YOLO COUNTY FLOOD CONTROL &
WATER CONSERVATION DISTRICT

Water Management Plan

October 2000

Prepared By:
Borcalli & Associates, Inc.
Consulting Engineers

YOLO COUNTY FLOOD CONTROL &
WATER CONSERVATION DISTRICT

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September 27, 2000

Mr. Curtis M. Miller, Chairman
Board of Directors
Yolo County Flood Control & Water
Conservation District
34274 State Highway 16
Woodland, California 95695

Dear Mr. Chairman and Members of the Board:

Subject: Yolo County Flood Control & Water Conservation District -- Final Water Management Plan

Borcalli & Associates, Inc. (B&A) is pleased to submit to the Yolo County Flood Control & Water Conservation District (District) the final Water Management Plan.

The District is to be commended for the effort expended to achieve as wide a distribution of the draft Plan as practical. Although few written comments were received on the draft Plan, the process followed by the District and the comments received validated the Action Program outlined in the Plan.

The District's expressed interest and invitation to other agencies to participate with the District in implementing certain elements of the Action Program are clear. I am hopeful the District and others will join together to advance aspects of water management within Yolo County.

The overall water supply situation in Yolo County is currently favorable due to the foresight and action of the District and other entities in Yolo County. As a consequence, it is difficult to gather and sustain resources to refine the management and understanding of our water resources to avoid the occurrence of a water supply crisis in the future.

The involvement of the District's Board and staff in the Action Program will provide the inertia that is needed to implement the Action Program. Too often this critical ingredient is lacking and very little gets accomplished.

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Table of Contents

		PAGE
I.	INTRODUCTION	1
II.	PURPOSE	3
III.	THE DISTRICT	4
	A. General	4
	B. Authority	4
	C. Selected Water Management Accomplishments	5
	1. Purchase of the Clear Lake Water Company, 1967	5
	2. Construction of Indian Valley Dam and Reservoir, 1976	6
	3. Construction of Chapman Reservoir, 1978	7
	4. Established the Moore Wildlife Sanctuary, 1979	7
	5. Construction of Indian Valley Dam Hydroelectric Project, 1983	7
	6. Yolo County Water Plan, 1984, and Water Plan Update, 1992	8
	7. Construction of Cache Creek Dam Hydroelectric Project, 1986	8
	8. Stopped Dredging of Clear Lake Outlet Channel, 1988	9
	9. Challenged EIR for Discharge of Effluent into Cache Creek, 1989	9
	10. Negotiated Highway 113 Under Crossings for Future Drainage, 1990	10
	11. Department of Water Resources Drought Water Bank, 1992	10
	12. Habitat Alliance and Wildlife Keepers (H.A.W.K.), 1992	11
	13. Capay Diversion Dam Modifications, 1994	12
	14. Guidelines for Reviewing Water Transfers in Yolo County, 1994	13
	15. Sacramento River Water Appropriation Application, 1994	13
	16. Cache Creek Water Appropriation Application, 1994	14
	17. Natural Resource Conservation Service (NRCS) Emergency Watershed Protection Project, 1995, 1998	14
	18. Streamflow and Weather Monitoring, 1996/1997	15
	19. Groundwater Export Ordinance Amendment, 1997	15
	20. Elevated Crest of Indian Valley Dam, 1998	15
	21. Bay-Delta Hearings, 1998	16
	22. Tamarisk and Arundo Removal	16
	23. Modification of Cache Creek Dam, 1998	16
	24. Emergency Stabilization of Guinda Bridge, 1998	16

Table of Contents (Cont'd)

PAGE

25. Resource Conservation District (RCD), Water Conservation Program 1998, 1999 17
26. Indian Valley Hydroelectric Project Acquisition, 1999 17

IV. DISTRICT'S WATER SUPPLY SYSTEM 18

A. Water Rights 18

B. Surface Water 19

1. General 19
2. System Operation 21
3. Water Quality 23

C. Groundwater 23

1. General 23
2. Water Quality 31
3. Intrusion of Saline Water 31
4. Groundwater Recharge 32
5. Well Construction and Abandonment 34
6. Subsidence 34

V. WATER USE 36

A. Land Use 36

1. Land Use Planning 40

B. Water Use 40

1. Agricultural 40
2. Urban 44

C. Water Use Efficiency 44

1. System Efficiency 44
2. On-farm Efficiency 47

D. Summary 47

Table of Contents (Cont'd)

		PAGE
VI.	DISTRICT'S WATER DELIVERY SYSTEM	48
	A. General	48
	B. Efficiency	48
	C. Operation	50
VII.	AGENCY COORDINATION	51
	A. Coordination at Local Level	51
	B. Coordination at State and Federal Level	54
VIII.	WATER MANAGEMENT ACTIVITIES	57
	A. Water Rights Protection	57
	B. Surface Water Monitoring	58
	C. Groundwater Monitoring	60
	D. Cache Creek Recharge/Recovery Project	60
	E. District-Woodland-Landowner In-Lieu Groundwater Recharge Project	62
	F. Yolo-Zamora In-Lieu Groundwater Recharge Project	62
	G. Sacramento River Diversion Project	62
	H. Public Relations Program	63
XI.	FINDINGS	64
X.	ACTION PROGRAM	65
	Action A. Public Relations Program	67
	Action B. Agricultural Water Users Workshops	71

PAGE

Action C. Land Use/Water Use Surveillance 75

Action D. Surface Water Monitoring 80

Action E. Groundwater Monitoring 83

Action F. Cache Creek Recharge/Recovery Project 87

Action G. Sacramento River Water Diversion Project 95

Action H. District-Woodland In-Lieu Recharge Project 98

Action I. District-Yolo-Zamora In-Lieu Recharge Project 104

Action J. Dunnigan Hills Water Needs/Options 109

Action K. Drought Management Preparedness 114

Action L. Water Management and Operations Report 117

LIST OF TABLES

No.	Title	
1	Indian Valley Flood Spills in Relation to Annual System Demand	22
2	Cache Creek System Boron Concentration	24
3	Sources and Relative Amounts of Groundwater Recharge	33
4	Summary of Land Use: 1981, 1989 Upstream of Capay Diversion Dam	37
5	Summary of Land Use: 1981, 1989 Downstream of Capay Diversion Dam	38
6	Agricultural Land Use, 1989: Irrigated and Nonirrigated	39
7	Urban Land Use, 1989	39

LIST OF TABLES (Cont'd)

No.	Title	PAGE
8	Agricultural Land Use and Source of Irrigation: 1989	41
9	Source of Agricultural Water: District Compared With Yolo County - 1989	42
10	Total Water Use for Irrigation: 1976, 1981, 1989 Yolo County and District	43
11	Unit Water Use for Irrigation: 1976, 1981, 1989 Yolo County and District	43
12	Urban Water Use	45
13	Summary of District Water Service Operations: 1970-1996	49

LIST OF FIGURES

No.	Title
1	Water Level Hydrographs (Well No. 12N/01W-14M01 and No. 11N/01E-15C01) 26
2	Water Level Hydrographs (Well No. 10N/02E-18M01 and No. 09N/02E-07L01) 27
3	Water Level Hydrographs (Well No. 10N/01W-05E01 and No. 10N/01W-18E01) 28
4	Water Level Hydrographs (Well No. 08N/01W-09C01 and No. 09N/02E-35E01) 29

LIST OF MAPS

No.	Title		
1	Water Purveyors and General Sources of Water	Back of Report	
2	Cache Creek Watershed	"	"
3	Groundwater Monitoring Wells	"	"
4	Groundwater Contours - Spring 1996	"	"
5	Change in Groundwater Elevation - Fall 1977 to Spring 1978	"	"
6	Change in Groundwater Elevation - Spring 1986 to Fall 1990	"	"
7	Base of Fresh Groundwater	"	"
8	Depth to Groundwater - Spring 1996	"	"

APPENDICES

A	Sacramento County Groundwater Contours and Cross Sections	Back of Report	
B	Comparative Assessment -- District's Action Program in Relation to Elements of AB 3030 and AB 3616	"	"
C	Scoping Committee	"	"
D	Public Review	"	"

INDIAN VALLEY DAM AND SPILLWAY

I. Introduction

The Yolo County Flood Control & Water Conservation District (District), was formed by the California Legislature in 1951, to control, manage, and distribute water resources for beneficial use within the District's boundaries (Stats. 1951, Chapter 1657, Page 3772, "District Act"). In adopting this Water Management Plan, the District will formalize its mission:

> *"To plan, develop, and manage the conjunctive use of its surface and groundwater resources to provide a safe and reliable water supply, at a reasonable cost, to sustain the socioeconomic and environmental well-being of Yolo County."*

To further its mission, the District has acquired water rights and manages extensive facilities, while developing plans to obtain supplemental water supplies to meet future needs within the District. The County of Yolo, in adopting the "Yolo County Water Plan - 1984" and the "Water Plan Update - 1992," recognized the District's role in helping to provide water supplies for current and future needs within the County.

