conditions.	34.0

WORK PROGRAM FOR CURRENT YEAR (1975-76): (con't)

		Planned Expenditures (Thousands of Dollars)
12.	Complete the selection of the southeastern Delta water control facilities to be included in the Peripheral Canal Environmental Impact Report.	5.0
13.	Conduct investigations on stream systems and watersheds to provide objective testimony on water supply and demands at water rights hearings and to provide input into water right matters related to proposed federal projects.	25.0
	TOTAL	241.0

Environmental Considerations - The objective of all work is to maintain and enhance the existing conditions; however, if any significant impact is foreseen as the work progresses, a full environmental assessment will be made and the need for a report subject to full public review will be evaluated at that time. (DWR Regs. - CEQA, Section 544(b)).

WORK PROGRAM FOR THE BUDGET YEAR (1976-77):

		Planned Expenditures (Thousands of Dollars)
1.	Continue work toward water entitlement agreements in the Delta with six Delta agencies representing agricultural users. Continue investigation of the western Delta overland water facilities plan. Negotiations with the three agencies (North, Central and South Delta Water Agencies) established in 1974 by legislation continue with a goal of establishing an agreement prior to December 1978. Negotiations with the other three water agencies (East Contra Costa Irrigation District, Byron-Bethany Irrigation District and Contra Costa County Water Agency) will become more active as progress is made with the first three water agencies; estimated completion, December 1978. Negotiations with the six industrial water users will continue; estimated completion, December 1978.	40.0

WORK PROGRAM FOR BUDGET YEAR (1976-77):(con't)

		Planned Expenditures (Thousands of Dollars)
2.	Perform studies: (1) of counter-proposals by Delta water agencies to determine effect on the Project in terms of water or dollars, and (2) to provide a basis for decision of the Office of Chief Council.	25.0
3.	Continue negotiations with five remaining Feather River appropriative water users. Negotiations have terminated on nine unsigned riparian water users and will be reopened only at users' request. Negotiations with new water users will be initiated as required. Make studies and evaluations and participate in proposed litigation as required.	9.0
4.	Continue monitoring of (1) diversions by Feather River water users to assure compliance with agreements and (2) water temperature conditions in Feather River service area.	11.0
5.	Continue administration of: (1) executed Feather River agreements including forecast of available water, official notification of deliveries, and monitoring money exchanges and (2) execute Delta agreements requiring determination of depletions caused by the Project and of magnitude of payments or credits.	5.0
6.	Maintain liaison with interagency group developing water management plans for the Suisun Marsh.	5.0
7.	Prepare reports concerning progress of negotiations in Delta as required.	1.0
8.	Provide engineering services, staff review and coordination for State Water Project water rights and at water right hearings affecting the project.	41.0
9.	Act as DWR representative to the SWRCB in complying with its conditions regarding SWP permits and licenses.	21.0
10.	Program management and coordination.	19.0

Water Rights Studies
W.A. 1346 - DP
W.A. 1347 - Central District

SUPPLEMENT TO COMPONENT STATEMENT

			($1,000s)		
	M.Y.	FUND	DP	CD	TOTAL
Expenditures for 1975-76: 1/					
Feather River Area	1.7	P		25.0	25.0
Delta Area	2.4	P		110.0	110.0
Activities Not Charged to Study Area	2.0	P	81.0		81.0
	1.0	G	25.0		25.0
TOTAL	7.1		106.0	135.0	241.0
Expenditures for 1976-77:					
Feather River Area	1.5	P		25.0	25.0
Delta Area	2.6	P		105.0	105.0
Activities Not Charged to Study Area	2.0	P	81.0		81.0
	2.0	G	50.0		50.0
TOTAL	8.1		131.0	130.0	261.0

1/ These figures do not agree with those shown in the 1975-76 Governor's Budget:

SIGNIFICANT CHANGES IN WORK PROGRAM FOR 1975-76

The dollar amounts shown are increased over the control schedule in accordance with the direction given in Mr. Reynolds' June 17 memo:

1. $34,000 in Project Funds has been added to implement the development of a dry year criteria in the Delta with regard to project operations as set forth in "Notes on Director's Review of the 1975-76 Planning Program, April 12, 1975" and on page 4 of Mr. Reynolds' memo, Item VII-E;

2. $5,000 in Project Funds has been added to complete the selection of southeastern Delta water control facilities to meet the Schedule for Review of Delta facilities as referred to in Mr. David Willis' memo to the Director dated June 10, 1975; and

3. $25,000 of General Fund money has been added to provide DWR input for the SWRCB hearings as set forth in "Notes on Director's Review of the 1975-76 Planning Program, Dated April 12, 1975", item No. 10.

SIGNIFICANT CHANGES IN WORK PROGRAM FOR 1976-77

1. Item 1 above continues.

2. Item 2 above -- schedule completion for February 1976.

3. Item 3 above is increased to $50,000 in anticipation of increasing workload.

David E. Pelgen
Harold Murata
James Morris
Walter Terry
June 25, 1975

RECREATION PLANNING AND IMPLEMENTATION
PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

This component under this title was started July 1972, and combines the activities formerly included in the Preland and Postland Recreation, Fish and Wildlife Enhancement Programs which were initiated prior to 1959. At that time, the Department established the Preland and Postland Programs for recreation and fish and wildlife planning for the State Water Project and recognized that both project funds and general funds should participate. The Preland Program used project funds and was to finance those studies leading to the completion of land use and acquisition plans. The Postland programs used the general fund and carried the studies from the land use and acquisition plans until their completion---usually the Recreation Development Plans. The Preland and Postland terms have been dropped from the present program; however, the basic funding distribution still applies. Under the previous Preland and Postland Programs, a number of land use and acquisition plans and recreation development plans for facilities of the State Water Project have been produced. Increased emphasis on implementation of recreation and fish and wildlife plans and on visitor facility planning was added to this merged program.

The implementation activities are project funded, and pursuant to Department Policy (Policy Manual Section 3235.2) Visitor Facility planning costs are project funded. Visitor facilities at many major features of the State Water Project have been planned. The Davis-Dolwig Act assigns to the Department of Water Resources the responsibility for recreation and fish and wildlife planning, including studies leading to the completion of land use and acquisition plan reports. Water Code Section 11920 assigns certain responsibilities to the Department relative to the State Water Project's fishing access sites.

Need

The population of California is increasing at a lesser rate than the demands for recreation resources, particularly those that are water oriented. By law, the Department is required to develop plans to fully realize the recreation and fish and wildlife potentials of state-constructed water projects. Additionally, the implementation of the approved development plans, and the reexamination of trends and influences affecting potentials of completed and future recreation developments are necessary. Visitor facility planning leads to the

development of new, and the updating of existing facilities that accommodate the public visiting certain features of the State Water Project.

OUTPUT SCHEDULE

This component is a continuing activity intended to assure adequate and appropriate recreation, fish and wildlife enhancement and visitor facilities planning and implementation for the State Water Project.

Feature	Type of Report	Completion Date 1975-76	1976-77
Upper Castaic Canyon Study	Memorandum		6/1/77
Elizabeth Lake Canyon Study	Memorandum		4/30/77
Pyramid Lake Visitor Facility Development Plan and EIR	Memorandum	6/30/76	(9/30/76)
Silverwood Lake Recreation and Fish and Wildlife Reassessment	Memorandum		2/1/77
Pyramid Lake Recreation and Fish and Wildlife Development Plan	117	12/31/75	
Wildlife Preservation Plan, State Water Project, Southern California	117	2/1/76	
Peace Valley - Quail Lake Area Evaluation Plan	Memorandum		12/1/76
Piru Creek Fishery Flow Studies	Memorandum	6/30/76	
West Branch Master Sanitation System	Memorandum		6/30/77
Lake Oroville-Thermalito Forebay and Afterbay-Lower Feather River	Memorandum	6/30/76	
Oristimba Creek	Memorandum	6/30/76	
Frenchman Flat-Piru Creek Recreation and Fish and Wildlife Development Plan	117		12/31/76

OBJECTIVE

The objectives of this program are to ensure that California's water project recreation resources, including fish and wildlife and water project visitor facilities, are adequately developed along with other primary project purposes, and that a balance is achieved among the several project purposes as modifications are proposed during construction and operation to accommodate changing conditions.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

Recreation and Fish and Wildlife reports are scheduled for completion during the 1975-76 fiscal year. Those of the Bulletin 117 series include: (1) Wildlife Preservation Plan, State Water Project, Southern California; (2) Pyramid Lake Recreation and Fish and Wildlife Development Plan.

Recreation and Fish and Wildlife Enhancement Memorandum Reports will be prepared this fiscal year regarding the State Water Project for the (1) Piru Creek Fishery Flow Studies; (2) Lake Oroville-Thermalito Forebay and Afterbay-Lower Feather River; (3) Oristimba Creek.

Coordination activities with the Wildlife Conservation Board relevant to fishing access site developments will continue.

The Visitor Facilities Program stressing the Department's varied activities will continue. The program will include all visitor facility planning and the implementation of plans. Liaison and coordination with all interested public and government agencies will be provided and visitor facilities staff advice will be made available to the Directorate. A memorandum report, "Pyramid Lake Visitor Facility Development Plan and EIR" will continue this year.

Coordination and administrative activities include administration of planning services with the Departments of Fish and Game and Parks and Recreation, Recreation Coordination Committee meetings, review and liaison concerning Federal Power Commission matters, etc.

Although not covered in the summary of 1975-76 activity costs, the Southern District anticipate Project Fund augmentations will be necessary to perform the following work during the current year:

1. Upper Castaic Canyon ($25,000)
2. Wildlife Preservation Plan ($5,000 additional funds needed)

ENVIRONMENTAL CONSIDERATIONS

The Recreation, Fish and Wildlife Enhancement Program involves the implementation of nonexempt discretionary projects which may have significant adverse impact on the environment and accordingly will require the preparation of environmental impact reports.

The implementation of a visitor facility project may or may not have a significant adverse impact on the environment. Exemption analysis would be required.

Administrative activities will not have adverse effects on the environment and accordingly would be exempt by definition of non-project status under Section 544 of the Department's Regulations.

Summary of 1975-76 Activity Costs: (in $1,000)	Project Fund	General Fund	Total
1. Pyramid Lake Recreation and Fish and Wildlife Development Plan	20.9	7.1	28.0
2. Piru Creek Fishery Flow Studies	5.0	0	5.0
3. Pyramid Lake Visitor Facility Development Plan and EIR	11.0	0	11.0
4. Wildlife Preservation Plan, State Water Project, Southern District	11.0	8.3	19.3
5. Oristimba Creek	0	1.2	1.2
6. Lake Oroville-Thermalito Forebay and Afterbay-Lower Feather River	0	18.0	18.0
Activities Not Charged to Study Areas:			
1. Coordination with Wildlife Conservation Board (Fishing Access Sites)	3.2	3.2	6.4
2. Implementation, Administration and Management of Programs	49.2	57.5	106.7
3. Visitor Facilities	5.4	0	5.4
4. Coordination with USFS	3.2	0	3.2
5. Coordination, Negotiations - Fish and Game (Contract Services Units) and Parks and Recreation	3.2	3.2	6.4
Total	112.1	98.5	210.6

WORK PROGRAM FOR BUDGET YEAR (1976-77)

Recreation and fish and wildlife planning studies will be conducted relative to the following: (1) Peace Valley-Quail Lake Area Evaluation Plan; (2) West Branch Master Sanitation System; (3) Upper Castaic Canyon; (4) Elizabeth Lake Canyon; (5) Silverwood Lake (Reassessment). Memorandum reports will be prepared for each of the above features.

A Recreation and Fish and Wildlife Development Plan of the 117 Bulletin Series will be prepared for Frenchmans Flat-Piru Creek.

The Southern District will finalize an Environmental Impact and Development Plan Report for the Pyramid Lake Visitor Facility.

Recreation planning, development, and implementation will be coordinated with the Department of Parks and Recreation.

Recreation planning activities outlined in agreements between the Department of Water Resources and the Department of Fish and Game will be managed, and reports will be prepared as required for special meetings, hearings, etc. Advice and date in connection with project cost allocation will be provided as required.

Coordination with the Wildlife Conservation Board to assure adequate development of fishing access sites within the State Water Project will be continued.

The Visitor Facilities Program stressing the Department's varied activities, particularly those related to the General Fund, will be continued. The program will include all visitor facility planning and implementation of plans. Liaison and coordination with all interested public and government agencies will be provided, and visitor facilities staff advice will be made available to the Directorate.

Implementation activities will include liaison, advice, and coordination services concerning recreation, fish and wildlife, visitor facilities, and related matters within the Department and with interested federal, state, and local agencies.

Department of Parks and Recreation's design and construction plans for recreation development at State Water Project features as required by the Davis-Dolwig Act will be reviewed, and in accordance with DWR-USFS Memoranda of Understanding. Program staff will cooperate with the U. S. Forests, and will develop plans and facilities for optimum development.

Although not covered in the Summary of 1976-77 activity costs, the Southern District anticipates Project Fund augmentations for the Upper Castaic Canyon Area ($25,000) and the Silverwood Lake area - reassessment ($10,000).

Summary of 1976-77 Activity Costs: (in $1,000)	Project Fund	General Fund	Total
1. Pyramid Lake Visitor Facility Development Plan and EIR	10.0	0	10.0
2. Frenchman Flat-Piru Creek Recreation and Fish and Wildlife Development Plan	10.0	0	10.0
3. Peace Valley - Quail Lake Area Evaluation Plan	0	10.0	10.0
4. West Branch Master Sanitation System	20.0	0	20.0
5. Elizabeth Lake Canyon Study	0	10.0	10.0

Activities Not Charged to Study Areas	Project Fund	General Fund	Total
1. Coordination with Wildlife Conservation Board (fishing acess sites)	4.0	4.0	8.0
2. Implementation, Administration, and management of programs	53.6	*70.5	124.1
3. Visitor Facilities	6.5	0	6.5
4. Coordination with USFS	4.0	0	4.0
5. Coordination, Neogitations - Fish and Game and Parks and Recreation Contract Service Units	4.0	4.0	8.0
Total	112.1	98.5	210.6

*It is anticipated that the Central District will transfer $18,000 from this activity towards a Recreation Potential Reassessment Program. The specific area has not been determined at this time.

INPUT

	1974-75	1975-76	1976-77
Expenditures			
General Fund	$70,000	$98,500	$98,500
Project Fund	$119,000	$112,100	$112,100
Man-Years			
General Fund	2.4	3.0	3.0
Project Fund	4.0	3.6	3.6
Total Expenditures	$189,000	$210,600	$210,600
Total Man-Years	6.4	6.6	6.6

RECREATION PLANNING AND IMPLEMENTATION

Work Authority	Organization
1502	Division of Planning
1505	San Joaquin District
1506	Southern District
1504	Central District

Supplement to Program Statement

EXPENDITURES FOR 1975-76 (in $1,000) Activity	Project Fund		General Fund		Total
1/ Study Areas:					
I. Southern District					
Pyramid Lake Recreation and Fish and Wildlife Development Plan	20.9		7.1		28.0
Piru Creek Fishery Flow Studies	5.0		0		5.0
Wildlife Preservation Plan	11.0		8.3		19.3
Pyramid Lake Visitor Facility Development Plan and EIR	11.0		0		11.0
2/ Implementation, Administration, and Management of Programs	21.2		21.5		42.7
Sub Total (*2.1)	69.1	(1.0)	36.9	(3.1)	106.0
II. Central District					
Lake Oroville-Thermalto Forebay and Afterbay-Lower Feather River	0		18.0		18.0
2/ Implementation, Administration and Management of Programs	0		12.0		12.0
Sub Total	0	(1.0)	30.0	(1.0)	30.0
III. San Joaquin District					
Oristimba Creek	0		1.2		1.2
2/ Implementation, Administration and Management of Programs	0		12.0		12.0
Sub Total	0	(0.4)	13.2	(0.4)	13.2

*( )=M.Y.

2/ Activities not charged to study areas

1/ Includes contract services with Fish and Game

	Project Fund		General Fund		Total
IV. Division of Planning					
2/ Coordination with Wildlife Conservation Board (fishing access sites)	3.2		3.2		6.4
2/ Implementation, Administration, and Management of Programs	28.0		12.0		40.0
2/ Visitor Facilities	5.4		0		5.4
2/ Coordination with USFS	3.2		0		3.2
2/ Coordination, Neogitations - Department of Fish and Game (Contract Services Unit) and Parks and Recreation	3.2		3.2		6.4
Sub Total	(1.5) 43.0	(0.6)	18.4	(2.1)	61.4
TOTAL	(3.6) 112.1	(3.0)	98.5	(6.6)	210.6

RECREATION PLANNING AND IMPLEMENTATION

Work Authority	Organization
1502	Division of Planning
1505	San Joaquin District
1506	Southern District
1504	Central District

Supplement to Program Statement

EXPENDITURE FOR 1976-77
(in $1,000)

Activity	Project Fund	General Fund	Total
1/ Study Areas:			
I. Southern District			
Pyramid Lake Visitor Facility Development Plan and EIR	10.0	0	10.0
Frenchmans Flat-Piru Creek Recreation Fish and Wildlife Development Plan	10.0	0	10.0

*( )=M.Y. 2/ Activities not charged to study areas
1/ Includes contract services with Fish and Game

		Project Fund		General Fund		Total
	Peace Valley-Quail Lake Re-evaluation	0		10.0		10.0
	West Branch Master Sanitation System	20.0		0		20.0
	Elizabeth Lake Canyon Study	0		10.0		10.0
2/	Implementation, Administration, and Management of Programs	29.1		16.9		46.0
	Sub Total *(2.1)	69.1	(1.0)	36.9	(3.1)	106.0
II.	Central District					
2/	Implementation, Administration, and Management of Programs Sub Total	0	(1.0)	30.0	(1.0)	30.0
III.	San Joaquin District					
2/	Implementation, Administration, and Management of Programs Sub Total	0	(0.4)	13.2	(0.4)	13.2
IV.	Division of Planning					
2/	Coordination with Wildlife Conservation Board (fishing access sites)	3.2		3.2		6.4
2/	Implementation, Administration, and Management of Programs	28.0		12.0		40.0
2/	Visitor Facilities	5.4		0		5.4
2/	Coordination with USFS	3.2		0		3.2
2/	Coordination, Neogitations-Fish and Game (Contract Service Units) and Parks and Recreation	3.2		3.2		6.4
	Sub Total (1.5)	43.0	(0.6)	18.4	(2.1)	61.4
	TOTAL (3.6)	112.1	(3.0)	98.5	(6.6)	210.6

2/ Activities not charged to study areas

*( )=M.Y. 1/ Includes contract services with Fish and Game

John McClurg
June 26, 1975

PROGRAM COMPONENT STATEMENT
BAY-DELTA ENVIRONMENT PROTECTION STUDY

SYNOPSIS

History

This component is an outgrowth of the former Delta Fish and Wildlife Protection Study. It was established pursuant to an interagency agreement between the State Departments of Water Resources and Fish and Game and the U. S. Bureaus of Reclamation and Sport Fisheries and Wildlife, dated July 13, 1970. It is needed: (1) to respond to unanswered concerns raised at the Delta Water Rights Hearings for the State Water Project and federal Central Valley Project; (2) to define and refine environmental criteria to protect the Delta fishery; and (3) to develop information upon which to base the design of the fish protective facilities for the Peripheral Canal. This component study began on July 1, 1971. Project funded work under this component represents the DWR share of the various individual studies contained in the interagency agreement. Much of the work is done under contract with DFG and consultants. The progress and funding level of all the individual studies is reviewed annually by the Four-Agency Directors. As approved by the Four-Agency Directors, the scope and funding level of the fish facilities portion of the program has been increased to provide the biological and engineering data needed to plan and design an efficient fish protective facility for the Peripheral Canal within the Department's current schedule for design and construction of that facility. As also approved by the Four-Agency Directors, an increase in funds to consultants on turbidity modeling was approved, as well as an increase in the Department's coordination effort in the Suisun Marsh studies.