The District has determined it would be useful, to further its mission, to prepare a document (this "Water Management Plan") to: (1) provide information about the District's water rights, facilities, and distribution system, (2) provide information about the District's historic management activities in the conjunctive use of surface water and groundwater supplies, and (3) set forth actions for the District to plan for the management of its existing water supplies and develop supplemental supplies to meet beneficial needs within the District.

Two recent legislative enactments (AB 3616, the Agricultural Water Suppliers Efficient Water Management Act, 1990, Water Code Section 10903; and AB 3030, the Groundwater Management Act, 1992, Water Code Section 10700), set forth provisions to include within a district's water conservation plan and groundwater management plan, respectively. The District has chosen to

prepare a comprehensive water resources management plan instead of separate plans to deal with water conservation and groundwater management.

The District's Water Management Plan (Plan) includes provisions that are authorized for inclusion within AB 3616 and AB 3030. The Plan would therefore satisfy the requirements of an AB 3616 plan and an AB 3030 plan. The District's Plan, however, reflects the District's groundwater management activities authorized by the District Act, which are far more extensive than those authorized under AB 3030. For that reason, at this time the District's Plan relies on the groundwater and surface water management authority that are already granted to the District under the District Act.

The District's Plan does not extend beyond the existing boundaries of the District because the District's authority to implement the Plan outside its boundaries is limited. The District Act authorizes the District to enter into contracts, joint powers agreements, and other cooperative arrangements with the County, cities, other public agencies, and water companies. Therefore, part of the Plan will be to investigate cooperative arrangements with other public agencies within Yolo County regarding implementation of the District's Plan.

The District, in preparing this Plan, received guidance from a Scoping Committee comprised of individuals representing urban and agricultural interests within and outside the District. Meetings of the Scoping Committee have been open to the public. The District expresses its appreciation to the members of the Scoping Committee for their invaluable participation in developing this Plan.

The formulation of this Plan represents the District's effort to continue its leadership role in developing and managing water supplies to meet the current and future beneficial needs of the District into the next millennium for the long-term benefit of Yolo County.

CAPAY VALLEY (LOOKING UPSTREAM ON CACHE CREEK)

II. Purpose

The purpose of the District's Plan is to:

1. Provide information about the District's water rights and water supply and distribution facilities.

2. Provide information about the District's historic activities dealing with interagency cooperation, protecting water rights and water quality, and conjunctive use of surface water and groundwater supplies.

3. Set forth an Action Program to manage existing water supplies and develop supplemental supplies to meet beneficial needs within the District.

4. Invite other public agencies to participate in implementing this Plan or expansion thereof.

CACHE CREEK EAST OF INTERSTATE HIGHWAY 505

III. The District

A. GENERAL

The District was established by the California State Legislature on July 1, 1951, under the provisions of General Law 9307, Statutes of 1951, Chapter 1657, as amended.

The District, which includes approximately 190,000 acres, or nearly 40 percent of the valley lands in Yolo County, is governed by a five-member Board of Directors appointed by the County Board of supervisors to serve four-year terms. Presented on Map 1 are the District's boundaries in relation to other districts within Yolo County.

The District's General Manager is responsible for planning for the District's long-term water needs and oversees the activities carried out under the Construction, Flood Control, and Irrigation Divisions of the District. In addition to the General Manager, the District's normal work force includes 15 employees, including two dam tenders and power plant operators, seven irrigation workers, three field and equipment supervisors, and three office staff members. All operations and maintenance services are provided by District personnel, including water delivery, billings, accounting, construction, and facility and equipment repair and replacement.

B. AUTHORITY

Under the District Act, the District has broad authority to plan, develop, and manage surface water and groundwater resources. The District's General Manager is responsible for carrying out policies and directions of the Board of Directors relative to long-term water needs and oversees the construction, operation, and maintenance of irrigation, drainage, and flood control facilities and power plants. Specific authorities include, but are not limited to, the following:

- Construct, maintain, repair, and operate levees, canals, reservoirs, and drains.
- Provide for the control and disposition of storm and flood waters.

- Levy and collect a groundwater charge for the production of water from the groundwater supplies on lands within the District.

- Acquire the rights to store water in any reservoirs or to carry water through any canal, ditch, or conduit not owned or controlled by the District.

- Make available water that is surplus to the needs of the lands and inhabitants within the District for beneficial use inside Yolo County.

- Establish and fix the boundaries of zones of benefit.

- Enter into contracts: (1) for loans to finance planning, acquisition, construction, operation, or maintenance of projects and lands, easements, and rights-of-way; and (2) for grants for recreational or fish and wildlife enhancement benefits projects.

C. SELECTED WATER MANAGEMENT ACCOMPLISHMENTS

A wide variety of activities and skills are involved in managing and protecting the District's water resources to provide a reliable water supply at the lowest feasible cost. Set forth below is a partial list of District activities and accomplishments with respect to water resources, management, preservation, and stewardship.

1. Purchase of the Clear Lake Water Company, 1967

On August 1, 1967, voters in the District authorized the issuance of revenue bond indebtedness of $2,095,000 for the purpose of acquiring the Clear Lake Water Company. The District began operating the enterprise, which included Clear Lake on Cache Creek in Lake County, with an active storage of 320,000 acre-feet natural flow on Cache Creek in Yolo County, and an extensive irrigation and drainage system. The system now includes over 175 miles of canals, laterals, and drains. These revenue bonds were retired

in 1985. The District owns water rights having a priority of May 28, 1912, that cover the storage of water in Clear Lake and its release for irrigation and other beneficial uses. The appropriated water right on Cache Creek in Yolo County has a priority of December 4, 1855. Through Permit No. 19162, issued by the State Water Resources Control Board (State Board), the District also has the right to utilize water from Clear Lake for hydroelectric power generation.

2. Construction of Indian Valley Dam and Reservoir, 1976

On September 29, 1970, voters in Zone No. 4 of the District, authorized general obligation bond indebtedness of $3,200,000, and on September 26, 1972, voters authorized general obligation bond indebtedness of $4,500,000, all for funding the Indian Valley Project on the North Fork of Cache Creek. Additionally, the District also contracted with the U.S. Department of Interior for a project loan of $2,123,900, and a grant of $4,176,700, under Public Law 984. Project construction began in 1972, and was completed in 1976. The District purchased the Public Law 984 Loan Contract at a discount from the Department of the Interior during 1988, with a loan from its enterprise fund. In 1998, nearly 18 years early, the District retired all Indian Valley debt. It made the final bond payment, repaid the enterprise fund, and waived the outstanding loan balance. The District holds Water Right Permits No. 12848 and No. 12849, issued by the State Board for the Indian Valley Project. These permits allow for storage and diversion of water from the North Fork of Cache Creek and Cache Creek for irrigation, flood control, power generation, recreation, and domestic purposes. Also, the District holds Permit No. 18295, which allows the diversion of water through the outlet works for hydroelectric power generation.

The flood control aspects of the project have been significant, particularly in 1995, in preventing Cache Creek from flowing out of bank.

3. Construction of Chapman Reservoir, 1978

The District coordinated with Caltrans during construction of Interstate 505 to excavate material for construction of the highway at the Chapman Reservoir site. Chapman Reservoir has a nominal capacity of 200-acre feet and provides operational flexibility for the District's irrigation system and attenuation of storm runoff.

4. Established the Moore Wildlife Sanctuary, 1979

In 1979, the District formally dedicated 30 acres of riparian property near the old Moore diversion dam as a wildlife sanctuary. The secluded site is principally used as a safe haven for assorted wildlife but has been improved by the installation and maintenance of water sources, nesting sites for various birds and bats, and plantings of various beneficial plants. It is also made available for low-impact educational projects.

When the area was ravaged by an accidental electrical fire in 1990, PG&E acknowledged the value of the site and assisted the District in the restoration, which involved replacing telephone poles for nesting sites; revegetating the area with over 300 oak trees; planting hundreds of shrubs, bushes, and native grasses; and replacing the quail guzzler.

In 1998, the District acquired 13 acres of a mined gravel pit adjacent to and upstream of the sanctuary. The property provides a buffer to protect the sanctuary. No plan for use of the 13 acres has been developed at this time.

5. Construction of Indian Valley Dam Hydroelectric Project, 1983

When the development of alternative energy sources was in its infancy, the District executed agreements for one of the first public/private partnerships in California, to design, finance, construct, and operate a hydroelectric project. The Indian Valley Dam Hydroelectric Project was retrofitted to the outlet works of Indian Valley Dam, and has

a rated capacity of 3100 kW. The operation of the power plant is incidental to the District's operation of its facilities for water supply and flood control.

6. Yolo County Water Plan, 1984, and Water Plan Update, 1992

The communication and interaction between water purveyors that exists in Yolo County today was slow to evolve. Recognizing that Yolo County could benefit over the long term if water purveyors worked together in areas where it was appropriate, the District, in cooperation with Yolo County, shared the costs of preparing the first County Water Plan. The effort took three years, not because of technical difficulties, but because of the time to attain concurrence on language in the plan document. In 1986, the District initiated the first meeting of the Plan's recommended Interagency Water Management Coordinating Committee with staff level participation. A number of years later, the committee recommended an update of the Water Plan and the involvement of agency representatives having fiscal authority. The Water Plan was updated in 1992, and from it evolved the existing Water Resources Association of Yolo County (WRA). The WRA' Board of Directors is comprised of members representing the councils of the cities of Davis, West Sacramento, Woodland, and Winters, the Board of Directors of the Dunnigan Water District and the District, and representatives of the University of California at Davis (UCD) and the County.

7. Construction of Cache Creek Dam Hydroelectric Project, 1986

Using its own resources, the District planned and constructed the hydroelectric project below Clear Lake. This project has a rated capacity of 1750 kW. The operation of the power plant, like Indian Valley, is incidental to the District's operation of its facilities for water supply. In 1998, the District lowered the tailrace from the project and installed an inflatable spillway gate on the dam to facilitate removing debris. This resulted in an increase in energy production.

8. Stopped Dredging of Clear Lake Outlet Channel, 1988

In 1988, the District filed a lawsuit against Lake County in response to dredging of the Clear Lake Outlet Channel and to protect the integrity of the Bemmerly Decree, which was originally filed to protect Yolo County riparian lands from additional erosion caused by increased flows from Clear Lake. The District subsequently developed and executed a Memorandum of Understanding (MOU) with Lake County governing the extent of work that is allowed on the Clear Lake Outlet Channel under the Bemmerly Decree.

9. Challenged EIR for Discharge of Effluent into Cache Creek, 1989

In 1985, the District sent a letter of support to the California Department of Clean Water Grants requesting the extension of grant deadlines for the Clearlake Oaks County Water District (COCWD) to meet study requirements for the California Department of Fish and Game and still be able to qualify for approved grant funding to fix the inflow and infiltration problems that were responsible for the "Cease and Desist" placed upon its old and failing sewage system. However, when the COCWD subsequently proposed to discharge its treated effluent into a tributary of the Cache Creek watershed rather than fix the cause of the problem, the District took a strong position in opposition. In 1989, the District, Yolo County, and the Yolo Grange successfully challenged the adequacy of the COCWD's EIR for the proposed discharge project. Subsequently, the District and others prevailed on the California Regional Water Quality Control Board (CRWQCB) not to renew the COCWD's discharge permit for the discharge project.

During this same time, other sanitary systems in Lake County were also experiencing problems with the disposal of effluent and proposing similar discharges into other tributaries to the Cache Creek watershed. The District took a proactive position. While supporting an alternative project to pipe effluent to the Geysers for recharge to enhance steam production, the District was also working with the CRWQCB to have the Basin Plan modified to recognize and preserve all beneficial uses of Cache Creek.

Still trying to facilitate an alternate method of effluent disposal, in 1994, the District negotiated a modification to the Solano Decree with Lake County, which was submitted to the court for approval. The modification allowed the District to provide up to 7,500 acre-feet of water to Lake County without negatively impacting the quantity of water available to the District for downstream diversion. The District would provide water from Clear Lake that is needed in excess of the available effluent to facilitate the piping of Lake County's effluent to the Geysers for disposal. As Lake County continues to grow, the quantity of water required from the District for this purpose will become smaller. This approach resulted in an economic incentive for Lake County to discharge effluent to the Geysers rather than the Cache Creek system.

The COCWD has recently announced its plan to connect to the Geysers pipeline and add treated effluent to the effluent exported to the Geysers.

10. Negotiated Highway 113 Under Crossings for Future Drainage, 1990

During the proposed construction of Highway 113 from Davis to Woodland, the District met with Caltrans to discuss Caltrans' under crossing required to accommodate the District's Farmers Central Canal south of the City of Woodland. The District prevailed upon Caltrans to size the under crossing to accommodate the required capacity of the facility if it were to be required to provide surface drainage for the City of Woodland as it expands into the surrounding agricultural lands.

11. Department of Water Resources Drought Water Bank, 1992

In 1991, the Department of Water Resources (DWR), through its newly-created Drought Water Bank, proposed to transfer large amounts of water from eastern Yolo County. This was being proposed without consideration of adequate safeguards for Yolo County. To protect the County's interests, the District, drafted a water transfer agreement that set forth conditions for water transfers, including financial compensation and establishing

and implementing an extensive groundwater and subsidence monitoring program to assess impacts from the water transfers. The agreement was subsequently modified to facilitate implementation by Yolo County.

12. Habitat Alliance and Wildlife Keepers (H.A.W.K.), 1992

In 1992, a joint project of the District and the Yolo County Office of Education created a unique learning program for "at risk" students called Project H.A.W.K. (Habitat Alliance and Wildlife Keepers). The H.A.W.K. motto: "To learn, to serve and to teach: One acre and one student at a time," describes a program that has grown to include youth of all abilities, including special needs students, from throughout Yolo County. The program challenges youth to apply classroom academics in concert with creative energies toward the solution of environmental and community issues in the "habitats" of school, community, and environment.

The District originally provided access to, and assistance on, approximately 20 acres of riparian land as a site for "hands on" learning for students. In the last five years, the H.A.W.K. students have established an environmental learning site on the 20 acres with a long range master plan (approximately 4,000 youth have visited and worked at the site), which is used by Woodland, Davis, River City, and Fairfield high schools in addition to the Cache Creek Continuation High School and Woodland Midtown School.

The students also built a 3-acre H.A.W.K. Garden Learning Center in Woodland. The H.A.W.K. Center serves approximately 700 elementary youth from throughout Yolo County annually. The combined efforts of Cache Creek, Midtown, and the Woodland FFA have initiated the Spring and Fall Festivals in the Garden, built a network of five elementary school gardens and two childcare centers for teen parents, and worked to demonstrate that students of all backgrounds and abilities can learn, serve, and teach together when joined in a common purpose.

A summer school class based at the District serves a model for School-to-Career and Service Learning. The program is now funded through the California Department of Education to train teachers in technology, project-based learning and the application of Federal and State education standards to student learning outside the traditional school setting. In 1999, the program was a finalist for the Association of California Water Agencies (ACWA) Claire-Hill Award for excellence in public education on water issues.

13. Capay Diversion Dam Modification, 1994

To enhance the management of its water resources and water delivery for irrigation, in 1994, the District retrofitted a 474-foot-long by 5-foot-high inflatable dam on its Capay diversion structure, which was constructed in 1914. At the time, the project was completed, the inflatable dam was the longest single bladder dam in the world.

This work represents an innovative approach to addressing several water management and conservation items.

The diversion structure, with the inflatable dam, accomplishes the following:

- Conserves water by making it possible to raise the upstream pool earlier in the season to facilitate the diversion of water for irrigation that previously would not have been recoverable.

- Removes the safety risk associated with setting steel stanchions and flashboards on the crest of the 15-foot-high diversion structure.

- Conserves groundwater in years when surface water is available by allowing the District to make water deliveries earlier than was previously possible.

- Facilitates implementing the District's proposed groundwater recharge/ recovery project by allowing the District to divert water during winter months without the risk of flooding upstream lands during high runoff, as the dam can be lowered and subsequently raised in approximately 30 minutes.

14. Guidelines for Reviewing Water Transfers in Yolo County, 1994

Working with the Water Resources Committee of the WRA, the District helped develop a draft model of Guidelines for Reviewing Proposed Water Transfers. The guidelines were submitted to the WRA for each WRA member agency to consider for modification and adoption. In 1994, the District reviewed the draft guidelines and adopted a modified version for its use. The District is the only agency comprising the WRA that has taken action to adopt the guidelines.

15. Sacramento River Water Appropriation Application, 1994

In 1993, the District initiated an investigation of supplemental water supplies involving the cities of Davis, Woodland, and Winters; UCD; the Yolo-Zamora Water District; and the Solano Water Authority. Following completion of this investigation, the District filed an application to appropriate water from the Sacramento River. This application was filed on behalf of the cities of Woodland and Davis and UCD, each of which are within the boundaries of the District. This application was filed under provisions of the Watershed Protection Act to establish a priority for the respective entities. Applications to appropriate water from the Sacramento River were filed subsequently by the County of Sacramento and the Solano County Water Agency.

The District has resolved the protests which were submitted by the U.S. Bureau of Reclamation (USBR), the State Water Contractors, and the City of Sacramento, and has the appropriate signed dismissal agreements.

The District is working with the cities of Woodland and Davis and UCD to process the application.

16. Cache Creek Water Appropriation Application, 1994

Following completion of the investigation referenced in Item 14. above, the District filed an application to appropriate water from Cache Creek to implement the District's proposed groundwater recharge/recovery project. The concept of the project was introduced to Yolo County in 1990, with the hope of having its features incorporated into pending gravel mining reclamation plans to assist in implementing the project. Unfortunately, project features are not incorporated in any of the current reclamation plans. This application and the application noted in Item 14. above were filed under a planning policy that water from the Sacramento River would be for municipal purposes within the District, and water from Cache Creek would be for agricultural purposes within the District. In preparing to evaluate the impact of the proposed groundwater recharge/recovery project, the District prepared the initial framework of a groundwater model. The groundwater model was prepared by the District but made available to other entities in the County for refinement to address their particular needs.