Need

The Bay-Delta ecosystem is complex and is changing continuously, and it is recognized that a major factor affecting the fish and wildlife resource of the Bay-Delta is the operation of the Central Valley Project and the State Water Project. This factor was recognized in the Water Rights Hearings before the State Water Resources Control Board leading to the interim permit for the State Water Project, and will be considered in any future hearings (1978). Defining proper design and operating criteria for these projects, which will assure protection of fish and wildlife requires a thorough understanding of the requirements of these resources.

OUTPUT SCHEDULE

Fish Facilities Studies will conduct studies to provide sufficient biological and engineering design criteria to initiate final design of the canal intake, fish screen facility, and Highway 160 relocation (July 1976). Complete studies to make a final decision of the foregoing (July 1977). Complete reports on foregoing (December 1977).

Water Quality Studies will continue the development and improvement of the phytoplankton model and expand it to include all of the Delta channels and extend the Delta phytoplankton modeling up the San Joaquin River. Hydroscience will develop a new turbidity model to operate on a two-layer basis. These models will be used to make projections of the future effects of the CVP-SWP on the Bay-Delta's environment for use in the 1978 water right hearings.

Fisheries Studies will continue to develop the relationship of striped bass survival to both outflow and diversion so that the influence of the two can be determined. Continue to collect data on adult bass population so that the effect of project operation can be determined and the interim water right permits (D-1379) possibly modified in the 1978 hearings.

Annual Report - Under the Four-Agency Agreement (Provision 3), the Department of Fish and Game has the responsibility of preparing an annual progress report on all the individual studies of the agreement, after receiving input from participating agencies. The section of this report dealing with the items described in the work program (also listed in the work authority document) serve as the report on the work covered in this statement. The annual progress report is scheduled for completion on May 31, of each year.

OBJECTIVE

To develop an adequate understanding of the requirements of fish and wildlife resources in the Bay-Delta System, develop proper design and operating criteria for the SWP-CVP for the protection and enhancement of the Bay-Delta fish and wildlife resources and monitor the operations to evaluate and modify these criteria as necessary.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

Pursuant to the Four-Agency (DWR, DFG, USBR, & USBSF&W) Agreement of July 13, 1970, the following studies will be conducted, a portion of which will be conducted jointly with the Department of Fish and Game.

1. Fisheries Ecological Studies (DWR $146,200, Including $124,500 to DFG for Contract Services, USBR to provide $105,000)

   a. Studies will continue on young striped bass egg and larvae needs related to spawning and survival to identify controlling factors and to evaluate management operation criteria for increased survival. The need for continuing this study and the particular area of emphasis are reevaluated annually.

   b. An index of adult population abundance to obtain the numbers of each year-class reaching the adult fishery will be refined. The need for continuing this study is reevaluated annually.

c. Conduct experiments on handling of salmon at fish facilities. Conduct pilot study to determine optimum number of salmon to mark and release and attempt to recapture.

2. Water Quality (DWR $350,000, Including $59,700 to DFG for Contract Services, USBR to provide $255,000)

a. Investigation of factors controlling dissolved oxygen and algae growth in order to provide a predictive tool (models) to determine the effect of the CVP-SWP on these ecological factors will continue.

b. Studies will be accelerated on the effects of water development on the turbidity (light transparency) of the Delta and Bay to determine if future diversions of river sediments will have any effect on future algae growth, waste assimilative capacity, and the fishery resources.

3. Fish Facilities (DWR $802,000, Including $29,200 to DFG for Contract Services, USBR to provide $40,000)

a. Fish Occurrence and Distribution Studies: Complete fish, egg and larval occurrence and distribution survey. Complete downstream migration survey. Complete analysis of samples. Initiate report to form basis to refine operational criteria.

b. Intake Studies: Coordinate the development of a hydraulic model(s) of the canal intake by U. C. Davis, and monitor the test results.

c. Fish Screen Development Studies: Continue long-term swimming ability and perforated plate response tests. Develop initial screen approach velocity data. Construct test facilities and conduct vegetative growth, debris clogging and cleaning tests.

d. Fish Return Facility Studies: Fabricate a return system simulator and conduct respective tests.

e. Evaluation of Existing Fish Facilities: Continue to monitor fish screen developments of other agencies.

4. Suisun Marsh Studies (DWR $11,000, USBR to Provide $147,000)

a. Investigate the factors which affect and control the desirable wildlife habitat plants in the Marsh. Determine the most desirable methods of maintaining and enhancing the habitat.

b. Investigate the various alternative sources of water for the Marsh and alternative water management plans that could be used.

Environmental Considerations

Information collected under these studies are categorically exempt activities as outlined in Section 547, Class 6, of the Department of Water Resources Regulations for Implementation of the Environmental Quality Act of 1970. Environmental planning for possible future actions related to the proposed Peripheral Canal, as a feature of the existing State Water Project and the federal Central Valley Project, constitutes a nonproject exemption under Section 544(b), and, therefore, no EIR is required as part of these studies. However, a state EIR is being prepared in another program (W.A. 1463) relative to the implementation of the Peripheral Canal.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

Pursuant to the Four-Agency (DWR, DFG, USBR, and USBSF&W) Agreement of July 13, 1970, the following studies will be conducted, a portion of which will be conducted jointly with the Department of Fish and Game.

1. Striped Bass Ecological Studies (DWR $146,200, Including $124,500 to DFG for Contract Services, USBR to Provide $182,000)

a. Reduce field program of measuring young striped bass in mid-summer. Continue analyzing data and writing up results of study.

b. Continue tagging of adult striped bass through 1976. The need for continuing this study will be reevaluated at this time.

c. Initiate studies on flow requirements for salmon migration. Start of full-scale study to depend on river flow conditions.

2. Water Quality (DWR $350,000, Including $59,700 to DFG for Contract Services, USBR to Provide $211,000)

a. Investigation of the factors controlling dissolved oxygen and algae growth will be continued in order to provide a predictive tool (model) to determine the effect of the CVP-SWP on these ecological factors. This model will be used to make predictions on the effect of the CVP-SWP for the 1978 Water Right Hearings.

b. The turbidity model for the Bay-Delta must be in operation during 1976-77, so that it can be used to make predictions for the 1978 Water Right Hearings. This portion of the program is being accelerated.

3. Fish Facilities (DWR $492,000, Including $29,200 to DFG for Contract Services. USBR to Provide $77,000).

a. Fish Occurrence and Distribution Studies: Complete report to form bases to refine operational criteria.

b. Intake Studies: Participate in the completion of a report on a hydraulic model study of the intake.

c. Fish Screen Development Studies: Complete long-term swimming ability and perforated plate response tests on shad. Develop final screen approach velocity data. Complete report on swimming ability and impingement. Complete vegetative growth tests and respective report. Complete debris clogging and cleaning tests, and respective report. Compile data for final decision of Four-Agency Directors on screening concept to be adopted for Peripheral Canal. Conduct verification tests as required.

d. Fish Return Facility Studies: Complete return system simulator tests and respective report. Conduct verification tests as required.

e. Evaluation of Existing Fish Facilities: Continue to monitor fish screen developments of other agencies.

4. Suisun Marsh Studies (DWR $5,000, USBR to Provide $140,000)

a. Marsh Requirement: Complete the studies that determine the requirements needed to maintain the Marsh.

b. Alternatives: Determine the alternative methods of protecting and enhancing the Marsh.

Environmental Considerations

Information collected under these studies are categorically exempt activities as outlined in Section 547, Class 6, of the Department of Water Resources Regulations for Implementation of the Environmental Quality Act of 1970. Environmental planning for possible future actions related to the proposed Peripheral Canal, as a feature of the existing State Water Project and the federal Central Valley Project, constitutes a nonproject exemption under Section 544(b), and, therefore, no EIR is required as part of these studies. However, a state EIR is being prepared in another program (W.A. 1463) relative to the implementation of the Peripheral Canal.

INPUT - W.A. 1382 ($1,000s)

Year	1974-75	1975-76 Gov. Budget	1975-76[1/] Proposed	1976-77[1/] Proposed
Project Funds[2/]				
Striped Bass	139	146.2	146.2	146.2
Water Quality	236	240	350	350
Fish Facility	773	373	802	492
Suisun Marsh	0	0	11	5
TOTAL, DWR	1,148	759.2	1,309.2	993.2
Man Years	15.6	13.0	17.4	12.8
Input to Program by Other Four-Agency Participants:				
USBR	695	-	637	610
DFG	588	-	565	555
USBSF&W[3/]				
TOTAL PROGRAM	$2,431		$2,511.2	$2,158.2

1/ 1975-76 funding approved at April 29, 1975, Four-Agency Directors' meeting. If the USBR is successful in increasing its 1975-76 or 1976-77 budgets, then the DWR amounts will be reduced proportionately.

2/ For work mutually determined to be a water development responsibility, DWR and USBR are observing a general policy of equal funding levels over the years. It is expected that deviations from this policy due to budget limitations will be reconciled in final cost sharing for the Peripheral Canal.

3/ In addition, the USBSF&W has funded and assigned a full-time biologist to the DFG Stockton Office to participate in these studies as they progress.

BAY-DELTA ENVIRONMENT PROTECTION STUDY
W.A. 1382, CENTRAL DISTRICT
SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Years 1975-76 1976-77	M.Y.	Fund	Central Dist. Project Funds ($1,000s)	Totals	Coop. Services
Expenditures for 1975-76					
Striped Bass	0.8	P	146.2	146.2	
Water Quality	3.5	P	350	350	
Fish Facility	11.6	P	802	802	
Suisun Marsh	0.5	P	11	11	
TOTAL DWR	17.4		1,309.2	1,309.2	
USBR					637
DFG					565
TOTAL COOPERATOR'S					1,202
Expenditures for 1976-77					
Striped Bass	0.8	P	146.2	146.2	
Water Quality	3.5	P	350	350	
Fish Facility	8.3	P	492	492	
Suisun Marsh	0.2	P	5	5	
TOTAL DWR	12.8		9993.5	993.5	
USBR					610
DFG					555
TOTAL COOPERATOR'S					1,165

DELTA FACILITIES -- PLANNING AND EVALUATION
PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

July 1, 1965 - Work started based on the Interagency Delta Committee report of January 1965, which recommended a joint-use federal-state Peripheral Canal be operational by 1974.

May 19, 1967 - Timing study indicated that the joint project would not be needed for water supply until 1976, and presented preliminary findings on certain interim facilities that could be constructed by the State if federal authorization of a joint facility should be delayed.

November 20, 1970 - Based on delays in securing federal authorization and revised projections of water demand buildup, a timing study showed that the need for a joint federal-state Peripheral Canal for water supply purposes could be delayed to 1980. However, studies indicated that the project is needed at the earliest possible time to protect the aquatic environment and fishery resources of the Delta.

November 9, 1972 - Based on continued delay of federal authorization of the joint facility and further studies of interim facilities, the Director announced the Department was proceeding with preconstruction engineering on a full-length, full-sized Peripheral Canal, which would meet the joint needs of the state and federal projects.

April 4, 1975 - Based on delays in completion of the Department's EIR and continuing delays of federal authorization, the date of initial operation was postponed until 1982.

Need

The Sacramento-San Joaquin Delta is the link between the surplus water supplies of the Sacramento Valley and the California Aqueduct of the State Water Project. Facilities are necessary in the Delta to assure that project water demands can be satisfied and that the environment, ecology, and water needs of the Bay-Delta are protected and, where possible, enhanced. The consequences of not meeting these needs include: (1) possible damages to the Bay-Delta's environment and ecology; (2) damage to the fishery; and (3) inability to the water quality or quantity objectives of the State Water Project.

OUTPUT SCHEDULE

Name of Report	Type of Report	Dates Due
Soil Salinity	Memorandum	10-74 & 10-75
Channel Scour Monitoring	Memorandum	9-74 & 9-75
Special Technical Studies	Annual District Progress	6-75 & 6-76
Peripheral Canal EIR	Final Draft (Dept Review)	12-75
	Final Report	6-76
Sacramento-San Joaquin Delta, Technical Basic Data	Bulletin	6-77
Peripheral Canal Recreation and Wildlife Concept Report	District	4-76
Peripheral Canal Recreation and Wildlife Land Use Acquisition Plan	District	6-76
Peripheral Canal Intake Sediment Study Report	Memorandum	1-76
Delta Master Recreation Plan Report (participant)	Resources Agency	1-76
Peripheral Canal Wildlife Inventory Report	DF&G	1-76
Peripheral Canal Wildlife Management Proposals Report	DF&G	5-76
Peripheral Canal Visitor Temporary Facilities Plan (for construction phase)	Memorandum	10-76
Southeast Delta Correlative Facility Report	Memorandum	1-77

OBJECTIVE

(1) Complete planning studies, including the EIR, required to design, construct and operate a federal-state joint-use Peripheral Canal and certain related facilities recommended for the Delta in the federal-state Interagency Delta Committee's plan of 1965; (2) development of Bay-Delta water supply operational criteria and recommendations for water management systems to assure that project water demands are satisfied and the environment, ecology, and water needs of the Delta are protected and, where possible, enhanced; (3) development of information on the effects of the State Water Project on the Delta and San Francisco Bay areas; and (4) compiling of the technical data that has been collected throughout the Bay-Delta area and publishing this information in bulletin form.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

A. Planning Studies (1464)

1. Peripheral Canal ($246,300)

a. Continue to provide information and assist in evaluation of problem areas related to the canal alignment and design of canal facilities.

b. Continue to provide information necessary to obtain required rights-of-way and permits for the Delta facilities.

c. Continue studies to select, locate, and size the correlative facilities required for first and second stage of the Peripheral Canal.

d. Complete Peripheral Canal Intake Sediment Study for estimating through data correlation and mathematical relationships the sedimentation effects on the Sacramento River, the Peripheral Canal, and Clifton Court Forebay as the result of Peripheral Canal operation.

e. Prepare interim recreation use plan for borrow pits along the Peripheral Canal alignment as the result of the Highway Borrow Program.

f. Participate in the updating of The Resources Agency's Delta Master Recreation Plan as required by the passing of HR20.

g. Complete and make necessary revisions in the parts of the draft EIR relating to the canal and its impact on the environment within the canal right-of-way, prepare individual responses to EIR draft comments as necessary, and complete and process the final EIR.

h. Complete wildlife inventory along Peripheral Canal alignment and complete reports summarizing the wildlife inventory data and outlining specific wildlife management plan proposals for the canal.

i. Complete the Peripheral Canal Recreation and Wildlife Concept Report and the Peripheral Canal Recreation and Wildlife Land Use and Acquisition Report.

j. Continue to provide site planning criteria for proposed recreation and wildlife developments along the canal to determine the basic earthwork formation required for inclusion during initial canal construction.

k. Initiate experimental planting program at the Peripheral Canal Test Levee site to determine types of plant materials most suitable for use along the canal embankments, waterside berms, and recreation and wildlife areas.

l. Initiate preparation of Wildlife Management Plan (Bulletin No. 117) to establish the most effective management practices for preservation and enhancement of wildlife along the Peripheral Canal.

m. Initiate preparation of a series of Bulletin No. 117 (Recreation Development Plans) that would provide the basic framework for funding, design, construction, and operation and maintenance of the recreation facilities proposed along the Peripheral Canal.

n. Initiate preparation of (temporary) Visitor Facilities Plan for facilities at significant locations for the general public to observe various stages of construction of the Peripheral Canal and related facilities.

o. Initiate work on preparation of (permanent) Visitor Facilities Plan (Bulletin No. 117) for facilities to be included as an integral part of the Peripheral Canal.

2. Coordination and Special Assignments ($59,200)

a. Continue public information program such as through answering correspondence; preparation of brochures, reports, etc.; providing speakers for tours, schools, civic clubs; providing tour guides for water contractors, water commissioners, schools and local groups, etc.

b. Continue general coordination of studies with local, state, and federal agencies.

c. Undertake special assignments as required.

B. Evaluation Studies (W.A. 1463)

1. Bay-Delta Water Management Studies ($342,000)

a. Continue the development and evaluation of management tools and methodology to be utilized in establishing appropriate operation and management practices for the Bay-Delta water system.

b. Continue the development of operational criteria and recommendations for water management systems to provide for the Delta water needs and the protection of environment and ecology of the system under pre- and post-Peripheral Canal conditions.

c. Continue the evaluation of operational requirements and procedures for the Peripheral Canal.

d. Continue the environmental assessments of operational effects outside right-of-way of the Peripheral Canal.

e. Continue to evaluate the effect of the Clifton Court operation on the Delta environment as necessary.

f. Assist in evaluation of proposals for water supply facilities for western Delta.

g. Complete the final Peripheral Canal Environmental Impact Report.

h. Start work on the Sacramento-San Joaquin Delta Technical Basic Data Bulletin.

2. Soil Salinity Monitoring Study ($53,000)

a. Collect data for base soil salinity conditions in the western Delta, under continuing surveillance program until western Delta agricultural water supply facilities are built and tested.

b. Continue to correlate soil salinity data with channel salinities to determine effect, if any, on western Delta agricultural environment.

3. Channel Scour Monitoring Study ($53,000)

a. Collect data at critical locations in the southern Delta under continuing surveillance program to detect possible scour as SWP diversions build up until the Peripheral Canal becomes operational.

b. Evaluate data and recommend remedial works or other action, if required, as project diversions increase.

4. Special Technical Studies and Assignments resulting from outside influences relative to the SWP and its operation or other aspects.

C. Monitoring Activities (W.A. 1434)

1. Southern Delta Monitoring ($33,500)

Continue monitoring water quality parameters in the southern Delta. This is an interim program that replaces the monitoring format done as a participant under W.A. 1424 (San Joaquin Drain).

Environmental Considerations

Data collection and resources evaluation activities conducted under this program are categorically exempt activities as outlined in Section 547, Class 6, of the Department of Water Resources Regulations for Implementation of the Environmental Quality Act of 1970. A state EIR on the Peripheral Canal, as a feature of the existing State Water Project, will be completed during 1975-76 as described below.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

A. Planning Studies

1. Peripheral Canal - ($215,600)

a. Continue studies to select, locate, and size the correlative facilities required for first and second stage of the Peripheral Canal.

b. Continue to provide information and assist in evaluation of problem areas related to the Canal alignment and design of canal facilities.

c. Continue to provide information necessary to obtain required rights-of-way and permits for the Delta facilities.

d. Complete temporary visitor facilities plan for construction phase of Peripheral Canal.

e. Continue work on preparation of (permanent) visitor facilities plan for facilities to be included as an integral part of the Peripheral Canal.

f. Continue preparation of Wildlife Management Plan (Bulletin 117) to establish the most effective management practices for preservation and enhancement of wildlife along the Peripheral Canal.

g. Continue experimental planting program at the Peripheral Canal Test Levee Site to determine types of plant materials most suitable for use along the canal embankments, waterside berms, and recreation and wildlife areas.

h. Continue preparation of a series of Bulletin 117 (Recreation Development Plans) that would provide the basic framework for funding, design, construction, and operation and maintenance of the recreation facilities proposed along the Peripheral Canal.

i. Complete site planning criteria for proposed recreation and wildlife developments along Canal to determine the basic earthwork formation required for inclusion during initial canal construction.

2. Coordination and Special Assignments ($60,100)

a. Continue public information program such as through answering correspondence; preparation of brochures, reports, etc.; providing speakers for tours, schools, civic clubs; providing tour guides for water contractors, water commissioners, schools and local groups, etc.

b. Continue general coordination of studies with local, state, and federal agencies.

c. Undertake special assignments as required.

B. Evaluation Studies

1. Bay-Delta Water Management Studies ($344,000)

a. Continue the development and evaluation of management tools and methodology to be utilized in establishing appropriate operation and management practices for the Bay-Delta water system.

b. Evaluate, refine, and update operational criteria as required and continue development toward control systems to provide for the Delta water needs and the protection of environment and ecology of the system under pre- and post-Peripheral Canal conditions.

c. Refine and update operational requirements and procedures for the Peripheral Canal, as required.

d. Continue, as necessary, processing of Peripheral Canal EIR.

e. Continue to refine and update Clifton Court operation criteria and evaluate the effect on the Delta environment.

f. Assist in evaluation of proposals for water supply facilities for western Delta.

h. Complete the Sacramento-San Joaquin Delta Technical Data Bulletin.

2. Soil Salinity Monitoring Study ($53,000)

a. Collect data for base soil salinity conditions in the western Delta under continuing surveillance program until western Delta agricultural water supply facilities are built and tested.

b. Continue to correlate soil salinity data with channel salinities to determine effect, if any, on the western Delta agricultural environment.

3. Channel Scour Monitoring Study ($53,000)

a. Collect data at critical locations in the southern Delta under continuing surveillance programs to detect possible scour as SWP diversions build up until the Peripheral Canal becomes operational.

b. Evaluate data and recommend remedial works or other action, if required, as project pumping builds up.

4. Special Technical Studies and Assignments resulting from outside influences relative to the SWP and its operation.

Environmental Considerations

Data collection and resources evaluation activities conducted under this program are categorically exempt activities as outlined in Section 547, Class 6, of the Department of Water Resources Regulations for Implementation of the Environmental Quality Act of 1970. A state EIR on the Peripheral Canal, as a feature of the existing State Water Project, will be completed during 1975-76 as described below.

INPUT

	1974-75	(In $1,000s) 1975-76 Gov. Bud.	1976-77 Proposed
W.A. 1464 General Fund	0	0	77.1
W.A. 1464 Project Fund	351	306 1/	198.6
W.A. 1463 Project Fund	799.8	448 2/	450
W.A. 1434 Project Fund	0	33.5 3/	
Total General Fund	0	0	77.1
Total Project Fund	1,050.8	787.5	648.6
TOTAL	1,050.8	787.5	725.7
Man Years	21.9	25.2	24.6

1/ Augmentation of approved manpower required in 1975-76.
2/ Budget augmentation required in 1975-76 for EIR and Sacramento-San Joaquin Delta Technical Data Bulletin.
3/ Funds transferred from W.A. 1424 into new W.A. 1434 to provide for monitoring water quality in the southern Delta.

DELTA FACILITIES -- PLANNING AND EVALUATION
W.A. 1464, CENTRAL DISTRICT
SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Years 1975-76 1976-77	M.Y.	Fund	Central District Project Funds ($1,000s)	Totals
Expenditures for 1975-76				
Peripheral Canal Planning	6.8	P	246.3	246.3
Coordination and Special Assignments	2.0	P	59.2	59.2
Totals 1975-76 Project Funds	8.8	P	305.5	305.5
Expenditures for 1976-77				
Peripheral Canal Planning	4.4	P	138.5	138.5
Coordination and Special Assignments	2.0	P	60.1	60.1
Peripheral Canal Recreation Development Plans & Wildlife Management Plan Studies	2.8	G	77.1	77.1
Total 1976-77 Project Funds	6.4	P	198.6	198.6
Total 1976-77 General Funds	2.8	G	77.1	77.1
TOTAL 1976-77	9.2		275.7	275.7

DELTA FACILITIES -- PLANNING AND EVALUATION
W.A. 1463, CENTRAL DISTRICT
SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Years 1975-76 1976-77	M.Y.	Fund	Central District Project Funds ($1,000s)	Totals
Expenditures for 1975-76				
Bay-Delta Water Management Studies	11.8	P	342	342
Soil Salinity Monitoring Study	1.8	P	53	53
Channel Scour Monitoring Study	1.8	P	53	53
TOTAL	15.4		448	448
Expenditures for 1976-77				
Bay-Delta Water Management Studies	11.8	P	344	344
Soil Salinity Monitoring Study	1.8	P	53	53
Channel Scour Monitoring Study	1.8	P	53	53
TOTAL	15.4		450	450

DELTA MONITORING
W.A. 1434, CENTRAL DISTRICT
SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Years 1975-76 1976-77	M.Y.	Fund	Central District Project Funds ($1,000s)	Totals
Expenditures for 1975-76				
Delta Water Quality Monitoring	1.0	P	33.5	33.5
TOTAL	1.0		33.5	33.5

Expenditures for 1976-77

Program to be transferred to W.A. 7419

V. B. McIntyre
6/23/75

SAN JOAQUIN DRAINAGE FACILITIES IMPLEMENTATION STUDY

PROGRAM COMPONENT STATEMENT

SYNOPSIS

This study was started in June 1974 in order that local activities could be incorporated into the Department's agricultural waste water studies.

San Joaquin Valley agricultural interests are constructing or planning to construct local agricultural waste water collection facilities. These facilities will suffice as an interim solution, but an effective waste water management program for the basin must be developed and implemented.

The ultimate need for agricultural drainage facilities to serve the San Joaquin Valley has been recognized by both the State Legislature and the Congress of the United States in appropriate authorizing legislation (San Joaquin Master Drain and San Luis Drain). Since many local agencies are involved in solving their own drainage problems, the Department must provide guidance to these agencies in anticipation of the construction of a master drainage system for the Valley.

OUTPUT SCHEDULE

Annual memorandum and district reports will summarize activities. Specific completion dates will be developed as critical components are identified.

OBJECTIVE

To develop information on local agency activities and plans associated with agricultural waste water systems as input to projections of future quantities and qualities of waste water, and to develop facilities for reuse, treatment, and final disposal of residual wastes. To determine what combination of solutions will be most effective.

To develop methods of financing and means of operation for a master drainage system, and to examine associated legal problems.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

1. Analyze and evaluate information, findings, and recommendations from the San Joaquin Valley Drainage Monitoring Investigation to present department policies. ($12,000)

2. Coordinate and cooperate with other district programs and/or department programs that have related activities. ($1,000)

3. Identify existing and planned agricultural waste water collection systems in the Valley. ($14,300)

4. Cooperate and coordinate with local agencies in activities that lead to reuse and disposal of residual wastes from various systems. ($16,000)

Environmental Considerations

This program component and the activities conducted under the component are considered to be in the category of "feasibility and planning studies" and therefore do not require an environmental impact report.

(Section 544 (b) of the DWR Regulations). In accordance with the provisions of the Environmental Quality Act of 1970, Section 21102, the activities conducted as part of this program component shall include consideration of environmental factors.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

1. Analyze and evaluate information, findings, and recommendations from other department programs and coordinate the related activities. ($22,500)

2. Identify existing and planned agricultural waste water collection systems in the Valley and identify possibilities for the reuse and disposal of these waters. ($46,800)

3. Investigate sites that could be used for evaporation ponds and/or salt sinks. ($37,000)

4. Cooperate and coordinate with local agencies in activities that lead to reuse and disposal of residual wastes from various systems. ($30,000)

5. Determine most effective combination of reuse treatment and disposal for agricultural waste water management system. ($28,000)

6. Study methods and systems required for ultimate disposal of waste waters, methods for financing a drainage system, and methods of operation. Analyze legal problems. ($24,000)

Environmental Considerations

This program component and the activities conducted under the component are considered to be in the category of "feasibility and planning studies" and therefore do not require an environmental impact report.

(Section 544 (b) of the DWR Regulations). In accordance with the provisions of the Environmental Quality Act of 1970, Section 21102, the activities conducted as part of this program component shall include consideration of environmental factors.

INPUT

	1974-75		1975-76		1976-77	
	M.Y.	$	M.Y.	$	M.Y.	$
Project Fund	1.3	40.0	1.3	43.3	6.2	188.3
TOTAL	1.3	40.0	1.3	43.3	6.2	188.3

SAN JOAQUIN DRAINAGE FACILITIES IMPLEMENTATION STUDY
(Work Authority 1255, San Joaquin District)

SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Year Major Activity and/or Study	M.Y.	Fund	($1,000s) Organization and Source of Funding DRD	ND	CD	SJD	SD	Totals	Coop. Services
Expenditures for 1975-76									
Item No. 1	0.2	P				12.0		12.0	
Item No. 2	0.1	P				1.0		1.0	
Item No. 3	0.4	P				14.3		14.3	
Item No. 4	0.6	P				16.0		16.0	
TOTALS 1975-76	1.3	P				43.3		43.3	
Expenditures for 1976-77									
Item No. 1	0.6	P				22.5		22.5	
Item No. 2	1.9	P				46.8		46.8	
Item No. 3	1.8	P				37.0		37.0	
Item No. 4	0.1	P				30.0		30.0	
Item No. 5	1.0	P				28.0		28.0	
Item No. 6	0.8	P				24.0		24.0	
TOTALS 1976-77	6.2	P				188.3		188.3	

Robert F. Fingado
June 26, 1975

PERIPHERAL CANAL GROUND WATER MONITORING
1976 PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

This program was initiated in August 1966. Installation of monitoring equipment was spread over a 3-year period; consequently, monitoring of the full data collection network began in 1969 and continued until July 1971. Beginning at that time and continuing through December 1972, the program was conducted at a reduced level due to a 4-year delay in canal implementation announced in March 1971. During that period, the full scope of monitoring was confined essentially to the area between Lambert Road and Disappointment Slough. This area could be affected by Interstate 5 - Peripheral Canal borrow operations which had been expected to begin in 1973, and monitoring was conducted to establish preconstruction conditions in the borrow reach.

During 1973 and early 1974, monitoring was reinitiated, by steps, to full scope along the entire length of the Canal. This was done to provide 2 years of up-to-date ground water level information for the canal construction specifications, which were scheduled to be issued beginning in July 1975.

In early 1975, dewatering of the first Interstate 5 - Peripheral Canal borrow site lowered the ground water levels below the adjacent ground water monitoring wells. Consequently, 24 wells about 30 feet deep were installed near the borrow site for the purpose of monitoring the deeper ground water levels -- 21 of these wells were at existing sites and 3 at new sites.

Additionally, 28 new wells were installed at that time along the portions of the Canal alignment which have been changed since the original wells were installed. Finally, the Division of Design and Construction in January 1975, requested that the program be augmented to obtain ground water quality information needed for Canal design, permit, and construction purposes at approximately 135 locations along the Canal alignment. Some 38 new wells also were added to the monitoring network for this purpose.

Need

The Peripheral Canal will occupy an area of about 6,600 acres, most of which is now devoted to agriculture. Data along the canal alignment including near-surface ground water levels and agricultural conditions, is required for planning, design, construction, and operation of the Canal; and to support

defense occasioned by possible future litigation. During operation, water levels in the unlined, 400 to 500-foot wide canal will be up to 20 feet above land surface, whereas dewatering during preconstruction borrow operations may lower near-surface ground water levels as much as 20 feet. These water level differences can affect agricultural conditions in the vicinity of the Canal.

The data which is obtained in the program is described in detail in the "First Annual Report on Ground Water and Agricultural Data Monitoring along Peripheral Canal, 1966-1970", dated June 1971, and in subsequent annual reports.

OUTPUT SCHEDULE

The program will continue until the effect of canal operations on agriculture and near-surface ground water levels can be evaluated. An annual report describing data collected in the previous calendar year is published about June of each year.

OBJECTIVE

To obtain and record sufficient information on agricultural conditions and near-surface ground water levels along the Canal before, during, and after construction to support planning, design, construction, operation, and defense occasioned by possible litigation.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

Monitoring of ground water and agricultural conditions will be continued along the entire length of the Canal. A memorandum report describing the data obtained during 1975 will be published during June 1976.

Near Surface Ground Water Levels & Drainage Ditch Water Levels --

$52,000

Monthly ground water level measurements will be taken at about 440 sites, semiannual measurements at 18 sites, and continuous records at 41 sites. Drainage ditch water levels will be monitored monthly at 18 sites. Also, elevations will be established at approximately 360 ground water level observation wells.

Agricultural Conditions -- $29,779

The following work activities will be conducted to monitor agricultural conditions along the Canal: (1) power consumption records will be obtained for approximately 100 drainage pumps to provide information for determining the quantity of pumping needed to maintain water table conditions required for agricultural production, (2) infrared aerial photographs will be taken immediately following flood periods to provide information for determining high water table and seepage areas, (3) leach water areas will be mapped to provide data for determining the quantity of water required to leach

salts from the crop root zones, (4) surveys will be made to determine land use in the study area, and (5) information on agricultural practices will be obtained to provide the continuing and viable knowledge required to evaluate changes occuring in the other parameters being monitored.

Work in Addition to Governor's Budget

Additional funds will be requested to monitor ground water levels and ground water quality including the quality of water being discharged into the Delta sloughs due to dewatering of the Interstate 5 - Peripheral Canal borrow areas as described earlier in the program history. Also, additional funds will be requested to establish elevations at the 69 now monitoring installations which were installed in mid 1975. This will complete the program of establishing elevations for all the wells in the monitoring network.

Environmental Considerations

This entire program is an information collection program and as such is exempt from preparation of environmental documents under Section 547, class 6 of the Department of Water Resources Regulations for Implementation of the California Environmental Quality Act of 1970.

WORK PROGRAM FOR BUDGET YEAR 1976-77

Monitoring of ground water and agricultural conditions will be continued along the entire length of the Canal. A memorandum report describing the data obtained during 1976 will be published during June 1977.

Near Surface Ground Water Levels and Drainage Ditch Water Levels -- $61,300

Monthly ground water level measurements will be taken at about 510 sites, semiannual measurements at 18 sites, and continuous records at 41 sites. Drainage ditch water levels will be obtained monthly at 18 sites.

Agricultural Conditions -- $31,700

The following work activities will be conducted to monitor agricultural conditions along the Canal: (1) power consumption records will be obtained for approximately 100 drainage pumps to provide information for determining the quantity of pumping needed to maintain water table conditions required for agricultural production, (2) infrared aerial photographs will be taken immediately following flood periods to provide information for determining high water table and seepage areas, (3) leach water areas will be mapped to provide data for determining the quantity of water required to leach salts from the crop root zones.

(4) Surveys will be made to determine land use in the study area, (5) information on agricultural practices will be obtained to provide the continuing and viable knowledge required to evaluate changes occuring in the other parameters being monitored, and (6) ground water quality will be collected semiannually at about 135 sites to determine the quality of shallow ground water along the canal alignment. Also, the quality of water discharged into the Delta sloughs due to dewatering at the Interstate 5 - Peripheral Canal borrow sites will be monitored monthly.

Environmental Considerations

This entire program is an information collection program and as such is exempt from preparation of environmental documents under Section 547, class 6 of the Department of Water Resources Regulations for Implementation of the California Environmental Quality Act of 1970.

INPUT

	1974-75	1975-76	1976-77
Project Funds	$ 63,677 1/	$ 81,800 2/	$ 93,000
Personnel Man-Years	2.8	3.2	3.7

1/ Augmented during 1974-75 to $72,900.

2/ Augmentation will be requested for previously described "Work in Addition to Governor's Budget".

PERIPHERAL CANAL GROUND WATER MONITORING PROGRAM
(Work Authority 1423, Central District)

SUPPLEMENT TO COMPONENT STATEMENT

Expenditures for 1975-76 ($1,000)	M.Y.	Project Funds
Work Activities		
Program Management	.16	3.4
Program Evaluation	.19	6.1
Annual Memorandum Report	.10	3.2
Ground Water Measurements	2.06	41.2
Leach Water Surveys	.15	3.1
Infrared Aerial Photos	.01	1.4
Land Use Survey	.37	9.8
Power Consumption Records	.12	2.7
Agricultural Practices	.04	1.1
Ground Water Well Elevation Survey	---	9.8 1/
TOTALS	3.20	81.8 1/

Expenditures for 1976-77 ($1,000)	M.Y.	Project Funds
Work Activities		
Program Management	.17	3.4
Program Evaluation	.21	6.7
Annual Memorandum Report	.11	3.6
Ground Water Measurements	2.36	54.4
Leach Water Surveys	.16	3.4
Infrared Aerial Photos	.01	1.5
Land Use Survey	.42	11.7
Power Consumption Records	.09	2.3
Agricultural Practices	.04	1.3
Ground Water Quality	.13	4.7
TOTALS	3.70	93.0

1/ Augmentation will be requested for previously described "Work in Addition to Governor's Budget".