17. Natural Resource Conservation Service (NRCS) Emergency Watershed Protection Project, 1995, 1998

As the result of the damages caused by the winters of 1995 and 1998, a number of local landowners needed to use the NRCS Emergency Watershed Protection Program to repair and/or prevent further damage to their properties. At the suggestion of NRCS, those people requested the District act as the required public agency sponsor for the NRCS program and the District agreed to do so.

18. Streamflow and Weather Monitoring, 1996/1997

Due to state budget cuts, some of the programs eliminated included resource monitoring stations. The stream gage on Bear Creek, was eliminated and the same fate was planned for the stream gage on Cache Creek at Yolo. The District initiated a campaign with other entities in the County and was successful in having the DWR preserve the gage at Yolo. The District, in cooperation with the U.S. Geological Survey (USGS), reestablished the stream gage on Bear Creek.

Also, the District participated with the City of Woodland and the Office of Emergency Services (OES) to establish and maintain a weather station at the OES office in Woodland.

19. Groundwater Export Ordinance Amendment, 1997

In 1996, Yolo County adopted a Groundwater Export Ordinance to address concerns regarding the export of Yolo County's groundwater. The District worked with County staff in drafting the ordinance. Years later, the District recognized a potential problem and provided amending language to the Yolo County Board of Supervisors for consideration to address the situation of indirect groundwater transfers -- wherein surface water is transferred and the use of groundwater substituted for the surface water supply. The amendment was adopted in September 1997.

20. Elevated Crest of Indian Valley Dam, 1998

In 1998, the District elevated the crest of the Indian Valley Dam by three feet. This change, although not required, was the District's response to the reassessment of long-term hydrologic conditions of the area and statewide by the State Division of Safety of Dams. The additional height provides more freeboard, a larger margin of safety.

21. Bay-Delta Hearings, 1998

The District has been actively participating in the Bay-Delta hearing process. The District was able to negotiate a stipulation with DWR and the California Urban Water Agency/Ag (CUWA/Ag) that: (1) acknowledges that Cache Creek is not in hydraulic continuity with the Delta during balanced conditions, and (2) supports the District's request that the State Water Resources Control Board determine that the District has no obligation to provide or bypass water under its Cache Creek water rights to implement Bay-Delta standards.

22. Tamarisk and Arundo Removal

In 1992, the District cleared Tamarisk and other vegetation, as allowed by the California Department of Fish and Game from the floodway of Cache Creek to create capacity for winter flows within the creek. The District's continued concern regarding Tamarisk and Arundo was reflected in its 1997 activities regarding two grant requests and actual work done in 1998 and 1999.

23. Modification of Cache Creek Dam, 1998

In 1998, the District modified the spillway at the Cache Creek Dam by replacing the flashboard-type facility with a spill gate (metal plate) that could be raised and lowered using an inflatable rubber bladder. The modification improved the operation of the spillway making it safer and more efficient not only for controlling upstream water levels, but also for removing floating debris from the upstream side of the dam.

24. Emergency Stabilization of Guinda Bridge, 1998

In 1998, the District provided personnel and heavy equipment to provide emergency repairs to the banks of Cache Creek upstream of Guinda Bridge. The District placed rock

for two days to protect the bridge abutments that were being threatened by erosion of the creek until Yolo County was able to bring a contractor in to assume the project.

25. Resource Conservation District (RCD), Water Conservation Program, 1998, 1999

The District participates with the RCD in its Model Farm Program by providing in-kind services to assist landowners in constructing tailwater recovery systems to conserve water and minimize the amount of sediment leaving the farm.

26. Indian Valley Hydroelectric Project Acquisition, 1999

In 1999, the District purchased the Indian Valley Hydroelectric Project.

CACHE CREEK DAM

IV. District's Water Supply System

The District's water supply system consists of Clear Lake, Indian Valley Reservoir, Cache Creek, and the groundwater basin within the District.

A. WATER RIGHTS

The District is the successor of numerous water and ditch companies. Thus, it has acquired numerous water rights. Additionally, it has appropriated water rights on its own behalf and has applications for appropriations in progress. The following is a summary:

Riparian Rights -- The District owns lands on Cache Creek and the North Fork of Cache Creek that have riparian rights. These rights are used for purposes of irrigation and hydroelectric power generation.

Pre-1914 Water Rights -- The District has an 1855 priority right to divert the natural flow of Cache Creek, and 1912 priority right to store waters in Clear Lake to elevation 7.56 feet Rumsey Gage for later release and beneficial use. These rights allow for the storage of 313,000 acre-feet in Clear Lake.

Post-1914 Water Rights --

Permitted -- The District has permits for Indian Valley Reservoir which allow for the storage of 300,000 acre-feet during the winter for later release for irrigation and to generate hydroelectric power.

Applications in Process -- The District filed an application to appropriate up to 45,000 acre-feet of water from the Sacramento River, and up to 90,000 acre-feet from Cache Creek.

Groundwater -- To the extent the District imports water into an area that becomes part of the underlying groundwater, the District may claim a right to that water.

B. SURFACE WATER

1. General

This section describes the surface water supply available to lands within the District.

The District's surface water supply consists of the Clear Lake-Indian Valley and Cache Creek system within the Cache Creek watershed, which encompasses approximately 950 square miles (Map 2). Virtually all precipitation in the Cache Creek watershed occurs as rainfall. The term "system" is used because it is truly the "system" that the District manages for its water users. As experienced in 1990, the District has and will continue to have years or periods where there is no surface water supply available for its water users.

The various components of the District's water supply system are described below:

Clear Lake -- Clear Lake is a large shallow natural body of water with an area of approximately 44,000 acres when full, and has a maximum depth of approximately 50 feet. The lake is operated under the terms of the "Solano Decree" (February 1978). This decree stipulates the amount and rate by which the District can withdraw water between the limits of zero and 7.54 feet on the Rumsey Gage, which is located on the lake at Lakeport. Zero on the Rumsey Gage is regarded as the natural rim of the lake. At zero, water ceases to flow into Cache Creek. Rumsey Gage 7.54 feet is considered a "full" lake with 313,000 acre-feet of storage. The District's allowable withdrawal from Clear Lake is determined by the stage of Clear Lake on May 1. The maximum withdrawal is 150,000 acre-feet. If the stage of Clear Lake is 3.22 feet or less on the

Rumsey Gage on May 1, the District may not withdraw any water to deliver below the Cache Creek Dam that season.

Clear Lake provides no carryover storage. Therefore, the District attempts to use its full allowable withdrawal each year.

The District owns and operates Cache Creek Dam, a conservation structure constructed on Cache Creek approximately five miles downstream of Clear Lake. In 1986, the District completed construction of a hydroelectric project with a nominal capacity of 1,750 kW. Cache Creek Dam is located approximately 49 miles upstream from the District's Capay Diversion Dam.

Indian Valley Dam and Reservoir -- In 1975, the District completed construction of the Indian Valley Dam and Reservoir Project. The Indian Valley Dam and Reservoir are owned and operated by the District. The dam and reservoir are located on the North Fork Cache Creek approximately 54 miles from the Capay Diversion Dam.

When full, Indian Valley Reservoir has a surface area of 4,000 acres and a total storage capacity of 300,600 acre-feet. Forty thousand acre-feet of the reservoir storage is dedicated to flood control. Unlike Clear Lake, Indian Valley Reservoir provides carryover storage from one season to another.

In 1982, a hydroelectric project with a nominal capacity of 3,000 kW was retrofitted to the outlet works of the dam.

Cache Creek -- Downstream of Clear Lake and Indian Valley Dam and Reservoir, the most significant streams are Long Valley Creek, a tributary to the North Fork Cache Creek, and Bear Creek. As noted previously, all precipitation in the Cache Creek watershed occurs as rainfall. Thus, runoff tapers off sharply following winter and spring rainfall.

2. System Operation

The District's basic management objective of its water supply system is to utilize runoff in Cache Creek first. If the runoff in Cache Creek is not sufficient to meet irrigation demand, the District will withdraw from Clear Lake in accordance with the Solano Decree. Once the District compiles its "water orders" and estimates its seasonal demand, the District will then determine the amount of water required from Indian Valley Reservoir. Releases from Indian Valley Reservoir are made to augment releases from Clear Lake on as uniform a basis as possible.

In years when inadequate water supplies are available from Clear Lake, the District will withdraw water from Indian Valley Reservoir. Water supplies from Indian Valley Reservoir are used to meet current year demand. The facility is not operated to maximize carryover storage. Although Indian Valley Reservoir was designed to provide a firm yield of approximately 55,000 acre-feet, the District determined it was most efficient, from a water management standpoint, to operate to meet demand in a given year even though there may be no water available in subsequent years. This was the case in 1990, when the District had little or no water to deliver from Clear Lake or Indian Valley.

This operational strategy maximizes storage in the groundwater basin, which is the most efficient reservoir available to lands within the District. If Indian Valley was operated on a firm yield basis, the frequency and magnitude of flood spills would be greater than under current operations. Water "dumped" as a flood spill is essentially lost to the system. The efficiency of the District's operational strategy is illustrated using the District's operations model and varying the annual demand on the system (Table 1).