Frank S. Cotton
June 27, 1975

MID-VALLEY CANAL

SYNOPSIS

History

Funds were made available for this planned three-year program on July 1, 1972. Work on the program started on August 1, 1972, when the Program Manager was designated. The program studies will evaluate the feasibility of constructing a canal across the San Joaquin Valley to serve federal water to water users on the east side of the Valley using combinations of existing state and federal facilities.

The scope of the studies was revised significantly in March 1973, when the Department and the U. S. Bureau of Reclamation informally agreed to participate in a joint study of alternative projects involving the construction of a mid-valley canal across the Valley. Agreements were reached on the scope of studies by the Bureau and the Department.

The allocation of Mid-Valley Canal water will consider the fact that Kern County Water Agency begins water deliveries through its Cross Valley Canal in early 1976. The Agency's canal will serve, by exchange arrangements, several agencies which are also in the potential service area of the Mid-Valley Canal.

In May 1975 the Bureau was informed that the Mid-Valley Canal studies must employ the Multiobjective Planning (MOP) procedure. This procedure will delay the scheduled joint reports by six months or more and require additional funds for the program.

In June 1975 the Department notified the Bureau that it would continue active participation in the joint studies, but certain problem areas had to be resolved before the Department could endorse or coauthor reports in support of the Mid-Valley Canal project. The project must fit realistically into statewide water objectives and be a carefully considered and integral part of the Department's "25-year plan". Resolving these factors will also delay the joint reports and require additional funds for the program.

Need

The Mid-Valley Canal is needed to supply additional water to alleviate critical water deficiencies -- as evidenced by severe ground water overdraft and increasing land subsidence -- on the east side of the San Joaquin Valley. It may be possible to use such a canal for exchanges between the Central Valley Project and the State Water Project to provide greater flexibility in the operations of the two projects. By exchange or additional facilities, the canal may also be used to alleviate the State's shortage of 1,000 cfs of capacity in the San Luis Division of the California Aqueduct. Additionally, the canal may be a means to provide municipal and industrial water including possible supplies for power plant cooling.

OUTPUT

The informal joint study began in March 1973 and is tentatively scheduled to conclude by June 30, 1977. The results and findings will be presented in

a feasibility-level project report prepared jointly by the Bureau and the Department. The report will be structured primarily as a Bureau report so that it will meet federal requirements and be suitable for further processing for congressional authorization. Also, a draft Environmental Impact Statement and Report (EIS-EIR -- a single document written to meet federal and state requirements) will be prepared. In-house drafts of the joint feasibility report and draft EIS-EIR are scheduled by June 30, 1976, and the final reports by September 1, 1977.

This schedule extends the life of the program beyond the three-year period which was originally envisioned. The Department will complete a final report by December 31, 1976 which will include recommendations regarding a mid-valley canal project.

OBJECTIVE

The federal "Principles and Standards for Planning Water and Related Land Resources" established two objectives directed to improvement in the quality of life through contributions to national economic development (NED) and environmental quality (EQ). Alternative plans for the Mid-Valley Canal will be formulated to accomplish these objectives.

Consideration of the following items, of major importance to the Department, will be included in the formulation of alternative Mid-Valley Canal plans:

1. Alleviate critical water deficiencies on the east side of the San Joaquin Valley.

2. Overcome the State's shortage of 1,000 cfs of capacity in the San Luis Division of the California Aqueduct.

3. Intertie the State Water Project with the Central Valley Project Millerton Lake System (include the Friant-Kern Canal).

4. Give consideration to the provision of municipal and industrial water including possible supplies for power plant cooling.

5. Give consideration to the potential for ground water recharge in the project area.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

Work will continue on the joint study with the Bureau. Concentrated effort will be directed toward solution of problem areas presently blocking Department co-authorship of reports and support of the Mid-Valley Canal project. Efforts will continue to fit the project into the Department's 25-year plan. The formulation of alternative plans under the MOP procedure will continue. Specific work activities include the following: Evaluate the economic, environmental, and social factors of alternative plans. Conduct joint hydrology studies and operation studies with the Bureau to determine the yield of the project with and without storage. In coordination with local interests, evaluate potential ground water recharge areas. Based on current data from local interests, determine existing

and near-future water conditions and the urgency of need for additional supplies. Evaluate the fishery and recreation potentials of alternative projects. Give consideration to the environmental factors involved in the alternative projects. Prepare cost estimates of alternative projects. Participate in public meetings scheduled as needed. Coordinate studies with public agencies which are potential contractors for water from the project. Complete in-house drafts of the joint feasibility report and draft EIS-EIR by June 30, 1976 ($37,000).

WORK PROGRAM FOR BUDGET YEAR (1976-77)

Complete a final Department report by December 31, 1976. The final report would summarize and respond to the comments which had been received through the consultation process regarding the draft Environmental Impact Statement and Report. The report would include recommendations regarding a mid-valley canal project. These recommendations would give due consideration to the actions and reactions regarding the reports from the joint study with the Bureau, and also to additional work done by the Department regarding means to overcome its capacity shortage in the California Aqueduct ($24,000).

INPUT

	1974-75	1975-76	1976-77
Project Funds	$71,000	$37,403	$24,000
Man-Years	2.3	1.0	0.6

WATER FOR POWER
PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

This current program on water for power was initiated in 1973. Since its inception there have been major changes in the outlook for electrical energy, and further considerations should be given to the role of water in hydroelectric production.

The Water Code assigns responsibility for planning and development of hydroelectric energy to the Department. Until the Department undertook hydrodevelopment as a purpose of the State Water Project, its involvement was primarily in multipurpose planning for water supply, including power development. The activities are described in various reports on the California Water Plan, local projects, and specific features of the State Water Project.

In March 1974 the Department published Bulletin No. 194, "Hydroelectric Potential in California". This report summarized the results of previous studies of hydroelectric projects, most of which were not financially feasible due to lower cost thermal electric alternatives. The remaining hydroelectric potential is nearly equal to the amount already developed in California. Of this potential about one-third may be developable within the next 15 years since the costs of thermal electric alternatives have risen so sharply in the recent past.

Need

The restrictions on the availability of fossil fuel for power production, air pollution problems from the use of fossil fuel, and the siting requirements for nuclear power plants have made it increasingly difficult for the electrical utilities in California to meet future requirements. Energy shortages, increased costs of fuel, and the ability of pumped storage projects to provide a means of storing generating potential, make desirable continuing investigations of the hydroelectric potential, including pumped storage projects. Additional sources of energy will be needed for the State Water Project after 1983. In addition to potential new projects, consideration must be given to the addition of generating facilities at existing storage projects as well as modifications to current project operation practices. Other water uses and development impacts, particularly for fisheries, wildlife, and natural environmental qualities, must be evaluated.

OUTPUT SCHEDULE

Item	Date
Memorandum reports on selected projects	3 to 5 by June 1976
Bulletin on hydroelectric potential	June 1976
Feasibility reports on selected projects	1 to 4 by June 1977

OBJECTIVE

The objective of this program is to assure prudent use of water resources for hydroelectric production, including (a) development of California's remaining hydroelectric potential by private, local, and federal agencies and for the State Water Project; and (b) increased energy production through modifications in water management practices.

WORK PROGRAM FOR CURRENT YEAR 1975-76

The program will involve a series of consecutive studies of the most favorable projects (new facilities and modified water management) of those listed in Bulletin No. 194, "Hydroelectric Potential in California", to identify those feasible of undertaking in the near future. Reconnaissance studies will be made of "unsponsored" projects, including those other agencies may have previously contemplated but do not currently plan to pursue or may wish to jointly with the Department. These reconnaissance studies will include an assessment of all environmental impacts. Those projects which are found economically justified and financially feasible on the basis of reconnaissance studies will be given further "feasibility level" study to determine whether they are feasible for state construction. Environmental impact reports will be prepared for any projects recommended for construction.

Opportunities for development of pumped storage projects which were not fully reviewed for Bulletin No. 194, will be reviewed. Appraisal, reconnaissance, and feasibility studies similar to those described in the preceding paragraph will be undertaken. During 1975-76, reconnaissance studies will be completed, and memorandum reports will be prepared. A bulletin will be prepared, summarizing the results of the reconnaissance studies; and follow-on action will be recommended.

Environmental Considerations

This program is a "feasibility and planning" study and does not require an environmental impact report in accordance with Section 544 of the Department Environmental Regulations. Section 21102 of CEQA requires that this program include consideration of environmental factors.

WORK PROGRAM FOR BUDGET YEAR 1976-77

Reconnaissance studies completed in the current year will serve as a base for studies during fiscal year 1976-77. Analyses will be made of the feasibility of early construction of the best of the identified projects to help meet California's energy needs in the early 1980's. These projects could serve as power and energy sources in critical areas or during critical periods and might fill the gap until more general solutions are developed. In recognition of what may be a developing emergency situation, there may be justification for state construction or financial assistance for projects which are infeasible for development by local agencies. Feasibility reports will be prepared as the projects are developed.

INPUT

	1974-75		1975-76		1976-77	
	M.Y.	$	M.Y.	$	M.Y.	$
General Fund-Support	1.7	55,000	1.8	68,000	1.8	68,000
Project Fund	2.6	81,000	1.8	68,000	1.8	68,000
Total	4.3	136,000	3.6	136,000	3.6	136,000

WATER FOR POWER
(Work Authority 1530, Division of Planning)

SUPPLEMENT TO COMPONENT STATEMENT

FISCAL YEAR Major Activity and/or Study	M.Y.	Fund	($1,000) Organization and Source of Funding DP	ND	CD	SJD	SD	PO	Total
EXPENDITURES FOR 1975-76									
Water for Power	1.8	G	18	10	11	10	11	8	68
	1.8	P	19	11	10	11	10	7	68
Totals 1975-76	3.6		37	21	21	21	21	15	136
EXPENDITURES FOR 1976-77									
Water for Power	1.8	G	12	12	12	12	12	8	68
	1.8	P	13	12	12	12	12	7	68
	3.6		25	24	24	24	24	15	136

V. B. McIntyre
6/23/75

SAN JOAQUIN VALLEY DRAINAGE MONITORING

PROGRAM COMPONENT STATEMENT

SYNOPSIS

Collection of quality and quantity data on subsurface agricultural drainage was initiated in September 1963 as a part of the San Joaquin Valley Drainage Investigation. In 1969 the program was reduced to the collection of samples from 39 selected sampling points. At that time the program also became a cooperative effort of the Department and the U. S. Bureau of Reclamation. The 10 stations between Byron and Gustine are sampled by USBR and the remaining 29 stations are sampled by the Department. In 1969 the cooperative monitoring activities of the Department and USBR in the western Sacramento-San Joaquin Delta were made a function of this program.

The ultimate need for agricultural drainage facilities to serve the San Joaquin Valley has been recognized by both the State Legislature and the Congress of the United States in appropriate authorizing legislation. The design and effectiveness of a valley drainage facility will depend on the accuracy of predictions of the quality of agricultural waste water to be disposed. Reliable projections of mineral, trace elements, nutrient, and pesticide concentrations will be required for selection of the final discharge point, reuse, and/or treatment facilities and for the precise evaluation of potential pollution effects on receiving waters.

OUTPUT SCHEDULE

A memorandum report to summarize data collected during 1975 will be completed in June 1976, and a memorandum report to summarize data collected during 1976 will be completed in June 1977.

OBJECTIVE

To collect the data on agricultural waste water and make it available to other Department of Water Resources Programs and to other Agencies.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

This component is a cooperative activity between the U. S. Bureau of Reclamation and the Department of Water Resources. Program activities taking place north of Patterson will be conducted by the Bureau and activities taking place south of Patterson will be conducted by the Department. The component also includes assisting the Bureau in surveillance activities in the western Sacramento-San Joaquin Delta and Suisun Bay. We also collect samples for the Environmental Protection Agency for that agency to analyze for trace organic compounds.

Sacramento-San Joaquin Delta Activities

1. Collect, analyze, and interpret chemical, physical, and biological data. ($33,460)

San Joaquin Valley Activities

1. Measure quantities of flow from subsurface drains and collect samples for lab determinations. ($23,568)

2. Make monthly determinations of mineral, nutrient, and pesticide concentrations. ($21,000)

3. Machine processing of data. ($1,502)

4. Data collected will be evaluated to identify trends and to revise previous projections. The data will be published in a memorandum report. ($21,000)

Environmental Considerations

The basic activity of this program is data collection, and therefore it is categorically exempt under Class 6 (Section 547).

WORK PROGRAM FOR BUDGET YEAR (1976-77)

This component is a cooperative activity between the U. S. Bureau of Reclamation and the Department of Water Resources. Program activities taking place north of Patterson will be conducted by the Bureau and activities taking place south of Patterson will be conducted by the Department. We will collect samples for the Environmental Protection Agency for that agency to analyze for trace organic compounds.

San Joaquin Valley Activities

1. Measure quantities of flow from subsurface drains and collect samples for lab determinations. ($45,000)

2. Make monthly determinations of mineral, nutrient, and pesticide concentrations. ($30,000)

3. Machine processing of data. ($6,000)

4. Data collected will be evaluated to identify trends and to revise previous projections. The data will be published in a memorandum report. ($57,300)

Environmental Considerations

The basic activity of this program is data collection, and therefore it is categorically exempt under Class 6 (Section 547).

INPUT

	1974-75		1975-76		1976-77	
	M.Y.	$	M.Y.	$	M.Y.	$
Project Fund	3.2	140.9	3.9	100.5	4.1	138.3
TOTAL	3.2	140.9	3.9	100.5	4.1	138.3

SAN JOAQUIN VALLEY DRAINAGE MONITORING
(Work Authority 1424, San Joaquin District)

SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Year Major Activity and/or Study	M.Y.		($1,000s) Organization and Source of Funding						Coop. Services
			DRD	ND	CD	SJD	SD	Totals	
Expenditures for 1975-76									
Sacramento-San Joaquin Delta Activities	1.7	P			33.4			33.4	
San Joaquin Valley Activities									
Item No. 1	1.2	P				23.6		23.6	
Item No. 2		P				21.0		21.0	
Item No. 3		P				1.5		1.5	
Item No. 4	1.0	P				21.0		21.0	
TOTALS 1975-76	3.9	P			33.4	67.1		100.5	
Expenditures for 1976-77									
San Joaquin Valley Activities									
Item No. 1	2.0	P				45.0		45.0	
Item No. 2		P				30.0		30.0	
Item No. 3		P				6.0		6.0	
Item No. 4	2.1	P				57.3		57.3	
TOTALS 1976-77	4.1	P				138.3		138.3	

Richard Kretsinger
Eugene Serr
Walter Terry
Sam Stringfield
Malcolm Ker

6/27/75

STATE FINANCIAL ASSISTANCE FOR LOCAL PROJECTS (DAVIS-GRUNSKY PROGRAM)

PROGRAM COMPONENT STATEMENT

SYNOPSIS

From September 18, 1959 through December 31, 1974, the Department received 214 requests for preliminary determination of eligibility for assistance under the Davis-Grunsky Act.

The Department and the California Water Commission have approved construction loans to 40 local agencies for 45 projects. Also, 10 feasibility loans to 9 agencies have been approved. These loans total $35,180,988. Additionally, the Department and Commission have approved recreation grants to 27 local agencies for 32 projects amounting to $59,689,655. Reports of findings on all formal loan and grant applications were prepared and submitted to the Legislature.

A total of $85,163,522 was disbursed by December 31, 1974, to the agencies previously mentioned.

The Legislature, from time to time since 1959, has amended the Act to improve its workability. The Department and the Water Commission have adopted policies and procedures to administer the program.

OUTPUT SCHEDULE

The work associated with making loans and grants will be completed when the $130 million available has been disbursed. Activities associated with administration of completed projects will continue for the life of the contracts (up to 60 years). Prepare an annual report to be submitted to the Legislature in January each year.

OBJECTIVE

To further the development of needed and economically justified local water projects, particularly those which are necessary to alleviate a public health or safety problem, and to encourage development of public recreation and fish and wildlife enhancement potential at local projects.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

The Department will continue to receive and process preliminary and formal applications for assistance, negotiate contracts with

applicants for approved loans and grants, review construction plans, inspect construction of approved projects, and administer loan and grant contracts.

Specifically, during fiscal year 1975-76, the Department anticipates processing 10 preliminary determinations of eligibility; 12 formal applications for loans or grants; preparing and negotiating 6 contracts setting forth the terms and conditions of the loans and grants; reviewing construction plans; processing claims for funds and performing inspections during project construction in connection with 10 projects; and administering executed contracts and performing audits and annual inspections of 67 completed projects.

Additionally, the Department will: conduct formal and informal meetings with various local agencies to provide information regarding financial assistance under the Davis-Grunsky Act, draft procedures and administrative policy statements, prepare an annual report to the Legislature, and carry on such other activities as may be necessary to monitor the program.

Environmental Considerations

An EIR is prepared before a local agency's formal application for financial assistance under the Act is approved. Therefore, the activities under the program component are exempt under provisions of Section 544 of the "Orders Adopting Regulations of the Department of Water Resources".

Each formal application submitted for a Davis-Grunsky Act loan or grant will require environmental evaluation. Applicants will be both the Local Agency and the Responsible Agency. The Department will consult with each applicant during preparation of the Initial Study and, if necessary, the EIR and/or EIS. Final EIRs, when necessary, will be a part of the applicants' feasibility report.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

The Department will continue to receive and process preliminary and formal applications for assistance, negotiate contracts with applicants for approved loans and grants, review construction plans, inspect construction of approved projects, and administer loan and grant contracts.

Specifically, during the fiscal year 1976-77, the Department anticipates processing 10 preliminary determinations of eligibility; 10 formal applications for loans or grants; preparing and negotiating 7 contracts setting forth the terms and conditions of the loans and grants; reviewing construction plans; processing claims for funds; performing inspections during project construction in connection with 11 projects; and administering executed contracts and performing audits and annual inspections of 74 completed projects.

Additionally, the Department will: conduct formal and informal meetings with various local agencies to provide information regarding financial assistance under the Davis-Grunsky Act, draft procedures and administrative policy statements, prepare an annual report to the Legislature, and carry on such other activities as may be necessary to monitor the program.