TABLE 1

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

INDIAN VALLEY FLOOD SPILLS IN RELATION TO ANNUAL SYSTEM DEMAND[1]

Item	Scenarios		
Annual System Demand, acre-feet	150,000	170,000	190,000
Indian Valley-Average Annual Flood Spill, acre-feet	31,100	21,200	13,600

[1] Based upon simulated system operations, 1922-1992.

Additionally, the District owns and operates a small community drinking water system at the Indian Valley Reservoir for the District's resident employee and the campground facilities. The system complies with Title 22 Standards with respect to operation, testing, and reporting.

3. Water Quality

With respect to water quality, the District monitors the boron concentration at various locations throughout its water supply system. The locations and an example of the range in boron concentration for a September and January sampling, are presented on Table 2.

C. GROUNDWATER

1. General

Yolo County is underlain with a substantial amount of fresh groundwater. Clendenon (1976) estimated 13,200,000 acre-feet of water in storage between 20 and 420 feet. Roughly 50 percent underlies the District.

More important than the amount of water within the groundwater basin, however, is the amount of water that can be used without adversely impacting beneficial users of the groundwater basin.

Yolo County, to a greater extent than many areas, has an extensive network of wells that are used for monitoring groundwater levels. Presented on Map 3 are the locations of groundwater monitoring wells in Yolo County and the northern part of Solano County. In addition to this extensive network, numerous wells have records dating back more than 40 years. The majority of the well readings are made twice a year, in the spring and fall. The intent of the measurements is to observe the basin in the spring before pumping for

TABLE 2

**YOLO COUNTY FLOOD CONTROL &
WATER CONSERVATION DISTRICT**

WATER MANAGEMENT PLAN

CACHE CREEK SYSTEM BORON CONCENTRATION

Location	Boron Concentration, ppm	
	September 1995	January 1996
Clear Lake at Lakeport	0.84	1.10
Clear Lake Dam Outflow	0.98	0.96
Indian Valley Reservoir	0.45	0.48
Indian Valley Dam Outflow	0.35	0.49
Bear Creek at Cache Creek	15.0	8.4
Cache Creek at Bear Creek	0.86	1.2
Capay Diversion Dam	1.0	2.2
Cache Creek at Moore Crossing	1.7[1]	3.0

[1] This is located within the gaining reach of Cache Creek, thus the water flowing in the creek at this time is groundwater draining into Cache Creek.

Source: District data-gathering program.

irrigation commences and in the fall following the irrigation season. Presented on Figures 1, 2, 3, and 4, are hydrographs for selected wells within the District and outside the District. The general location of the respective monitoring wells is presented on Map 3. These hydrographs reflect the seasonal behavior of the groundwater basin and its behavior over time. The hydrograph presented on Figure 3 reflects the overdraft that was occurring during the 1950 to 1976 period prior to the District's construction of Indian Valley Dam and Reservoir.

A monitoring program of this nature provides good information on the behavior of the basin in years of "average" or greater precipitation. In drier than "average" years, the spring measurement may not reflect the full extent of basin recovery or recharge because irrigation may have commenced earlier. Monthly well readings are helpful in this regard.

The general groundwater gradients as shown on Map 4 for the Spring 1996, are typically in an east to southeasterly direction across the District.

To provide some dimension on recharge capability and utilization of the groundwater basin, selected analyses were performed. These analyses are addressed below.

a. Seasonal Groundwater Recharge

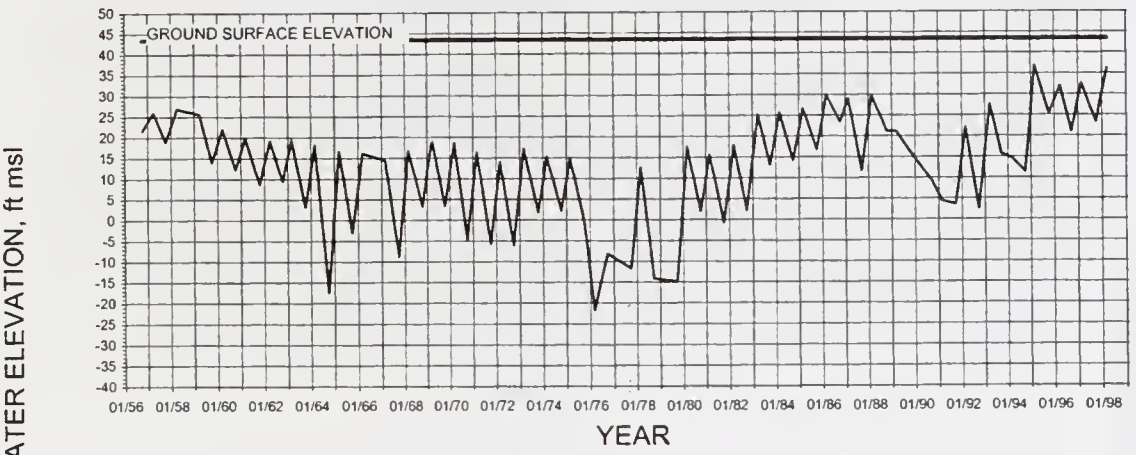
To illustrate an upper limit to the amount of recharge likely to occur in a fall to spring season, the change in groundwater storage from Fall 1977 to Spring 1978, was selected. Generally, the groundwater basin was stressed to its greatest extent during the 1976/1977 drought. The change in groundwater levels through this period is shown on Map 5. The magnitude of recharge within the District is on the order of 250,000 acre-feet, or approximately 1.25 acre-feet/acre.

YOLO COUNTY FLOOD CONTROL &
WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

WATER LEVEL HYDROGRAPHS

WELL NO. 12N/01W-14M01



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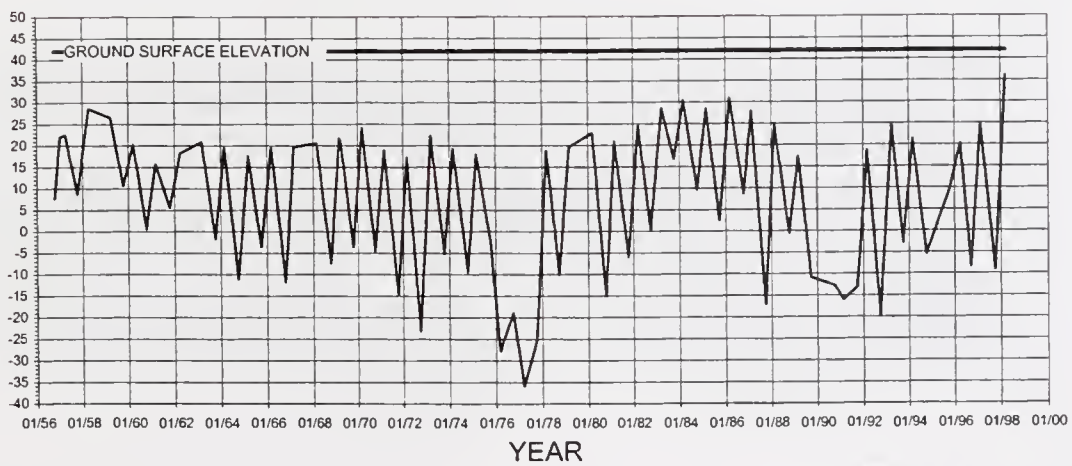

BORCALLI ASSOCIATES INC.

FIGURE 1

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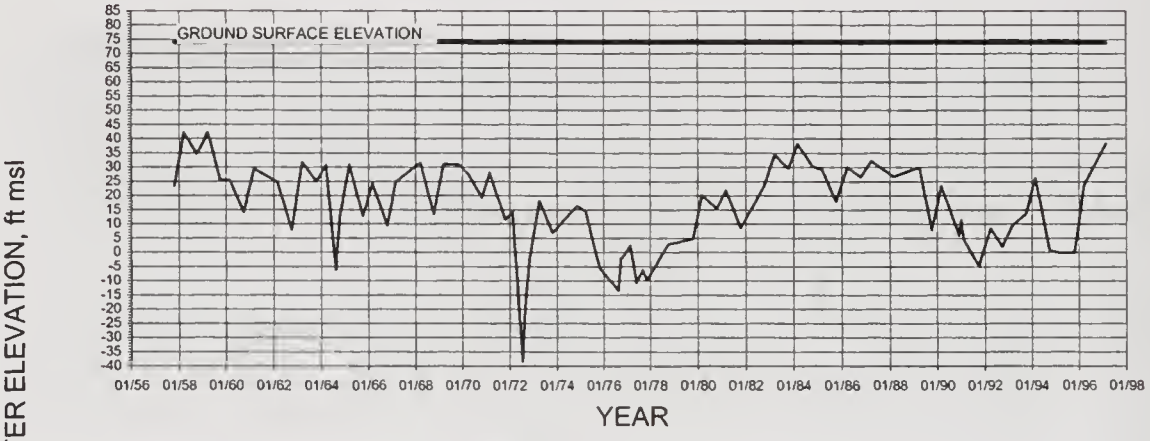
YOLO COUNTY FLOOD CONTROL &
WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