Environmental Considerations

Same as for 1975-76

INPUT

	($1,000s) 1974-75	1975-76	1976-77
Project Fund			
Administration	495	432	432
Capital Outlay	4,101	8,870	7,000
Personnel Man-years	14.5	13.0	13.0

Richard Kretsinger
Eugene Serr
Walter Terry
Sam Stringfield
Malcolm Ker

STATE FINANCIAL ASSISTANCE FOR LOCAL PROJECTS (DAVIS-GRUNSKY PROGRAM)

Work Authority 1351
Division of Planning, Northern District,
Central District, San Joaquin District, Southern District

SUPPLEMENT TO COMPONENT STATEMENT

Expenditures for 1975-76	M.Y.	Project Funds ($1,000)
Organizational		
Division of Planning	2.8	108
Northern District	3.6	108
Central District	3.3	94
San Joaquin District	1.6	64
Southern District	1.7	58
TOTALS	13.0	$ 432

Expenditures for 1976-77	M.Y.	Project Funds ($1,000)
Organizational		
Division of Planning	2.8	108
Northern District	3.6	108
Central District	3.3	94
San Joaquin District	1.6	64
Southern District	1.7	58
TOTALS	13.0	432

L. Swenson
June 27, 1975

WATER CONTRACTS NEGOTIATION AND ADMINISTRATION
PROGRAM COMPONENT STATEMENT

SYNOPSIS

Work on this program began in 1960 with negotiation and execution of the "prototype" water supply contract between the State and the Metropolitan Water District of Southern California. Since that time, an additional 30 water supply contracts have been executed committing the delivery of the full minimum project yield of 4,230,000 acre-feet.

There have been no significant changes in the program activities during last three years.

The provisions of the 31 contracts the State, through the Department, has executed with local agencies for water supplies from the State Water Project must be administered in an orderly manner: (a) to enable the agencies to receive maximum water supply benefits, within the service limitations of the contracts, at the least possible costs; and to ensure that the Department receives all payments due under the contracts from the agencies on a timely basis. Infrequently, the contracts must be amended to facilitate their administration and to accommodate changing needs of the agencies. Also, supplemental agreements are required to meet unique needs of certain agencies. In addition contracts have been prepared for use of aqueduct facilities for purposes other than water service to the 31 long-term contractors.

OUTPUT

Coordinate issuance of approved monthly water delivery schedules. (Entitlement delivery schedules to be issued by December 1 and surplus water delivery schedules by May 1 of each year.) Coordinate review of requested changes to approved shcedules and issue approved schedule changes prior to the end of each month.

Porvide liaison with contractors and work with them in the negotiation and execution of basic contract amendments, auxiliary agreements and surplus water contracts when required. Keep them fully informed on contract administration policies and procedures which affect them. Negotiate contracts for use of project facilities or short-term water supply for other than long-term contractors. Monitor activities involving compliance with contract provisions by both the State and Contractors and take necessary steps to obtain compliance when required.

Document approved administration procedures in the Water Supply Contract Manual and maintain Manual in a current status.

OBJECTIVE

To develop, implement, and maintain equitable and workable administrative procedures based on the general contract provisions. Maintain close working relationship with contractors in order to better accommodate changing service needs and to facilitate compliance with contractual obligations.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

1. Corrdinate and participate in negotiation of (a) interim and long-term surplus water contracts, (b) water supply contract amendments, (c) contract-related agreements and permits. Prepare comments and replies to correspondence. concerning project water service. $70,000

2. Monitor compliance and initiate corrective action for the uniform and timely compliance with contract requirements by both the State and the contracting agencies. Report periodically to management and the contractors, the status of water supply contract negotiation and administration activities. $75,000

3. Provide liaison with the water supply contractors. $50,000

4. Review policies, procedures, and directives concerning administration of the water supply contracts and related agreements. Prepare, maintain, and distribute the Water Supply Contract Manual. $40,000

5. Administer the 31 long-term water supply contracts. Classify project water deliveries and maintain delivery records. $21,000

6. Coordinate determination and approval of all monthly project water delivery schedules. $85,000

7. Negotiate contracts for use of project facilities or short-term water supply for other than long-term contractors. $45,000

Environmental Considerations

Administration activities under this program have no effect on environment and as such do not, pursuant to Section 544 of Department Regulations, come under provision of the California Environmental Quality Act.

Program activities include the negotiation of auxiliary agreements providing for construction and operation of certain turnout and conveyance facilities on project right of way by water supply contractors. Such construction is exempt from the provisions of the act pursuant to Class 11 of the Categorical Exemptions listed in the State Guidelines.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

1. Coordinate and participate in negotiation of (a) interim and long-term surplus water contracts, (b) water supply contract amendments, (c) contract-related agreements and permits. Prepare comments and replies to correspondence concerning project water service. $70,000

2. Monitor compliance and initiate corrective action for the uniform and timely compliance with contract requirements by both the State and the contracting agencies. Report periodically to management and the contractors, the status of water supply contract negotiation and administration activities. $75,000

3. Provide liaison with the water supply contractors. $50,000

4. Review policies, procedures, and directives concerning administration of the water supply contracts and related agreements. Prepare, maintain, and distribute the Water Supply Contract Manual. $40,000

5. Administer the 31 long-term water supply contracts. Classify project water deliveries and maintain delivery records. $21,000

6. Coordinate determination and approval of all monthly project water delivery schedules. $85,000

7. Negotiate contracts for use of project facilities or short-term water supply for other than long-term contractors. $45,000

Environmental Considerations

Administration activities under this program have no effect on environment and as such do not pursuant to Section 544 of Department Regulations, come under provision of the California Environmental Quality Act.

Program activities include the negotiation of auxiliary agreements providing for construction and operation of certain turnout and conveyance facilities on project right of way by water supply contractors. Such construction is exempt from the provisions of the act pursuant to Class 11 of the Categorical Exemptions listed in the State Guidelines.

INPUT

	1974-75	1975-76	1976-77
Project Funds	$410,279	$385,973	$386,000
Man-Years	13.1	13.1	13.1

L. Swenson
June 27, 1975

PROJECT REPAYMENT AND FINANCIAL ANALYSIS
PROGRAM COMPONENT STATEMENT

SYNOPSIS

Work on this program began in 1958, preceding the formulation of the Burns-Porter Act. Publication of the comprehensive annual Bulletin reports to the Legislature on project costs allocated to recreation and fish and wildlife enhancement were initiated in 1967.

The long-term contracts which the State, through the Department, has executed with 31 local agencies for a water supply from the State Water Project require annual redetermination of the charges assessed each agency, including the allocation of project costs among reimbursable and nonreimbursable purposes and the allocation of reimbursable costs among agencies. In addition, the contracts provide for an annual redetermination of all projected charges to the agencies. This information is presented to the agencies in the Department's Bulletin No. 132 series.

California Water Code Section 11912 requires the Department to report annually, to the Legislature, the costs of the State Water Project which it has allocated to recreation and fish and wildlife enhancement. This report is published as Appendix D of the Bulletin No. 132 series.

The program coordinates preparation of the above comprehensive series of annual reports, as well as the numerous contractor-oriented analyses concerning project financing and repayment. The program also develops payment information for uses other than service to the 31 long-term contractors.

OUTPUT

Data in support of the charges to be assessed the agencies during the following calendar year must be transmitted by July 1.

Reports to be published during 1975-76 and 1976-77 include:

Report	Due Date
Bulletin No. 132-76 "The California State Water Project in 1976"	June 30, 1976
Appendix C, "Summary"	April 1, 1976
Appendix D, "Costs of Recreation and Fish and Wildlife"	April 1, 1976
Bulletin No. 132-77 "The California State Water Project in 1977"	June 30, 1977
Appendix C, "Summary"	April 1, 1977
Appendix D, "Costs of Recreation and Fish and Wildlife"	April 1, 1977

OBJECTIVE

The determination of water charges to be assessed contracting agencies will be supported and documented. Computational procedures will be discussed with representatives of the agencies as required.

Additional costs allocated to recreation and fish and wildlife enhancement will be determined and reported for approval by the Legislature so that such costs can be reimbursed to the Department from a continuing appropriations of $5 million annually.

WORK PROGRAM FOR CURRENT YEAR (1975-1976)

Bulletin No. 132-76 will be prepared and released by June 30, 1976, together with the latest revisions to tables contained in each agency's water supply contract. The Bulletin will substantiate charges to be paid by the agencies in 1977. Appendix D will be prepared to provide the 1976 report to the Legislature on project costs allocated to recreation and fish and wildlife enhancement. Discussions will continue with technical representatives of the agencies to reach agreement on specific methods of cost allocations and on the magnitudes and classifications of costs. $402,599

WORK PROGRAM FOR BUDGET YEAR (1976-77)

Bulletin 132-77 will be prepared and released by June 30, 1977, together with the latest revisions to tables contined in each agency's water supply contract. The Bulletin will substantiate charges to be paid by the agencies in 1978. Appendix D will be prepared to provide the 1977 report to the Legislature on project costs allocated to recreation and fish and wildlife enhancement. Discussions will continue with technical representatives of the contracting agencies to develop mutually agreeable solutions in areas of differences. $403,000

INPUT

	1974-75	1975-76	1976-77
Project Funds	$438,948	$402,599	$403,000
Man-Years	13.2	13.2	13.2

T. Ryono, S. D.
E. Greiner, D. P.
June 24, 1975

ADMINISTRATION OF FLOODPLAIN MANAGEMENT
PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

This program, under the title of "Flood Plain Management", started in July 1972. In March 1973, Bulletin 183-1 titled "San Bernardino County Flood Hazard Investigation: Upper Lytle Creek" was published. Similar studies on Murrieta Creek in Riverside County and Upper San Diego River in San Diego County have been completed and the Murrieta Creek Study is now being published. Upper San Diego River Study will be ready for printing at the beginning of fiscal year 1975-76. These two studies will be published as Bulletin No. 183-2, "Riverside County Flood Hazard Investigation: Murrieta Creek" and Bulletin No. 182, "Upper San Diego River Flood Hazard Investigation". Cooperative Study with San Bernardino County (community of Wrightwood) was initiated in 1974-75 F.Y. Cooperative Study Santa Ynez River Master Drain with Santa Barbara County will be initiated in F.Y. 1975-76.

Administration of the Cobey-Alquist Floodplain Management Act, assistance to local governments on the National Flood Insurance Program and establishing of priorities for Floodplain Information and Insurance Studies by the Corps of Engineers under their Floodplain Management Services Programs were also added to this program in July 1972.

Need

Accelerated growth in California during the postwar period has resulted in extensive development of the flood plains of the State. Recurrent floods are subjecting these developments to intense damage. Although flood control works have been constructed to protect many areas, local development within flood plains has increased at a faster pace than the construction of protective works.

OUTPUT

Name	Bulletin No.	Date Started	Completion Date	End of Contract Date
Wrightwood Study	District Report	10-1-74	12-31-75	12-31-75
Santa Ynez River Master Drain Study	District Report	7-1-75	6-30-76	6-30-76

OBJECTIVES

Objectives are to encourage local governments to develop sound land use practices consistent with the flood threat; promote safe development of areas subject to flooding by cooperating in studies and investigations; develop information and delineate areas subject to flooding; and assist in adopting land use regulations leading to sound flood plain management practices.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

1. Review regulations for local projects to determine compliance under the Cobey-Alquist Floodplain Management Act. Assist cities and counties in making application for participation in the National Flood Insurance Program. Propose list of areas to be considered for inclusion in the Floodplain Management Services Programs of the U. S. Army Corps of Engineers based on a review of applications submitted by the local entities.

   Cost — G $61,000

2. Complete cooperative study with San Bernardino County to delineate potential areas of inundation from mud flows for community of Wrightwood.

   Cost — G carryover
   R $10,000
   S $(1,000)

3. Cooperative Study with Santa Barbara County to determine peak discharges from areas tributary to Santa Ynez River

   Cost — G $40,000
   R $10,000
   S $(2,000)

4. Initiation of additional Flood Hazard Investigations depending upon local participation

   Cost — G $36,000
   R $30,000
   S $(35,000)

Environmental Considerations

These activities constitute planning studies and therefore are exempt under Section 544b of the DWR Regulations.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

1. The activities listed in the current year item 1 will be continued at the cost of $61,000.

   Cost — G $61,000

2. Work on Flood Hazard Investigations depending on local participation.

   Cost — G $151,000
   R $ 39,000
   S $(37,000)

Environmental Considerations

Study is exempt for the reason as cited under environmental considerations for the current year.

INPUT

	($1,000s) 1974-75	1975-76	1976-77
General Fund-Support	$120	$137	$212
Reimbursable - Cash	36	40	39
Estimated Value (Cooperator's Services)	(35)	(37)	(37)
TOTALS	$156	$177	$251
Man-Years	3.5	5.4	7.7

FLOOD PLAIN MANAGEMENT
(Work Authority 1490, Southern District)

SUPPLEMENT TO COMPONENT STATEMENT

	M.Y.	Fund	($1,000) Organization and Source of Funding DP	ND	CD	SJD	SD	Totals	Coop Services
Expenditures for 1975-76									
Administration of Cobey-Alquist Flood Plain Management and Federal Flood Insurance Program	1.9	G	$61					$ 61	
Wrightwood Study	.3	R					$10 1/	10 1/	
Santa Ynez River Master Drainage Study	1.2	G					40	40	
	.3	R					10	10	2
Misc. Flood Hazard Investigations	1.1	G					36	36	35
	.9	R	—				30	30	—
TOTALS	5.4	G	$61				$76	$137	37
		R					50 2/	50 2/	
Expenditures for 1976-77									
Administration of Cobey-Alquist Flood Plain Management and Federal Flood Insurance Program	1.9	G	$61					$ 61	
Flood Hazard Investigation	5.8	G		75 3/			76	151	
	—	R	—				39	39	37
TOTALS	7.7	G	$61				$76	$212	$37
		R					39	39	

1/Carryover reimbursable

2/Includes carryover reimbursable

3/ Allocations contingent upon cooperative agreement with local agencies

Significant Proposed Changes in Work Program for 1975-76

None

C. McCullough
June 27, 1975

INSPECTION AND MAINTENANCE OF FLOOD CONTROL FACILITIES
PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

The River and Harbor Acts of 1896 and 1902 authorized construction of works on the Yuba River to control hydraulic mining activities which had previously caused detrimental effects to navigation and flood-carrying capability of the downstream channels. These acts also provided that project costs for construction, maintenance, and replacement would be shared equally by the State and Federal Governments. Daguerra Dam, the principal physical structure related to debris control, was completed in 1906 - and was reconstructed following the 1964 flood. Currently the principal activities in this portion of the program are channel maintenance and stabilization.

In 1927, the State Legislature enacted laws which provided that specified portions or units of the Sacramento River Flood Control Project would be operated and maintained by the State. In 1947, adoption of Section 8360 of the State Water Code gave the State supervisory powers over maintenance and operation of the entire Sacramento River Flood Control Project. In 1965, the State Legislature further enlarged the area of the State's responsibilities to maintain the channels and overflow channels of the Sacramento River and its tributaries.

Need

The State has a primary interest and is committed to ensure that the channels, levees, and structures of debris and flood control projects are operated and maintained in accordance with federal regulations and the State Water Code.

OUTPUT

This is a continuing program. Annual work output includes:

1. Maintenance of the Yuba River channel as determined to be necessary by a joint (Corps of Engineers and DWR) annual inspection;.

2. Maintenance of approximately 140 miles of levees, 6 overflow weirs, 3 major pumping plants, 21 bridges, 55 miles of drain ditches, and 392 miles of overflow and bypass channels of the Sacramento River Flood Control Project;

3. Preparation of Bulletin No. 149 series which annually reports the results of detailed inspection of approximately 1640 miles of project levees, and all project floodways and structures.

INPUT

	1974-75	1975-76	1976-77
General Fund	$1,885,000	$1,931,000	$2,132,600 1/
Man Years	71.0	68.6	71.6

1/ Includes $172,000 increase for Northern District and $29,600 increase for Central District for increased cost of heavy equipment and supplies as of July 1, 1975, and includes 90 hours overtime for 43 employees of the Northern District (3 man years).

3. Inspect, repair, and maintain major structures of the project including: Moulton, Colusa, Tisdale, Fremont, Cobble, and Sacramento Weirs; Pumping Plants I, II, and III; Butte Slough Outfall Gates, and Knights Landing Outfall Gates; and various weirs and bridges associated with the project.

Cost $223,000

4. Clear and maintain areas of the channels of the Sacramento, Feather, and Bear Rivers; of the Yolo, Sutter, and Tisdale Bypasses; of Cherokee Canal and Butte Creek; and seepage ditches and drains associated with Drainage Project No. 6.

Cost $821,000

5. Continue to study methods of levee maintenance to replace burning and certain harmful herbicides; and provide staff coordination of flood control activities, flood-fight information, and assistance during flood emergency.

Cost $44,000

WORK PROGRAM FOR BUDGET YEAR (1976-77)

Yuba River Debris Control

Similar to 1975-76 $30,000

Flood Control Project Inspections

1. Detailed inspection and reports similar to 1975-76. $106,000
2. Review and inspect encroachments similar to 1975-76 $115,000

Sacramento River Flood Control Project Maintenance

1. Maintain levees and roadways similar to 1975-76 $415,000
2. Minor structures and patrol similar to 1975-76 $254,600
3. Major structures similar to 1975-76 $246,000
4. Clear channels similar to 1975-76 $922,000
5. Staff coordination similar to 1975-76 $44,000

OBJECTIVE

The objective of this program is to ensure the confinement and safe passage of water originating in the drainage basins of the Central Valley through the Sacramento-San Joaquin Flood Control Project and other major and minor federally-constructed flood control projects.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

Yuba River Debris Control

The work program for 1975-76 will be submitted to the Department by the U. S. Army, Corps of Engineers, Sacramento District after the runoff season, when the extent of necessary maintenance can be determined.

Cost $30,000

Flood Control Project Inspections

1. Make detailed semiannual inspections of approximately 1,650 miles of project levees; make annual inspection of all project floodway and structures; and prepare an annual report, Bulletin No. 149, "Flood Control Project Maintenance and Repair".

   Cost $106,000

2. Perform engineering review of applications for encroachments, and inspect construction or installation of approved encroachments; inventory and categorize all existing encroachments, and initiate action in regard to unauthorized encroachments.

   Cost $115,000

Sacramento River Flood Control Project Maintenance

1. Maintain designated project levees by controlling brush, weeds, and rodents on the levee sections, and by grading and adding rock to the levee crown roadway to assure continued access for maintenance activities, patrolling, and flood-fight activities during high water.

   Cost $361,000

2. Inspect and repair minor structures on or through the levee section, repair sloughs or erosion along the levee or bank, place rock as necessary to prevent continued scour or erosion, and patrol the assigned project levees during periods of high water to assure the integrity of the system.