WATER LEVEL HYDROGRAPHS

WELL NO. 10N/02E-18M01



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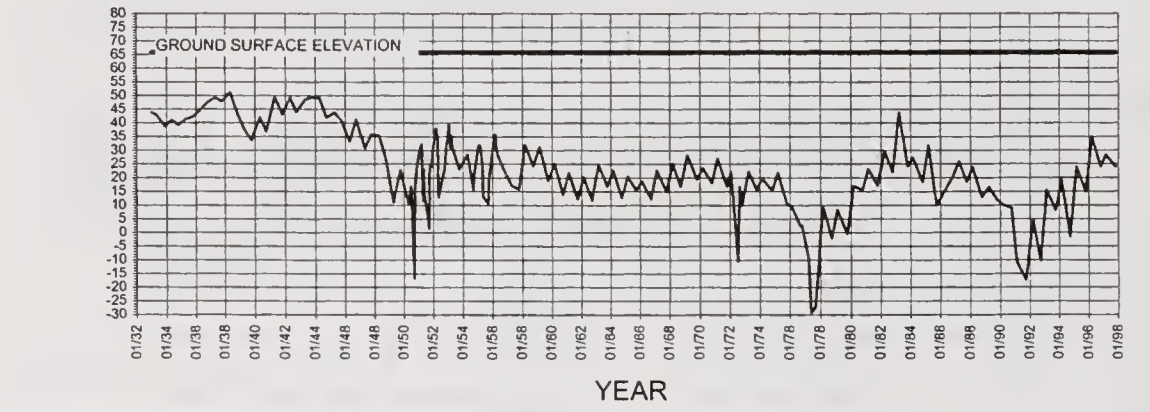

BORCALLI
ASSOCIATES, INC.

FIGURE 2

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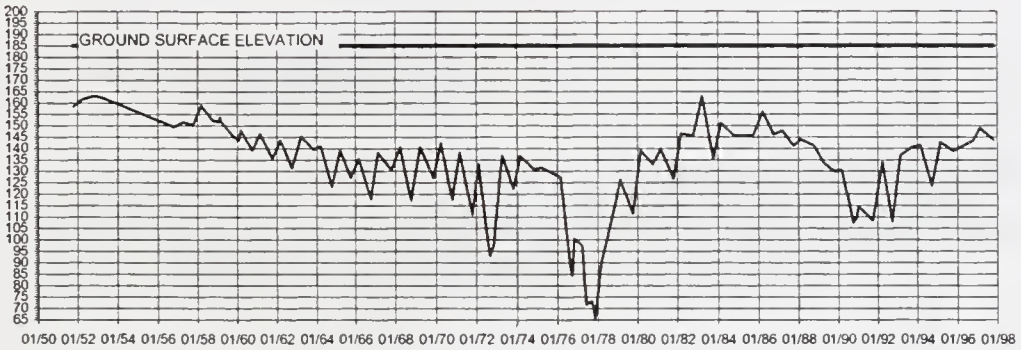
YOLO COUNTY FLOOD CONTROL &
WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

WATER LEVEL HYDROGRAPHS

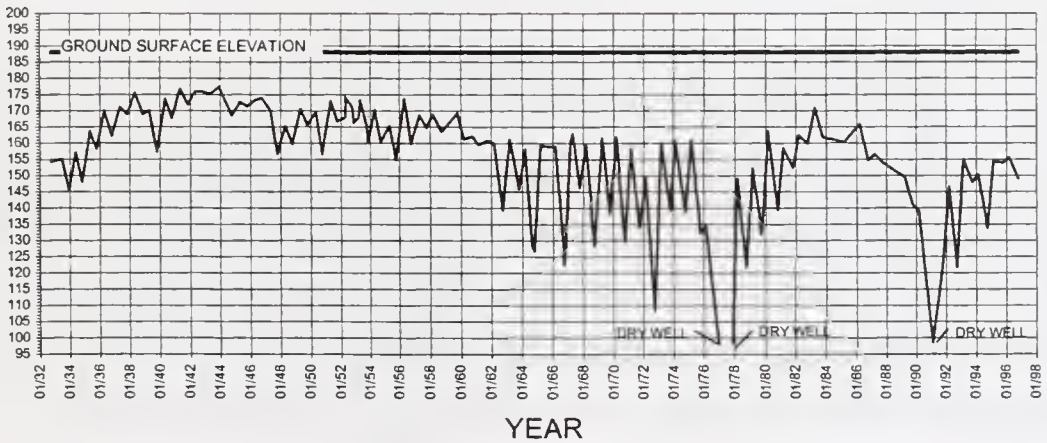
WELL NO. 10N/01W-05E01



YEAR

GROUNDWATER ELEVATION, ft msl

WELL NO. 10N/01W-18E01



YEAR

BORCALLI ASSOCIATES, INC.

FIGURE 3

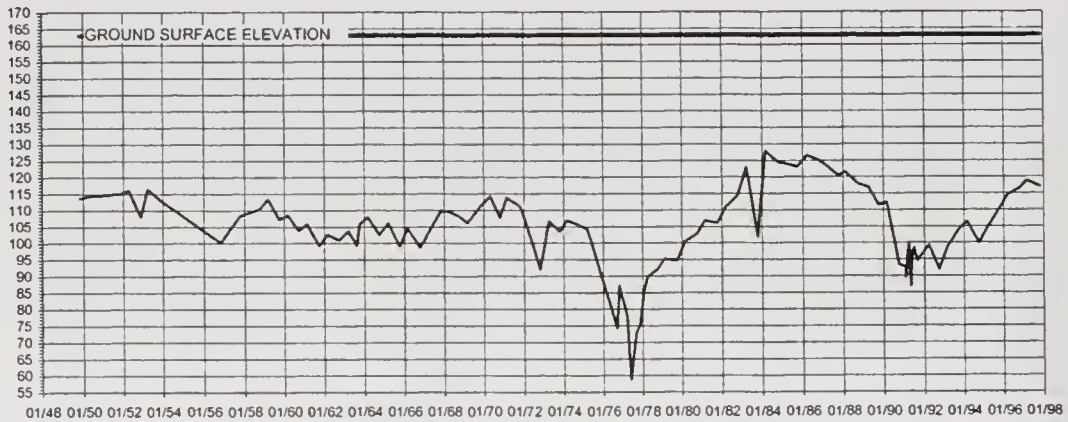
H:\Engdocs\Projects\108-25\Well Data\Well Data xls

YOLO COUNTY FLOOD CONTROL &
WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

WATER LEVEL HYDROGRAPHS

WELL NO. 08N/01W-09C01



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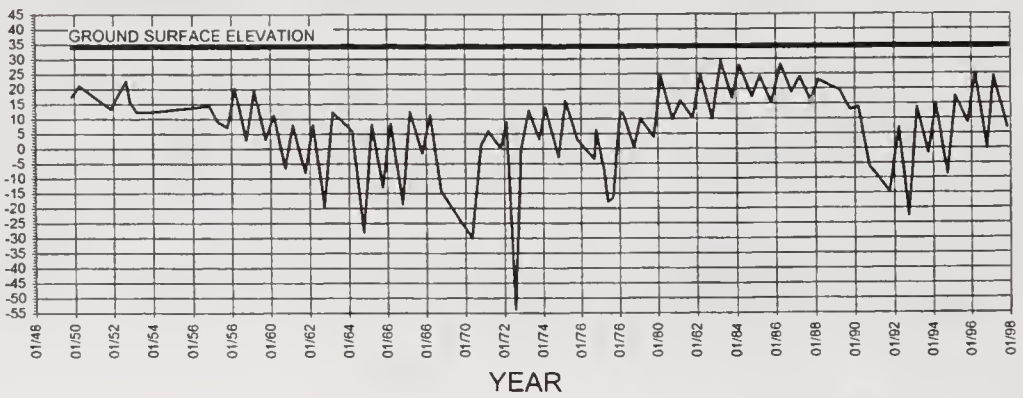


BORCALLI ASSOCIATES INC.

FIGURE 4

b. Groundwater Basin Depletion During Drought

To put the groundwater basin capacity into perspective, two situations are examined below. The first situation is the estimated amount of groundwater depletion during the most recent drought from Spring 1986 to Fall 1990. The second situation is the estimated groundwater storage capacity within the range to which the basin has been stressed. The level in Spring 1986 to the level in Fall 1977, is used for this purpose.

- The most severe drought experienced since Indian Valley Dam and Reservoir became fully operational began in the winter of 1986/1987. The overall groundwater basin depletion within the District from Spring 1986 through Fall 1990 (Map 6), was approximately 460,000 acre-feet, or approximately 2.09 acre-feet/acre.

- In the Fall 1977, the driest year of record, the overall groundwater basin was drawn down approximately 20 feet lower than in the Fall 1990. The estimated depletion or storage capacity represented by the difference in groundwater levels between Spring 1986 and Fall 1977, was about 700,000 acre-feet or about 3.5 acre-feet/acre.

c. Groundwater Basin Storage Enhancement

The District's construction of Indian Valley Dam and Reservoir in 1975, clearly enhanced groundwater storage within the District. The impact is very graphic in the well hydrographs. Agricultural and municipal users of groundwater, directly and indirectly, have benefitted significantly from the water supply contribution made by the District's operation of Indian Valley Dam and Reservoir. In 1987, DWR reported "the large recovery (in groundwater levels) in Yolo County is partly due to new surface water supplies from Indian Valley Reservoir."