   Cost $231,000

INSPECTION AND MAINTENANCE OF FLOOD CONTROL FACILITIES
Work Authorities 1860, 1875, 1884, DRD

SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Year

Major Activities and/or Study	M.Y.	Fund	DRD	ND	CD	Total
Expenditures for 1975-76						
Yuba River Debris Control		G	30.0	--	--	30.0
Inspections and Reports	5.0	G			106.0	106.0
Encroachments Review	4.0	G			115.0	115.0
Maintain Levees & Crown Roads	11.3	G		171.9	189.1	361.0
Maintain Minor Structures	9.0	G		161.9	69.1	231.0
Maintain Major Structures	8.6	G		199.3	23.7	223.0
Clear Channels & Drains	29.3	G		528.4	292.6	821.0
Staff Coordination and Alternatives to Burning	1.4	G	22.7	--	21.3	44.0
TOTAL	68.6	G	52.7	1061.5	816.8	1931.0
Expenditures for 1976-77						
Yuba River Debris Control	--	G	30.0	--	--	30.0
Inspections and Reports	5.0	G			106.0	106.0
Encroachment Review	4.0	G			115.0	115.0
Maintain Levees & Crown Roads	12.1	G		217.0	198.0	415.0
Maintain Minor Structures	9.3	G		180.5	74.1	254.6
Maintain Major Structures	8.9	G		217.0	29.0	246.0
Clear Channels & Drains	30.9	G		619.0	303.0	922.0
Staff Coordination and Alternatives to Burning	1.4	G	22.7		21.3	44.0
TOTAL	71.6	G	52.7	1233.5	846.4	2132.6

C. A. McCullough
June 26, 1975

FLOOD CONTROL MAINTENANCE AREAS
(Reimbursement)
PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

In order to secure a uniform degree of operation and maintenance on federal flood control projects throughout the United States, the Corps of Engineers on August 16, 1944 issued regulations governing the maintenance and operation of flood control works, establishing a high standard of maintenance. This condition led to the enactment of Chapter 1528, Statutes of 1947 providing a procedure for the enforcement of the maintenance requirements. Since the enactment of this law, thirteen maintenance areas have been formed. In 1969, Maintenance Area 2 was taken over by Levee District No. 1, Glenn County.

Need

Without this procedure to form maintenance areas on areas where the local people fail to properly maintain these levees, the entire Flood Control Project would soon be in a very vulnerable position.

OUTPUT

The major output for this activity includes the maintenance of 160 miles of levees located in 12 separate areas.

OBJECTIVES

To ensure the containment and safe passage of flood waters confined by the levees of the 12 maintenance areas.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

Levee Slope Maintenance

Spray twice with herbicide in the early spring for control of broadleaf weeds, and at 6-week invervals for control of Johnson Grass. Burn grass and weeds in summer. Clear brush and fill rainwash erosion. Fireguard with soil sterilants to protect minor structures from fire damage. Control rodents with poison grain and fumigants for protection of levee. Distribute weevils for biological control of puncture vine. Cost. $ 366,000

Levee Crown Roadway

Grade and add rock as required to assure continued access and proper bearing capacity for maintenance activities, patrolling and emergency repair during periods of high water. Cost. $ 49,000

Minor Structures on or through Levee Section

Repair damaged gates that control access to the levee. Inspect and repair pipes, culverts and levee markers. Cost. $ 39,000

Alternatives to Burning

Study methods of maintaining levee slope by using controlled vegetation. Cost. $ 39,000

Restoration of Damaged Levees and Banks

Repair sloughs along the bank, and fill and shape levee crown, and place rock to prevent continuation of erosion and scour. Cost. $ 19,000

Patrolling

Patrol the assigned maintenance area levees during periods of high water to determine the integrity of the system, repair erosion, and do flood fighting work if necessary. Cost. $ 49,000

Revegetation

A number of landowners have expressed their desire to upgrade the appearance of their levees. To do this it is proposed to initiate a revegetation program as a solution. Cost. $ 49,000

Miscellaneous

This includes clean-up of levees and R/W, and control of tree growth. Cost. $ 62,000

Liability Insurance

This is to protect the State and local Maintenance areas from lawsuit. Cost. $ 26,000

Environmental Considerations

This program is Categorically Exempt Class 1 under Section 547 of the Department's Environmental Regulations.

Work such as burning or spraying is done under permit or laws established by regulatory agencies in each field.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

Levee Slope Maintenance	
Similar to 1975-76 Cost.	$ 366,000
Levee Crown Roadway	
Similar to 1975-76 Cost.	$ 49,000
Minor Structures on or through Levee Section	
Similar to 1975-76 Cost.	$ 39,000
Alternatives to Burning	
Similar to 1975-76 Cost.	$ 39,000
Restoration of Damaged Levees and Banks	
Similar to 1975-76 Cost.	$ 19,000
Patrolling	
Similar to 1975-76 Cost.	$ 44,000
Revegetation	
Similar to 1975-76 Cost.	$ 49,000
Miscellaneous	
Similar to 1975-76 Cost.	$ 62,000
Liability Insurance	
Similar to 1975-76 Cost.	$ 26,000
Environmental Considerations	
Same as 1975-76.	

INPUT

	1974-75	1975-76	1976-77
Reimbursable	$596,219	$693,358	$693,000
Man-Years	21.2	24.4	24.4

C. A. McCullough
June 27, 1975

FLOOD FORECASTING AND OPERATIONS
PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

The program was started about 1933 when the initial units of the Sacramento River Flood Control Project were completed. The 1955 flood pointed up the need for a more comprehensive Flood Center, which was subsequently implemented in 1958. At that time the U. S. Weather Bureau, now the National Weather Service, moved physically in with the Department to jointly perform mutual responsibilities. The Flood Center provides a flood warming and information service for the public and for local, state and federal agencies. The Center assists local agencies during flood fights, coordinating with many other agencies. In addition, flood hydrology records that are obtained are compiled and published annually for the general public's use. Forecast capability has been gradually but steadily improved since 1958 through establishment of improved telemetry systems and computerized forecasting models. The Federal-State River Forecast Center and the Flood Center have performed effectively under such severe tests as the 1964 flood which devastated the North Coast, the 1969 flood which involved the greatest snowmelt flood potential of this century, and during the extended flood season of 1973-74. The report, "Flood!", which was published within months after the 1964 flood has now become a classic. The public, other agencies, and the news media have come to depend on the Centers to be in operation during any period of flooding or flood potential.

Need

California, in general, and certain areas in particular (North Coast Area, Sacramento Valley) are prone to periodic flooding. This situation poses a threat to life and property since there is extensive development on California flood plains. In areas such as the North Coast, physical flood control works are essentially non-existent, making flood warnings particularly important. In areas such as the Sacramento Valley, which has an extensive flood control project, coordination of actions of many agencies, forecasts of stage, and assistance in flood fights are critical.

OUTPUT

This is a continuing program. Flood warnings and forecasts are dependent on storms and thus cannot be scheduled. During 1973-74, for example, 450 River Bulletins which contain 7700 individual station forecasts were prepared. Annual publication of Bulletin No. 69, in the spring of each year covers the previous water year, and updated Flood Emergency Operations Manual is accomplished each November. Frequent releases of updated lists of flood control officials are also made.

Bureau of Reclamation, Corps of Engineers, and local agencies. Software is developed to implement computer and telemetry expansion. New instrumentation is developed as needed. Forecast procedures are improved in response to recent experience or evaluation, or to reflect watershed, structure or channel changes. Special studies for evaluation of forecast reliability are made. New or refined watershed models are developed and fitted to watersheds being forecasted. Plans for expansion of forecast service are developed with other agencies. Special studies are made to improve long-range forecasting for water supply and reservoir operation, currently this is called Hydrospect II and involves Scripps Institution of Oceanography at La Jolla as the forecaster and support by 9 federal and local agencies, administered by the department.

4. Flood Operation Center Cost $ 52,500

The Flood Operations Center on the 16th floor is activated and manned 24 hours per day, 7 days per week during alert, pre-emergency and emergency situations, or when a potential for high water condition exists. Personnel of the Department are trained for Center assistance, damage survey teams, flood fight methods, and related technical matters. A Flood Fight School is run for DWR and personnel of other agencies. A Flood Emergency Operations Manual and the Directory of Officials is revised and issued annually. Contact is maintained with the Corps of Engineers, State Forestry, Department of Justice, and the National Guard to assure assistance when necessary in flood times. Assistance is given to other agencies in making emergency repairs.

Environmental Considerations

This program (1) gathers, analyzes, and disseminates flood information and (2) assists in making emergency repairs to damaged levees or structures. The first activity is categorically exempt under Section 547, Class 6 of the Departmental Regulations. The second activity is exempt as an emergency under Section 546.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

Activities are the same as the descriptions presented for 1975-76 except as noted below:

1. Data Systems Operation, Maintenance, and Reporting. Cost $331,000G

Includes $15,000 to cover increased costs on data and telemetry system maintenance, and support of full-time rather than part-time man in Eureka Satellite Flood Center in the amount of $10,000.

OBJECTIVE

To minimize damage and loss of life during floods and to provide river flow and stage information for other purposes during nonflood periods.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

All activities are related to or support real-time operation at the Federal-State Flood Forecasting Center, the State-Federal Flood Control Center, and the Eureka Satellite Flood Center.

1. Data System Operation, Maintenance, and Reporting. Cost $306,000G

   The extensive stream gaging and precipitation and telemetry system through northern California is operated an maintained throughout the year, through services of General Services, technicians of the Division of Operation and Maintenance, the Northern District, the Central District and the San Joaquin District. Methods of improved data exchange with other agencies are sutdied and implemented. Bulletin 69, is prepared and published annually. A daily hydrologic report is prepared and disseminated throughout the year.

2. River Forecasting. Cost $ 87,000G

   Forecasts of stage and flow on the Sacramento River System are made weekdays all year long and also on weekends when stages are critical. During the flood season, October 1 through June 1, storms are monitored 24 hours a day, seven days a week. Forecasts and bulletins are prepared and disseminated at least once per day and up to six times per day for about 75 forecast points, in cooperation with the National Weather Service. Daily weather briefings are given for DWR personnel and other agencies. This is a cooperative operational program performed jointly with the National Weather Service. The total contribution of the National Weather Service to this program has a monetary value at least equal to the State's contribution.

3. Revision and Improvement of Forecast Methods and Instrumentation System. Cost $188,500G
   100,000R

   Planning and esign of computer and telemetry systems for the data, data organization, and forecasting system is updated continuously, coordinating and working with the National Weather Service, U. S.

2. River Forecasting. Cost $ 87,000G

3. Revision and Improvement of Forecast Methods and Instrumentation System. Cost $223,500G
Cost $100,000R

Includes $35,000 to expand forecast areas.

4. Flood Operations Center. Cost $ 52,500G

Totals: $704,000G
$100,000R
$804,000

INPUT

	1974-75	1975-76	1976-77
General Fund	$587,000	$634,000	$704,000
Reimbursable	$ 60,000	$100,000	$100,000
TOTAL	$647,000	$734,000	$804,000
Man-Years	16.3	17.3	18.6

FLOOD FORECASTING AND OPERATIONS
Work Authorities 1861 and 1883 DRD

SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Year Major Activities and/or Study	M.Y.	Fund	DRD	ND	CD	SJD	Totals
Expenditures for 1975-76							
Data System Operation, Maintenance, and Reporting	6.9	G	205,900	46,500	35,400	18,200	306,000
River Forecasting	2.6	G	87,000	--	--	--	87,000
Revision and Improvement of Forecast Methods and Instrumentation System	6.2	R	100,000	--	--	--	100,000
		G	188,500	--	--	--	188,500
Flood Center Operation	1.6	G	52,500	--	--	--	52,500
TOTALS, 1975-76	17.3	G	533,900	46,500	35,400	18,200	634,000
	0	R	100,000				100,000
			$633,400	46,500	35,400	18,200	$734,000
Expenditure for 1976-77							
Data System Operation, Maintenance, and Reporting	7.2	G	230,900	46,500	35,400	18,200	331,000
River Forecasting	2.6	G	87,000	--	--	--	87,000
Revision and Improvement of Forecast Methods and Instrumentation System	7.2	G	223,500	--	--	--	223,500
		R	100,000	--	--	--	100,000
Flood Center Operation	1.6	G	52,500	--	--	--	52,500
TOTALS, 1976-77	18.6	G	593,900	46,500	35,400	18,200	694,000
	0	R	100,000				100,000
			$693,000	46,500	35,400	18,200	$794,000

C. King
June 27, 1975

SERVICES TO THE RECLAMATION BOARD
PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

The Reclamation Board is the state agency established in 1911 and empowered by the Legislature to furnish the assurances to the Corps of Engineers for levee and channel flood control projects within the Central Valley. The Board has furnished these assurances for the past 64 years. To do this it acquires lands, easements, and rights of way for individual projects; it cooperates with the Corps of Engineers in the planning and construction of flood control works in the Central Valley; it oversees the maintenance of completed projects in accord with federal rules and regulations; it carries out programs of encroachment control under its police powers to ensure that works on or near project streams and facilities are compatible with the flood control requirements of the area and to protect lives and property behind the levees; it adopts plans of flood control to preserve floodways on streams of the Central Valley; and it passes on local plans of flood control to ensure compatibility with existing and proposed flood control projects.

In 1969 the Board's staff and workload were transferred by the Secretary for Resources to the Department of Water Resources. The Board retains all its legal powers and functions and furnishes direction and guidance to the Department of Water Resources to implement its program of flood control.

Services to The Reclamation Board is for flood control project work which was formerly performed by The Reclamation Board staff. During the 1976-77 fiscal year the Department will perform this work for The Reclamation Board.

Need

Flood control works in the Central Valley are needed to protect lives and property of the people against ravages of floods from rivers and streams and thereby prevent serious personal and economic loss in an area which provides food and fiber to the State and the Nation.

OUTPUT

This is a continuing program. Project schedules comprising the program are as follows:

Advertising Date	
8 July 75	S.R.B.P.P. - Unit 28
1 July 76	S.R.B.P.P. - Unit 30
15 Mar. 76	S.R.B.P.P. - Unit 29
1 Mar. 76	Bridges (11) - Fairfield
15 Aug. 76	S.R.B.P.P. - Unit 31
1 Oct. 76	S.R.B.P.P. - Unit 32
1 Mar. 77	Fairfield Stream Group (Corps)

This program, through cooperative sponsorship of projects constructed by the Federal Government, by preventing flooding will afford the people of California in the order of $11,000,000 in flood control benefits during F.Y. 1976-77 and comparable annual benefits during succeeding years.

OBJECTIVE

To provide lands, easements, rights of way, and relocations for federal flood control projects in the Sacramento-San Joaquin Valleys. To provide non-federal participation (cost estimates, comments, and recommendations) in the planning of federal flood control projects in the Sacramento-San Joaquin Valleys. To preserve the flood control protection of the Sacramento-San Joaquin Valleys.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

The work program is set forth in two categories: Provision for Flood Control Protection and Preservation of Flood Control Protection.

Provision for Flood Control Protection

For seven scheduled flood control projects make available for construction and determine prior rights on approximately 180 ownerships; fully acquire approximately 100 ownerships; design 11 bridges; construct 4 bridges; prepare cost estimates for proposed projects; review, comment, and recommend on flood control proposals, plans, and reports; review EIR's and furnish comments to ensure compliance with CEQA; and complete Phase I of the Bank Protection Project and start Units 28, 29, and 30. $900,000

Preservation of Flood Control Protection

Review and process approximately 600 encroachment applications; issue 1,500 Board Orders, classify 1,000 unauthorized encroachments; collect data, and make recommendations on approximately 12 encroachments involving legal action to be taken by the Attorney General's Office; acquire 20 ownerships; construct one levee safety modification contract; in cooperation with county agencies develop a Sutter Bypass Drainage System Plan; complete Cache Creek Study; designate floodways on 315 miles of streams to preserve channel-carrying capacities including flood routings, public hearings, and map preparation; review and comment on about 80 subdivisions and other developments in or near natural waterways; answer interrogatories involving inverse claims on about six cases per year; prepare the engineering testimony for approximately eight condemnation cases for the acquisition of land needed for flood control projects; prepare hydraulic studies involving gravel extraction, mobile home parks and the reclamation of land within the floodplain; manage property of Sacramento-San Joaquin Drainage District involving 10 excess land sales, negotiate six new leases, grant six easements, manage 45 old leases; prepare cost estimates for proposed flood control work; review, comment, and recommend on proposals, plans, reports; and review and recommend the implementation of CEQA on 600 Board applications, prepare 15 initial studies and four EIR's. $807,000

Environmental Considerations

The first category of work, "Provision for Flood Control Protection", is involved only with Corps of Engineers' flood control projects. The Corps prepares a federal EIS for each project. The "lead agency" under CEQA adds to the EIS any information that is required to bring the EIS into compliance with CEQA, in accordance with Section 15063 of the State Guidelines.

Under the second category of work, "Preservation of Flood Control Protection", The Reclamation Board has determined that the Designated Floodway Program and the Levee Safety Program can have no significant effect on the environment. The State Reclamation Board has found, therefore, that CEQA does not apply to these two programs, in accordance with Section 15060 of the State Guidelines.

All other activities under the second category of work are evaluated on a case-by-case basis for compliance with CEQA. The individual evaluations are done in consideration of the State Guidelines and The Reclamation Board's "Guidance for the Implementation of CEQA". Appropriate documentation is prepared for each evaluation.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

The work program is set forth in two categories: Provision for Flood Control Protection and Preservation of Flood Control Protection.

Provision for Flood Control Protection

For seven scheduled flood control projects make available for construction and determine prior rights on approximately 180 ownerships; fully acquire approximately 100 ownerships; design 8 bridges; construct 11 bridges, prepare cost estimates for proposed projects; review and comment on flood control proposals, plans, and reports; and review EISs and comment to ensure compliance with CEQA. $896,906

Preservation of Flood Control Protection

Review and recommend action on 600 encroachment applications; issue 1,500 Board Orders; classify 1,000 unauthorized encroachments; collect data and make recommendations on approximately 12 encroachments involving legal action to be taken by the Attorney General's Office; in cooperation with county agencies complete a Sutter Bypass Drainage System Plan; designate floodways on 265 miles of streams to preserve channel-carrying capacities including flood routings, public hearings, and map preparation; review and comment on about 80 subdivisions and other developments in or near natural waterways; answer interrogatories involving inverse claims on about six cases per year; prepare the engineering testimony for approximately eight condemnation cases for the acquisition of land needed for flood control projects; prepare hydraulic studies involving gravel extraction, mobile home parks and the reclamation of land within the floodplain; manage property of the Sacramento-San Joaquin Drainage District involving 10 excess land sales, negotiate six new leases, grant six easements, manage 45 old leases; prepare cost estimates for proposed flood control work; review, comment, and recommend on proposals, plans, and reports; review and recommend the implementation of CEQA on 500 Board applications; and prepare 15 initial studies and 4 EIR's. $807,000

Environmental Considerations

Same as 1975-76.