2. Water Quality

The District does not routinely monitor the quality of groundwater. Outside the cities, the monitoring of groundwater quality is limited and intermittent, thus data for the detection of trends or changes in groundwater quality is not available.

Boron in groundwater in the lower Cache Creek area ranges from 2 to 3 ppm. The source of boron was determined by the USGS to be from Cache Creek as opposed to upwelling from deeper stratum.

Detailed water quality testing is performed by the cities and UCD. Woodland has experienced nitrate contamination in certain wells. The City of Davis has experienced selenium contamination.

In January 1999, the Central Valley Regional Water Quality Control Board reported several sites in Davis, Woodland, West Sacramento, and Dunnigan with MTBE contamination. The District exercises no regulatory authority for handling groundwater contamination. This is handled by the state and county.

Although DWR performs some water quality tests outside the cities, the quality of groundwater is not well documented.

3. Intrusion of Saline Water

The intrusion of saline or brackish water into what was historically freshwater is generally thought to be associated with coastal areas (e.g., the Salinas Valley). However, the intrusion of saline or brackish water could occur in the Sacramento Valley, including eastern Yolo County.

As shown on Map 7, the base of freshwater (less than 2,000 mg/l dissolved solids) is at an elevation of -2400 to -2800 feet mean sea level. New wells for agriculture within the District are generally being developed to depths of 500-600 feet. The City of Davis is developing wells for municipal supply to depths of 1,400 and 1,000 feet. UCD has also developed wells to depths of 1,200 to 1,400 feet.

As a result of water supplies developed or acquired by special districts and the private sector, Yolo County has been able to meet its water demands without significant depletion or lowering of its groundwater basin. To the extent the groundwater basin is not stressed beyond the limits already experienced, the probability of groundwater supplies being contaminated from upwelling of saline water is small. To what extent groundwater levels would have to be lowered to initiate upwelling of saline water is not known. Evidence of this type of occurrence, however, is illustrated through cross sections developed for South Sacramento County. In this area, the persistent lowering of the groundwater basin has allowed saline water to upwell significantly. This information is presented in Appendix A.

4. Groundwater Recharge

Groundwater recharge within the District occurs from percolation of rainfall, applied irrigation water, water flowing in Cache Creek, and water flowing in Putah Creek. To the extent the pumping of groundwater by the cities of Woodland and Davis create a pumping depression, recharge occurs from the east Yolo Bypass area also.

Relative contributions of each are presented on Table 3.

The information on Table 3 is presented to merely reflect relative orders of magnitude as it may be helpful in assessing priorities when directing attention to protecting the groundwater basin water quality and augmenting quantity as well.

TABLE 3

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

SOURCES AND RELATIVE AMOUNTS OF GROUNDWATER RECHARGE

Source	Amount	
	feet	percent
Cache Creek	0.10	8
Rainfall	0.50	40
Applied Irrigation Water	0.50	40
Canal Seepage	0.15	12
Subsurface Inflow-Subsurface Outflow[1]	0	0
TOTAL AVERAGE RECHARGE	1.25	100

[1] Subsurface inflow is assumed to equal subsurface outflow.

Areas within the District where groundwater conditions can be enhanced are limited. To identify areas where potential may exist for groundwater level enhancement, the depth to groundwater was mapped for Spring 1996. Areas where the depth to ground-water are 20 feet or more are highlighted on Map 8. From inspection of Map 8, it appears the areas where groundwater conditions could be enhanced are in the general vicinity of Davis, Woodland, and the Hungry Hollow within the District. Outside the District, the areas of Yolo-Zamora and Dunnigan appear to have potential for groundwater level enhancement.

Although areas along the margin of Putah Creek are highlighted, there is no opportunity for effective groundwater level enhancement. Raising groundwater levels along Putah Creek will result in water draining to Putah Creek, and groundwater flow to Solano County would be increased.

5. Well Construction and Abandonment

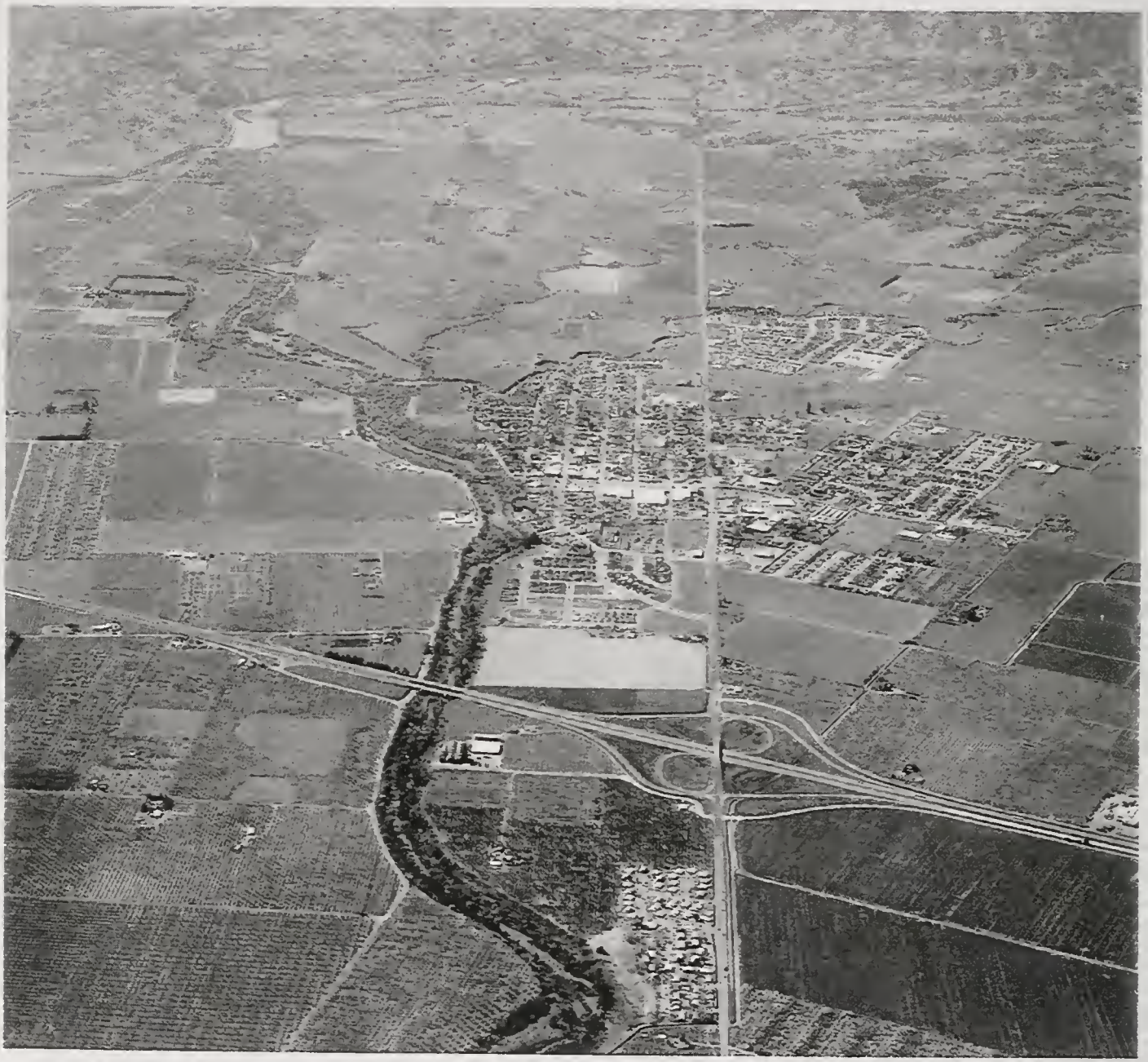
The District exercises no regulatory authority in the construction and abandonment of wells. The construction and abandonment of wells in Yolo County is regulated by Yolo County.

6. Subsidence

Land subsidence, due to groundwater extraction, is documented along the east side of Yolo County from Davis to an area east of Zamora. Subsidence between Zamora and Knights Landing is reportedly to be nearly five feet and in the vicinity of Davis and Woodland, two to three feet. There are two extensometers installed in Yolo County. One extensometer is located east of Zamora and the other is east of Woodland near the west levee of the Yolo Bypass. The latter was installed as part of the monitoring program negotiated as a condition of water transfers during the DWR water bank.

More recently, interested agencies of the WRA, including the District, formed a subsidence monitoring group. The purpose of the group is to develop a network of monuments throughout the valley portion of Yolo County and, using GPS technology, establish the elevation, latitude, and longitude for each monument and horizontal as well and vertical relationships between monuments. The data will be stored in the UCD computer and made available to the public and other agencies. The network will be monitored as deemed appropriate by the group to document subsidence. This network includes the extensometers mentioned earlier.

CITY OF WINTERS (LOOKING WEST)



V. Water Use

This section provides a general description of water use within the District for municipal and agricultural purposes.