INPUT

	1974-75	1975-76	1976-77
General Fund:			
Support	$1,813,000	$1,707,000	$1,707,000
Capital Outlay	3,163,000	4,365,000	3,000,000
TOTAL	$4,976,000	$6,072,000	$4,707,000
Man-Years	58.9	58.9	58.9

J. L. Hyde
R. G. Potter
W. L. Terry
F. W. McCullough
G. V. Valenzuela

June 23, 1975

ADMINISTRATION OF FLOOD CONTROL SUBVENTIONS
PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

Because much of the development in California and other areas of the nation has taken place in areas subject to flooding, public programs to provide flood protection have been authorized. A national flood control program was authorized in 1936. This program required that nonfederal interests pay the costs of rights of way and relocations on channel improvement and levee projects. In 1945 the State adopted a policy of reimbursing local flood control agencies for all of these costs.

Work under this element began in 1946. During the first decade of operation, $14 million was disbursed to the local agencies. During the second decade, $67 million was disbursed. Through 1974-75, a total of $150 million has been paid out. The total state cost of the projects presently authorized is about $210 million.

Two major changes in program policy were enacted by the Legislature during the 1973 Session. The first of these establishes state-local cost sharing for rights of way and relocation costs. The policy applies to projects authorized after November 10, 1969. Because of the backlog of authorized projects not yet under construction, it will be several years before the policy has an impact on direct pay fund requirements. The second policy change expands the program to include state payment of 50 percent of the rights of way and relocation cost for recreation and fish and wildlife enhancement features of a project. The full impact of this policy is also several years away.

Need

Additional financial resources are required to permit the local flood control agencies to obtain federal projects. This component provides state financial assistance to projects which have been authorized by the Legislature.

OUTPUT

The schedule for 1975-76 is to complete engineering review of $6.0 million in local agency claims and prior deductions and to disburse the $10.5 million in funds available.

In the three northern districts final engineering reports should be prepared for all completed projects. For 1976-77 review should be completed for $6.0 million in claims and the subvention funds appropriated will be disbursed. Bulletin No. k58, "Flood Control Funds," will be released annually in January.

OBJECTIVE

The objective of the component is to ensure the orderly construction of federal flood control projects by providing that the local flood control agencies have adequate funds to acquire rights of way and make relocations. This will be accomplished by the expeditious processing of the local agencies' claims and the disbursement of the direct pay funds appropriated.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

The primary activities for 1975-76 will be the processing of local agency claims and prior deductions in order to meet the schedule of $6.0 million in engineering review and $10.5 million in disbursements and the preparation of final project reports. The first activity includes the preparation of engineering reports for claims and prior deductions actually submitted by the local agencies, the audit of such items by the State Controller's Office, and the preparation of encumbrance notices and reallocation orders which approve payment of the claims. The second activity includes a review of all state costs in connection with a project or project unit and a final audit which ends state administrative involvement. The cost of this activity is: $358,000

Secondary activities in the districts will include the determination of eligibility of items presented by the local flood control agencies and the detailed review of potential state costs for proposed federal flood control projects. The headquarters organization will review and endorse engineering reports on claims, will manage the direct pay funds, will review local agency requests for appropriations and prepare the capital outlay budget, will monitor the potential state costs of proposed federal flood control projects, and will review and revise, if necessary, program policies, and procedures. The cost of these activities is: $77,000

Environmental Considerations

The primary activity under this component is processing claims for state financial assistance to local flood control agencies participating in the construction of federal flood control projects. By the time claims are approved a final EIS/EIR will exist. Any necessary EIS supplements will be prepared under the Department's Review of Reports Component. Secondary activities are exempt as a nonproject under Section 544 of the Department's Environmental Regulations either as an administrative function or as a part of other agencies which are used for authorization.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

Since this component responds to the level of federal construction activity and the resultant flow of claims from the local flood control agencies, the nature of the component activities is essentially the same every fiscal year, only the project units change.

The primary activity for 1976-77 will be the preparation of $6.0 million in engineering reports and the disbursement of funds appropriated and the preparation of final project reports. Final recommendations on the amount of direct pay funds required will be made in September when detailed information on the actual 1975-76 federal appropriations is available and the local agencies are in a position to make detailed estimates of their 1976-77 needs. The state operations cost of this activity is: $306,000

Secondary activities, as described above, are the same and will be maintained on a current basis at a cost of: $76,000

Environmental Considerations

Same as 1975-76.

INPUT

	1974-75	1975-76	1976-77
General Fund	$409,000	$435,258	$382,000
Man-Years	14.6	15.1	13.2

ADMINISTRATION OF FLOOD CONTROL SUBVENTIONS
W.A. #1357, DP
W.A. #1397, ND
W.A. #1398, CD
W.A. #1399, SJD
W.A. #1359, SD

SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Year Major Activity	M.Y.	Fund	Organization and Source of Funding ($1,000) DP	ND	CD	SJD	SD	Totals
Expenditures for 1975-76								
Review of Claims and Prior Deductions	8.2	G	25	1	30	22	139	217
Prep. of Final Reports	4.0	G	7	4	30	10	55	106
Eligibility Determinations & Rev. of Proposed Projects	2.6	G	6	1	8	13	41	69
Funds Admin. & Cap. Outlay Budget	0.3	G						
Audits by State Controller	-	G	35					35
TOTALS 1975-76	15.1	G	81	6	68	45	235	435
Expenditures for 1976-77								
Review of Claims	6.3	G	25	1	30	13	97	166
Prep of Final Repts.	4.0	G	7	1	30	5	62	105
Eligibility Determinations & Rev. of Proposed Projects	2.6	G	6	4	8	9	41	68
Funds Admin. & Cap. Outlay Budget	0.3	G	8					8
Audits by State Controller	-	G	35					35
TOTALS 1976-77	13.2	G	81	6	68	27	200	382

June 23, 1975

Edward C. Greiner
June 25, 1975

EVALUATION OF FLOOD DAMAGE PREVENTION PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

Flood damages continue to occur in California despite construction of flood control works and floodplain management because these activities have not kept pace with growth, which for practical and economic reasons take place largely in areas subject to flooding. Construction of flood control works and their operation and maintenance has, for the most part, been handled by the federal and local governments with the State paying in excess of $241 million* during the past 56 years for lands, easements, and rights of way for channel improvements. Floodplain management is a local function which is stimulated in some instances by witholding payment for rights of way, if effective management is not exercised under provisions of the Cobey-Alquist Flood plain Management Act. Floodplain information studies are conducted by various federal, state, and local agencies with some control on priorities and criteria exercised by the Department of Water Resources. Risk studies are conducted for the Federal Insurance Administration to establish actuarial rates for floodprone areas qualified for flood insurance. The increasing public interest in maintaining and enhancing the natural environment will require some new directions in flood damage prevention, in identifying beneficiaries and allocating costs. Various federal acts and studies urge greater state roles in planning and coordinating water development and control programs.

Need

A comprehensive evaluation is needed of the floodplain management and flood control activities in California to assess the accomplishments and future needs to cope with future floods. With the increasing demands on the State's land resources, adequate consideration must now be given to where and how these lands can be developed to eliminate loss of life and to minimize damage to future developments caused by devestating floods.

OUTPUT

Study findings and recommendations will be published in a preliminary report by June 1976 and a Bulletin by March 1977.

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* Includes $105 million expended by the Reclamation Board since 1917.

OBJECTIVE

Evaluate the effectiveness and benefits of flood control facilities and floodplain management activities in California, estimate future needs, and propose a future course of action to achieve an effective flood damage prevention program.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

Flood hazard area copied from maps on file with the Department, Corps of Engineer, USGS, SCS, and flood control districts on 7-1/2 minute or 15 minute Quads will be transferred to overlays for maps to be included in the report. Inventories will be made of federal and local flood control projects. Areas protected by projects will be classified as receiving protection from a one-percent or greater event and from a two- to one-percent event.

Local flood control officials will be contacted to solicit their views on flood problems. Inventories will be made on how local governments are controlling building in flood-prone areas. Policy issues will be considered which would provide a basis for action by the Legislature.

The program will be fully coordinated with federal and local agencies, particularly the Corps of Engineers.

Study findings and recommendations will be published in a preliminary report by June 1976. The cost of this activity will be: $203,000

Environmental Considerations

The work of this program is planning and feasibility studies which are a nonproject exemption under Section 544 of the Department's Environmental Regulations.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

Comments on floodplain management concepts presented in the preliminary report will be solicited at public meetings conducted by the Districts. The comments will be incorporated into a final report to be published by March 1977. The cost of this activity will be: $165,000

INPUT

	1974-75	1975-76	1976-77
General Fund	$141,252	$206,000	$165,000
Man-Years	4.7	6.0	5.3

EVALUATION OF FLOOD DAMAGE PREVENTION
WA 1840, DRD

SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Year Major Activity and/or Study	M.Y.	Fund	Organization and Source of Funding ($1,000) DRD	ND	CD	SJD	SD	Totals
Expenditures for 1975-76								
Program Activities	6.0	G	6	31	53	53	63	206
TOTALS 1975-76	6.0	G	6	31	53	53	63	206
Expenditures for 1976-77								
Program Activities	5.3	G	9	25	41	41	49	165
TOTALS 1976-77	5.3	G	9	25	41	41	49	165

Significant proposed changes in Work Program for 1974-75

Work on this program started July 1, 1974. There have been no changes in program objectives.

June 25, 1975

C. King
June 27, 1975

LEVEE MAINTENANCE ASSISTANCE PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

Project Levees

Project levees have been maintained in a condition essentially bare of vegetation. This is the most economical maintenance which will ensure adequacy of inspection and ease in other maintenance activities. In recent years there has been increasing demand for the retention and preservation of wildlife habitat and for the preservation of vegetation on levees for esthetic reasons. The Legislature recognized this demand through the passage of Chapter 995, Statutes 1973 which provides for state assistance to local agencies in maintaining vegetation on levees.

Need

The change of construction and maintenance standards has added a financial burden to maintaining agencies over which the maintaining agencies have had little or no control. The additional costs of maintaining vegetation on levees is working a financial hardship on many of the districts. This program will provide partial reimbursement for the additional cost of maintaining controlled vegetation on levees.

OUTPUT

Review criteria and procedures that have been developed and modify them as experience is gained in the program. Local agencies' plans will be reviewed, inspections will be made, agreements for reimbursement entered into and administered.

OBJECTIVE

The objective is to assist local agencies in maintaining controlled vegetation on project levees.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

The work program will consist of:

Chapter 995

1. Review and possibly modify Board and Department procedures for partial reimbursement of the retention of controlled vegetation on project levees.

2. The Board and Department will enter into agreements with local agencies to maintain controlled vegetation on levees. $ 5,000

3. Inspect controlled vegetation on project levees. $ 15,000

4. Upon Board certification or its own certification for payment, as appropriate, the Department will reimburse local agencies under provisions of agreements with local agencies. $180,000

Environmental Considerations

All physical work will be done by local agencies. Each such agency will be a "lead agency" under CEQA. The Reclamation Board will be a "responsible agency" under CEGA. The environmental consequences of the levee work will be determined by the lead agency and will be documented when required by CEQA. Generally environmental documentation will not be prepared by the Board under this program.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

The work program shall consist of:

Chapter 995

1. Review and possibly modify Board and Department procedures for partial reimbursement of the retention of controlled vegetation on project levees.

2. The Board and Department will enter into agreements with local agencies to maintain controlled vegetation on levees. $ 5,000

3. Inspect controlled vegetation on project levees. $ 15,000

4. Upon Board certification or its own certification for payment, as appropriate, the Department will reimburse local agencies under provisions of agreements with local agencies. $180,000

Environmental Considerations

Same as 1975-76.

INPUT

	1974-75	1975-76	1976-77
General Fund:			
Local Assistance Support	$405,000	$180,000	$180,000
Administration		20,000	20,000
TOTAL	$204,000	$200,000	$200,000
Man-Years	1.4	1.0	1.0

G. W. Dukleth
June 27, 1975

SUPERVISION OF SAFETY OF DAMS
PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

The sudden failure of St. Francis Dam in Southern California in 1928 resulted in a major disaster. Because of this failure and because of the potential hazard to the general populace from the many water storage projects in California, the Legislature in 1929 enacted a law providing supervision, for safety, of dams across natural watercourses. Following the failure of Baldwin Hills Dam in Southern California in 1963, the Water Code was amended by the Legislature to include within State jurisdiction both new and existing offstream storage facilities and entire reservoirs as well as dams.

Need

Sections 6000 - 6470 of the California Water Code (Division 3) places the supervision for safety of all dams and reservoirs larger than a specified minimum size under the jurisdiction of the California Department of Water Resources. Federal dams are exempt from the Code. These Code provisions are administered by the Department through the Division of Safety of Dams. The Division independently analyzes and evaluates plans and specifications for constructing new dams and for enlarging, repairing, altering, or removing existing dams and must grant approval in writing before the owner may proceed. The Division inspects and evaluates each dam and reservoir during construction to verify compliance with the approved plans and specifications and to assure that changes or unforeseen foundation conditions are recognized and the design is modified as necessary. The Division provides continuing inspection, surveillance, and evaluation of operational dams annually or more frequently as necessary to ensure their safety. The Division issues a Certificate of Approval for each dam and reservoir, containing operational restrictions if necessary for safe use.

OUTPUT

Various activities of the Division are outlined under GENERAL DESCRIPTION. The following tabulation indicates the output from the major activities of the Division:

Activity	Estimated Number
Review and Evaluation of Applications for New Construction, Enlargement, Alteration, Repair or Removal of Dams	50
Systematic Examinations and Evaluations, including Reports of 1,100 existing dams	1,400
Special Design Studies, Evaluations, and Reports	40
Construction Supervision Inspections and Reports	700
Investigations of Alleged Violations	15-20
Review and Analysis of Instrumentation Data and Reports	450
Reevaluation of Most Critical Dams, including Reports	20

Currently also under preparation is a compilation of "Case Histories of Design, Construction and Operation of Dams and Reservoirs" which is planned to be published as a Division Report in 1976.

OBJECTIVES

The objective of this program is to prevent the failure of dams and reservoirs in California by requiring that they be safely designed, constructed, repaired, operated, and maintained.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

The reevaluation of the hydraulic fill dams has resulted in a number of applications for corrective action. Alteration or reconstruction of several of the hydraulic fill dams is currently under way.

The former program of pseudostatic analysis of selected old dams not previously analyzed for earthquake resistance has been modified to a dynamic analysis correlation, using an analogy procedure from data obtained by the investigation of the hydraulic fill dams. This program will be accomplished in phases. The first phase comprises the studies of the hydraulic fill dams. The second phase will be the identification of embankment dams constructed of sensitive soils or on poor foundations in seismically active and populated areas. Proceeding on a priority basis, starting with the more critical dams, ultimately most embankment dams under supervision will be considered for reevaluation.

A compilation of case histories of dams will be completed. Work on a report on the State of the Art in dam design will continue.

Work will be initiated on a report containing design and construction guidelines and a summary of the practices of the Division of Safety of Dams.

	Estimated Cost
1. The designs, plans, and specifications accompanying about 50 applications for new construction, enlargement, alteration, repair, and removal of dams will be analyzed and evaluated, including applications resulting from the hydraulic fill and other recent reevaluations. These will require studies of more than usual complexity. This work includes activities under the Environmental Quality Act.	$504,889
2. Following approval of the foregoing applications, supervision will continue during construction. It is expected that several of the recent reevaluations will result in construction activity in 1975-76.	$300,953
3. About 1,400 systematic examinations and appraisals of nearly 1,100 operational dams and reservoirs will be made to identify deterioration and potentially dangerous operating conditions. Public complaints and reported physical changes will be investigated, and corrective measures will be required as necessary.	$409,851
4. Surveillance programs and predictive instrumentation of existing dams and reservoirs will be monitored and controlled by independent analysis and evaluation of performance data furnished by the owners.	$132,657
5. The reevaluation of the structural design and spillway capacities of older dams and reservoirs will be continued using modern criteria, design analysis techniques, and data. Reevaluation of hydraulic fill dams will be essentially completed, and rehabilitation of those found substandard will be required. Reevaluation of the most critical dams other than hydraulic fills, from the standpoint of seismic loadings, will be continued. Rehabilitation of those found substandard will be required.	$275,214
6. About 15 to 20 dams, allegedly constructed and maintained in violation of the Water Code, will be investigated; and where confirmed, owners will be required to terminate the violations. Preapplication activities will be required on 10 to 15 dams.	$ 87,118

Environmental Considerations

Each application (received under Item 1 above) is evaluated in consideration of CEQA requirements, and the evaluation is documented in each application file. Applications are not approved until all required environmental documents have been prepared and processed in accordance with CEQA, The State Guidelines, and the Department's Environmental Regulations.

Essentially all other program activities are exempt from CEQA requirements for preparation of environmental documents. Most activities are exempt as a Class 9 Categorical Exemption (Inspections) in accordance with Section 547 of the Department's Environmental Regulations. Some activities are exempt as a Class 6 Categorical Exemption (Information Collection). A few activities can be classified as "Feasibility and Planning Studies" which are a nonproject exemption (Section 544).

WORK PROGRAM FOR BUDGET YEAR (1976-77)

The program and budget request for 1976-77 will be level with that of 1975-76 except for some internal rearrangement. The systematic examinations and appraisals of 1,100 operational dams will be carried out. Inspection of new construction and rehabilitated dams will continue.

The program for reevaluation of dams for earthquake resistance will continue on a priority basis.

Limited applied research will be performed to advance the State of the Art in dam engineering.

Two office reports, one on case histories and the other on the State of the Art, are expected to be completed during the year.

	Estimated Cost
1. The designs, plans, and specifications accompanying about 50 applications for new construction, enlargement, alteration, repair, and removal of dams will be analyzed and evaluated. Additionally there will be applications resulting from the hydraulic fill and other reevaluations of the last three years. This work includes activities under the Environmental Quality Act.	$504,889
2. Following approval of the foregoing applications, supervision will continue during construction. It is expected that several of the reevaluations of prior years will result in construction activity in 1976-77.	$300,953

3. About 1,400 systematic examinations and appraisals of nearly 1,100 operational dams and reservoirs will be made to identify deterioration and potentially dangerous operating conditions. Public complaints and reported physical changes will be investigated, and corrective measures will be required as necessary. $409,851

4. Surveillance programs and predictive instrumentation of existing dams and reservoirs will be monitored and controlled by independent analysis and evaluation of performance data furnished by the owners. $132,657

5. Work will continue on developing simplified procedures for performing dynamic analysis. Reevaluations of a number of critical dams, from the standpoint of seismic loading, will be performed. The program for less critical dams will continue beyond 1976-77 on a priority basis. Review and analyses of reports submitted on about 15 identified critical dams for seismic stability will be made. Work will continue on dynamic analysis by finite element method of typical embankment dams for correlation purposes; on special design studies and evaluations of the adequacy of various types of concrete structures; and on the reevaluation of flood hydrology for spillways believed to be inadequate. $275,214

6. About 15 to 20 dams, allegedly constructed and maintained in violation of the Water Code, will be investigated; and where confirmed, owners will be required to terminate the violations. Preapplication activities will be required on 10 to 15 dams. $ 87118

Environmental Considerations

Same as 1974-75.

INPUT	1974-75	1975-76	1976-77
General Fund	$1,696,000	$1,710,682	$1,710,682
Man-Years	55.2	55.3	55.3

Glenn B. Sawyer
June 25, 1975

TOPOGRAPHIC MAPPING
PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

The Legislature of the State of California inaugurated a program of topographic mapping in 1945 which was intended to lead to complete coverage of the State with topographic maps constructed to modern standards of accuracy, adequate as to scale, and reasonable current in depiction of cultural features. This program also includes statewide coverage by planimetric and mosaic maps and the establishment of an office of map information.

Responsibility for the administration of the California Cooperative Mapping Program and Map Information Office under these acts was assigned to DWR.

General Fund appropriations to the Department of Water Resources for topographic mapping have been matched by the Topographic Branch of the U.S. Geological Survey which performed most of the Mapping work.

During fiscal year 1968-69 the USGS implemented a new type of limited revision which would allow the survey to accomplish substantially more revisions than was possible before. This interim revision consists of updating all new cultural and other planimetric features visible on aerial photographs but several other normal revision operations are omitted, including contour changes, field inspection and completion and distribution of proof sheets for checking and correction. This product serves many of the needs of the professional map users for an interim period. In other words, the USGS can provide more maps partially updated rather than fewer maps completely revised at much longer intervals. Periodic complete or standard revision is still necessary, however.

Need

Nearly all of the Department's planning studies and many of its operational activities require precise, up-to-date base maps showing topographic and cultural features as depicted on the USGS series of 7 1/2-minute quadrangle maps. The maps provide many different kinds of information relating to the hydrologic and geographic features of the land and consequently are found to be indispensable by a great number of public and private planning groups, businesses, recreationalists, etc.

The need for map information, coordination and centralization of pertinent data has become increasingly more

apparent during the past years when considerable time was spent in searching for all available data in connection with other agencies' mapping, control activities or aerial photography in specific areas. The Map Information Office facilitates coordination among state mapping and surveying agencies by providing a channel for exchange of mapping and surveying data. The Map Information Office also prepares and assemble collateral data on subsidence and earth movement information for distribution. The Map Information Office advises interested parties on the application of new mapping techniques such as remote sensing using sky lab aerial photograph pictures and/or earth satellite imageries.

OUTPUT

This is a continuing program. During the period June 1975 to December 1978, this program will release 40 7 1/2-minute published topographic quadrangles covering about 2,298 square miles in the following areas:

Serial No.	Project	Area Square Miles	No. of Quads	Date Initiated	Advance* Sheet	Completion* Date (Publication)
-62	Apple Valley	988	16-7 1/2'	4/3/69	6/75	April 1976
-64	Fort Ross (Sonoma County)	470	10-7 1/2'	6/4/71	12/75	December 1978
-66	Isleton	840	14-7 1/2'	1/3/73	12/76	March 1978

* Advance sheet and completion date of publication furnished by USGS 6/26/75.

OBJECTIVE

The objective of the cooperative mapping program is to provide up-to-date topographic maps of the State at scales suitable for the purposes of the many map-using agencies.

The objective of the Map Information Office is to obtain, evaluate, and upon request, disseminate all available information on control, aerial photography, mapping, and surveying coverage in the State of California.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

Serial No. & Project*	No. of Quads	Gen. Fund	Reimburs. Fund
62 Apple Valley	16		- -
66 Isleton	14		- -

Serial No. & Project*	No. of Quads	Gen. Fund	Reimburs. Fund
64 Fort Ross (Sonoma County)	10		
SUBTOTALS	40	97,000	5,000
*All projects matched by USGS funds			
Admin. & Map Information		33,000	- -
Total 1975-76 Program		130,000	5,000

Environmental Considerations

This is a continuing program to provide up-to-date topographic map coverage and related information on maps and surveys activities in the State. These maps provide input to a wide variety of studies conducted by many agencies at all levels of government. The maps provide information only and therefore this program is exempt from the provisions of the California Environmental Quality Act according to the Class 6 Categorical Exemption under Section 547 of the Department of Water Resources Regulations for Implementation of the California Environmental Quality Act of 1970.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

Serial No. & Project*	No. of Quads	Gen. Fund
62 Apple Valley	16	
66 Isleton	14	
64 Fort Ross (Sonoma County)	10	
SUBTOTAL	40	97,000
*All projects matched by USGS funds		
Admin. & Map Information		33,000
		130,000

Environmental Considerations

This is a continuing, unchanging activity and the statement pertaining to exemption from provisions of the California Environmental Quality Act given under the Work Program for Current Year (1974-75) applies also to the 1975-76 budget year.

INPUT

	1974-75		1975-76		1976-77	
	M.Y.	$	M.Y.	$	M.Y.	$
General Fund Support	1.1	129,000	1.1	130,000	1.1	130,000
Reimbursable Cash		5,000		5,000		
Est. Value Coop. Service		(102,000)		(102,000)		(97,000)
Total	1.1	134,000	1.1	135,000	1.1	130,000

TOPOGRAPHIC MAPPING
(Work Authority 1151, Division of Planning)
SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Year Major Activity and/or Study	M.Y.	$1,000 Organization and Source of Funding Fund	DP	Coop Services
Expenditures for 1975-76				
Apple Valley, Isleton, and Fort Ross topo map preparation.		G R	97 5	102
Activities not charged to Study Areas: Admin. and Map Information Office	1.1	G	33	
TOTALS 1975-76	1.1	G R	130 5	102
	1.1		135	102
Expenditures for 1976-77				
Apple Valley, Isleton, and Fort Ross Topo Map Preparation		G	97	97
Activities not charged to Study Areas: Admin. and Map Information Office	1.1	G	33	
TOTALS 1976-77	1.1		130	97

C. A. McCullough
June 27, 1975

WATERMASTER SERVICE
PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

This program was started in 1924. Since then, watermaster service has proven an effective way to achieve distribution of water in accordance with defined priority of rights.

Need

The main duty of the watermaster is to see that the available flow (surface or ground water) is diverted in accordance with the priorities established by the decree or agreement, thus preventing occurrence of adverse use.

OUTPUT

Watermaster service is a continuous program. The watermaster's activities are geared towards the preparation of annual reports required by the Court in each of the watermaster service areas. The annual reports are filed with the Court and the parties not later than as shown:

Northern District

Bulletin No. 177 - Northern California - December

Central District

Bulletin No. 177 - Central California - December

Southern District

Bulletin No. 178 - Raymond Basin - August
Bulletin No. 179 - West Coast Basin - December
Bulletin No. 180 - Central Basin - January
Bulletin No. 181 - Upper Los Angeles River Area - March

OBJECTIVE

The general objectives of this program are to provide equitable distribution of available surface water supplies according to decreed rights for its use, and to control and administer the extraction of ground water from adjudicated basins according to terms of the court judgments for utilization of decreed rights.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

Northern District (Total Cost $173,000; 50% is reimbursable)

1. Provide watermaster service to 16 service areas in conformance with the provisions of Part 4 of Division 2 of the California Water Code. This will include the following:

   a. Determine the available water supply and apportion it in accordance with established (decreed) water rights. This includes field work and administrative supervision. Cost.

   b. Design and supervise construction of water diversion control and measuring devices for proper distribution of water. Cost.

   c. Compute annual costs for each watermaster service area, and prepare cost statements for each water user. Cost.

   d. Prepare and print annual watermaster report. Cost.

Central District (Total Cost $27,000; 50% is reimbursable)

1. Provide watermaster service to 2 service areas in conformance with the provisions of Part 4 of Division 2 of the California Water Code. This will include the following:

   a. Determining water supply and quantity each user has a right to divert. Cost.

   b. Settling disputes and misunderstanding. Cost.

   c. Disseminating information. Cost.

   d. Submitting reports on the work and on data collected. Cost.

   e. Updating agreements on present water use. Cost.

Southern District (Total Cost $208,000; 50% is reimbursable)

1. In each of the four watermaster service areas, the following is annually accomplished:

   a. Prepare and print annual report for each area. Cost.

   b. Administer water rights pool exchange. Cost.

   c. Certify and record transfer of water rights. Cost.

   d. Monthly tabulation of ground and surface water production is accomplished through electronic data processing machines (San Fernando Basin excluded). Cost.

   e. Water meters are continually being tested for accuracy (San Fernando Basin excluded). Cost.

   f. Spring and Fall water level measurements made. (San Fernando and Central Basins excluded). Cost.

   g. Budgeting and billing to water users. Cost.

   h. In Raymond Basin, 9 stream gaging stations are maintained and 15 surface and tunnel diversions are monitored and controlled. Cost.

Environmental Considerations

This program is to allocate and distribute available natural flow streams and ground water according to decreed rights. The Department has no discretion and this activity is a ministerial exemption under Section 545 of the Department's Environmental Regulations.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

Northern District (Total Cost $172,528; 50% is reimbursable)

1. Provide watermaster service to 16 service areas in conformance with the provisions of Part 4 of Division 2 of the California Water Code. This will include the following:

a. Determine the available water supply and apportion it in accordance with established (decreed) water rights. This includes field work and administrative supervision. Cost.

	$149,000
G	74,500
R	74,500

b. Design and supervise construction of water diversion control and measuring devices for proper distribution of water. Cost.

	$ 10,392
G	5,196
R	5,192

c. Compute annual costs for each watermaster service area, and prepare cost statements for each water user. Cost.

	$ 6,176
G	3,088
R	3,088

d. Prepare and print annual watermaster report. Cost.

	$ 6,960
G	3,480
R	3,480

Central District (Total Cost $27,394; 50% is reimbursable)

1. Provide watermaster service to 2 service areas in conformance with the provisions of Part 4 of Division 2 of the California Water Code. This will include the following:

a. Determining water supply and quantity each user has a right to divert. Cost.

	$ 19,860
G	9,930
R	9,930

b. Settling disputes and misunderstanding. Cost.

	$ 1,272
G	636
R	636

c. Disseminating information. Cost.

	$ 1,272
G	636
R	636

d. Submitting reports on the work and on data collected. Cost.

	$ 3,718
G	1,859
R	1,859

e. Updating agreements on present water use. Cost.

	$ 1,272
G	636
R	636

Southern District (Total Cost $207,662; 50% is reimbursable)

1. In each of the four watermaster service areas, the following is annually accomplished:

a.	Prepare and print annual report for each area. Cost.	$ 35,360 G 17,680 R 17,680
b.	Administer water rights pool exchange. Cost.	$ 7,934 G 3,967 R 3,967
c.	Certify and record transfer of water rights. Cost.	$ 15,966 G 7,983 R 7,983
d.	Monthly tabulation of ground and surface water production is accomplished through electronic data processing machines (San Fernando Basin excluded). Cost.	$ 37,712 G 18,856 R 18,856
e.	Water meters are continually being tested for accuracy (San Fernando Basin excluded). Cost.	$ 70,920 G 35,461 R 35,461
f.	Spring and Fall water level measurements made. (San Fernando and Central Basins excluded). Cost.	$ 12,440 G 6,220 R 6,220
g.	Budgeting and billing to water users. Cost.	$ 5,682 G 2,841 R 2,841
h.	In Raymond Basin, 9 stream gaging stations are maintained and 15 surface and tunnel diversions are monitored and controlled. Cost.	$ 21,648 G 10,824 R 10,824

Environmental Considerations

Same as 1975-76.

INPUT

	1974-75	1975-76	1976-77
General Fund			
Expenditures	$ 204,000	$ 203,792	$ 204,000
Man-Years	9.0	9.0	9.0
Reimbursable			
Cash	186,163	203,792	204,000
Man-Years	9.0	8.9	8.9
TOTAL			
Expenditures	$ 390,163	$ 407,584	$408,000
Man-Years	18.0	17.9	17.9

WATERMASTER SERVICE
Work Authority 1812, 1813, 1814
SUPPLEMENT TO COMPONENT STATEMENT

Fiscal Year Major Activity and/or Study	M.Y.	Fund	ND	CD	SD	Totals
Expenditures for 1975-76						
Field work and supervision	3.5	G	74.5	9.9	--	84.4
	3.5	R	74.5	9.9	--	84.4
Construction of diversion	0.3	G	5.2	--	--	5.2
structures	0.3	R	5.2	--	--	5.2
Prepare Reports	1.0	G	3.5	1.9	17.7	23.1
	1.0	R	3.5	1.9	17.7	23.1
Administer water rights,	0.6	G	--	--	12.0	12.0
pool & record transfers	0.6	R	--	--	12.0	12.0
Monthly tabluation of ground	0.8	G	--	--	18.9	18.9
and surface water production	0.8	R	--	--	18.9	18.9
Testing of water meters	2.0	G	--	--	35.4	35.4
	2.0	R	--	--	35.4	35.4
Maintain gaging stations	0.4	G	--	--	10.8	10.8
	0.4	R	--	--	10.8	10.8
Miscellaneous	0.4	G	3.1	1.9	9.0	14.0
	0.4	R	3.1	1.9	9.0	14.0
TOTALS	9.0	G	86.3	13.7	103.8	203.8
	9.0	R	86.3	13.7	103.8	203.8
Expenditures for 1976-77						
Field work and superivision	3.5	G	74.5	9.9	--	84.4
	3.4	R	74.5	9.9	--	84.4
Construction of diversion	0.3	G	5.2	--	--	5.2
structures	0.3	R	5.2	--	--	5.2
Prepare Reports	1.0	G	3.5	1.9	17.7	23.1
	1.0	R	3.5	1.9	17.7	23.1
Administer water rights.	0.6	G	--	--	12.0	12.0
pool & record transfers	0.6	R	--	--	12.0	12.0
Monthly tabulation of ground	0.8	G	--	--	18.9	18.9
and surface water production	0.8	R	--	--	18.9	18.9
Testing of water meters	2.0	G	--	--	35.4	35.4
	2.0	R	--	--	35.4	35.4
Maintain gaging stations	0.4	G	--	--	10.8	10.8
	0.4	R	--	--	10.8	10.8
Miscellaneous	0.4	G	3.1	1.9	9.0	14.0
	0.4	R	3.1	1.9	9.9	14.0
TOTALS	9.0	G	86.3	13.7	103.8	203.8
	8.9	R	86.3	13.7	103.8	203.8

C. A. McCULLOUGH
June 26, 1975

WATERMASTER SERVICE ADMINISTRATION
PROGRAM COMPONENT STATEMENT

SYNOPSIS

History

In 1961 the Legislative Analyst and the Department of Finance recommended adding general administration overhead costs to watermaster service charges. However, later action by the Legislature and the Department of Finance relieved the local water users from being assigned a share of the controversial administrative costs. In 1966 the Department arrived at an agreement with the Department of Finance and a Legislative representative as to which portions of watermaster administrative costs would be charged to local decreed water right users.

Need

Since 1966 only those portions of administrative costs which are directly related to watermaster field service are equally shared by the State and the water users. It is important to the water users and the Department that all costs be appropriately assigned.

OUTPUT

The Watermaster Service Administration is a continuing program to determine funding required for watermaster administrative overhead costs which are not shared by decreed water right users. These administrative costs include, but are not limited to, line management, executive management, and accounting services.

OBJECTIVE

To separate, collect and fund administrative overhead costs of watermaster service which must be assumed by the Department as distinguished from field watermaster services which are shared on a 50/50 basis by the Department and the parties to that service.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

Provides for payment of administrative charges of the Department's watermaster service.

Cost	$ 120,000

Environmental Considerations

This activity is only a vehicle to pay administrative overhead costs of the watermaster service, and will have no significant effect on the environment and is therefore exempt under Section 543 of the Department's Environmental Regulations.

WORK PROGRAM FOR BUDGET YEAR (1976-77)

Provides for payment of administrative charges of the Department's watermaster service.

Cost $ 120,000

Environmental Considerations

Same as 1975-76.

INPUT

	1974-75	1975-76	1976-77
Expenditures	$115,000	$120,000	$120,000
Man-Years	-0-	-0-	-0-

Dave Willis
June 26, 1975

INVESTIGATIONS AND SERVICES TO OTHER AGENCIES
PROGRAM COMPONENT STATEMENT

SYNOPSIS

For years the Department has provided other governmental agencies with services in areas where the Department can provide the necessary expertise more efficiently than those other agencies could develop and perform for themselves.

These services include the traditional engineering services that the Department can provide on a reimbursable basis, as well as technical services such as Electronic Data Processing and Graphic and Chemical Laboratory services where the Department has developed an expertise and can do the work for another agency more efficiently and economically than they could do it themselves.

All work performed under this component is performed under a signed contract and is completely reimbursed by the agencies receiving the services.

OBJECTIVE

To provide technical assistance in water resources and related fields and such miscellaneous services to other agencies as are requested and within the capabilities and statutory responsibilities of the Department of Water Resources.

WORK PROGRAM FOR CURRENT YEAR (1975-76)

1.	Perform a variety of engineering services to other agencies.	$ 655,413
2.	Technical services such as computer services, laboratory services, mapping, graphic arts and others.	$ 813,320
3.	Various administrative and miscellaneous services including the subleasing of department facilities.	$ 500,427
Total		$ 2,113,233

WORK PROGRAM FOR BUDGET YEAR (1976-77)

1.	Perform a variety of engineering services to other agencies.	$ 686,253

2. Technical services such as computer services, laboratory services, mapping, graphic arts and others. $ 813,32

3. Various administrative and miscellaneous services including the subleasing of department facilities. $ 500,247

Total $ 2,000,000

INPUT

	1974-75	1975-76	1976-77
Reimbursements	$ 2,113,233	$ 1,969,160	$ 2,000,000
Man-Years	16.7	19.1	19.1