A. LAND USE

Water use in the District is a function of land use and relative wetness within a given year. Land use with respect to agriculture is influenced by the economics of a particular crops and in response to "dry" winters as well as "wet" winters and springs.

Available land use information has been compiled by DWR. Land use surveys have been completed by DWR for the years of 1961, 1973, 1976, 1981, and 1989. Also, in April 1999, DWR completed compilation of its 1998 land use survey for Yolo County. This information will be available in electronic format, however, it was not available in time to incorporate into this document.

A summary of land use within the District in 1981 and 1989, upstream and downstream of the District's Capay Diversion Dam, is presented on Table 4 and Table 5. For comparative purposes, a summary of agricultural land use is shown on Table 6 for the District and Yolo County. As shown, in 1989, irrigated land in the District represented approximately 40 percent of the total for Yolo County.

Presented on Table 7, is a summary of urban land use within the District and Yolo County in 1989. As shown, urban land within the District represents nearly 63 percent of the total urban land in Yolo County.

TABLE 4

YOLO COUNTY FLOOD CONTROL &
WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

SUMMARY OF LAND USE: 1981, 1989
UPSTREAM OF CAPAY DIVERSION DAM
(acres)

Land Use	1981		1989	
	Irrigated	Nonirrigated	Irrigated	Nonirrigated
Agriculture Grain	1,443	4,029	1,392	448
Rice	0	0	0	0
Field	474	0	108	0
Pasture	976	0	661	6
Truck	174	0	802	0
Orchard	3,412	545	3,307	433
Fruits	5	0	4	0
Vineyard	0	0	4	0
Fallow	0	500	670	3,541
Intercropped	36	0	75	0
Double Cropped	178	0	0	0
Subtotal	6,699	5,074	7,023	4,428
Semi-agricultural	18	1,446	517	1,000
Native Vegetation	0	8,535	0	8,821
Riparian Vegetation[1]	0	0	0	0
Suburban Residential	0	0	0	0
Water Surface		411		371
Urban	0	18	0	47
TOTAL	6,717	15,484	7,540	14,667

[1] Estimates of riparian vegetation are available through the Yolo County Planning Department.

Source: California Department of Water Resources.

TABLE 5

YOLO COUNTY FLOOD CONTROL &
WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

SUMMARY OF LAND USE: 1981, 1989
DOWNSTREAM CAPAY DIVERSION DAM
(acres)

Land Use	1981		1989	
	Irrigated	Nonirrigated	Irrigated	Nonirrigated
Agriculture Grain	36,614	12,602	43,776	4,198
Rice	6,238	0	703	0
Field	24,677	373	18,431	260
Pasture	12,136	0	18,146	90
Truck	27,122	0	29,107	0
Orchard	10,303	172	10,099	112
Fruits	43	0	105	0
Vineyard	235	10	580	0
Fallow	39	1,237	6,280	8,746
Intercropped	524	67	543	4
Double Cropped	8,833	0	1,551	0
Subtotal	126,764	14,461	129,321	13,410
Semi-agricultural	763	7,756	6,999	3,276
Native Vegetation	0	14,332	0	11,964
Riparian Vegetation[1]	0	0	0	0
Suburban Residential	0	0	0	123
Water Surface		481		604
Urban	0	14,439	0	16,629
TOTAL	127,527	51,469	136,320	46,006

[1] Estimates of riparian vegetation are available through the Yolo County Planning Department.

Source: California Department of Water Resources.

TABLE 6

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

AGRICULTURAL LAND USE, 1989: IRRIGATED AND NONIRRIGATED

Location	Irrigated Area		Nonirrigated Area	
	acre	% of County	acre	% of County
District				
Upstream of Capay	7,000	2.1	4,400	7.3
Downstream of Capay	129,300	38.8	13,400	22.3
Total	136,300	40.9	17,800	29.6
Yolo County	333,700	100.0	60,000	100.0

Source: DWR Land Use Survey.

TABLE 7

URBAN LAND USE, 1989

Location	Area, acres	Area, percent
Within District	16,629	62.7
All of Yolo County	26,544	100.0

1. Land Use Planning

The District has no authority or responsibility regarding land use planning. This is the responsibility of the county and cities. Accordingly, it is the responsibility of the county and cities to assess existing and proposed land uses from the standpoint of land use impacts on groundwater supplies and contamination. The District reviews proposals for changes in land use and offers comments relative water use, flood control, and drainage to the county and cities in Lake and Yolo counties.

B. WATER USE

1. Agricultural

DWR, in its compilation of land use for 1989, also identified the source of water for irrigating individual fields. The fields were identified as being irrigated with surface water, groundwater, and both surface water and groundwater. Presented on Table 6, is a summary of land use and source of water. Inspection of Table 8 shows that the land irrigated with surface water and groundwater within the District is nearly 50-50. In years when the District has little or no surface water available, virtually all irrigation will be with groundwater supplies. For Yolo County as a whole, only about 36 percent of the land is irrigated with groundwater (Table 9).

Using the land use information presented by DWR for 1976, 1981, and 1989, an estimate of water use was made. Water use for the years of 1976 and 1989 was treated as dry years, and 1981 as an average year. The difference between wet and dry hydrologic conditions is in the amount of rainfall effectively available to meet the crop consumptive use. Presented on Table 10, is a summary of the estimated total water use for irrigation in Yolo County and the District for the three years noted above. The unit water use for the same three years is presented on Table 11. Based upon the figures presented on

TABLE 8

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

AGRICULTURAL LAND USE AND SOURCE OF IRRIGATION: 1989

Land Use	Source of Irrigation Water		
	Groundwater Only	Surface Water Only	Surface Water and Groundwater[1]
Agriculture			
Grain	18,429	19,525	7,267
Rice	31	357	315
Field	6,053	9,830	2,428
Pasture	6,404	9,901	2,665
Truck	9,707	9,362	10,753
Orchard	7,690	4,039	1,677
Fruits	52	57	0
Vineyard	391	248	0
Fallow	3,531	3,363	56
Intercropped	373	245	0
Double Cropped	433	408	561
Subtotal	53,094	57,335	25,722
Semi-agricultural	3,422	3,949	125
TOTAL	56,536	61,284	25,847

[1] Land using surface water and groundwater.

Source: DWR Land Use Survey.

TABLE 9

YOLO COUNTY FLOOD CONTROL &
WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

SOURCE OF AGRICULTURAL WATER: DISTRICT
COMPARED WITH YOLO COUNTY - 1989

Location	Source of Irrigation Water					
	Groundwater		Surface Water		Surface Water and Groundwater[1]	
	area	percent	area	percent	area	percent
Within District	56,536	53.2	61,284	32.2	25,847	70.5
All of Yolo County	106,350	100.0	190,600	100.0	36,675	100.0

[1] Land using surface water and groundwater.

TABLE 10

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

TOTAL WATER USE FOR IRRIGATION: 1976, 1981, 1989[1] YOLO COUNTY AND DISTRICT

Year	Yolo County		District	
	Irrigation Application Total, ac-ft	Return Flow[2] Total, ac-ft	Irrigation Application Total, ac-ft	Return Flow Total, ac-ft
1976	1,025,000	279,000	381,000	101,700
1981	954,000	276,000	341,500	98,200
1989	1,019,000	276,000	377,600	100,900

[1] Based upon crop acreage compiled in DWR's respective land use surveys.

[2] Return flow is applied irrigation water that percolates below the crop root zone and enters to the groundwater basin or flows from the farm field into a drain and is recovered or recoverable for irrigation on a downstream field.

TABLE 11

UNIT WATER USE FOR IRRIGATION: 1976, 1981, 1989[1] YOLO COUNTY AND DISTRICT

Year	Yolo County		District	
	Irrigation Application Total, ft	Return Flow[2] Total, ft	Irrigation Application Total, ft	Return Flow Total, ft
1976	3.29	.87	2.97	.79
1981	3.00	.87	2.67	.77
1989	3.22	.87	2.91	.78

[1] Based upon crop acreage compiled in DWR's respective land use surveys.

[2] Return flow is applied irrigation water that percolates below the crop root zone and enters the groundwater basin or flows from the farm field into a drain and is recovered or recoverable for irrigation on a downstream field.

Table 10, the amount of water applied for irrigation within the District represents approximately 37 percent of the total water applied for agriculture in Yolo County.

2. Urban

Urban water use within the District is largely within the cities of Davis, Woodland, and Winters, and UCD although there is urban-type water use within the communities of Esparto, Madison, Capay, and others in the Capay Valley. Presented on Table 12, is the estimated urban water use within the District and West Sacramento, which is the principal urban area in Yolo County outside of the District. As shown on Table 12, 75 percent of the water use in Yolo County occurs within the District. All of the urban demand within the District is provided from groundwater.

C. WATER USE EFFICIENCY

Water use efficiency is addressed below from the standpoint of the District as a system and at the farm level.

1. System Efficiency

Essentially all water delivered by the District for irrigation is diverted along Cache Creek in Capay Valley and at the District's Capay Diversion Dam. Operational spills occur at the District's Capay Diversion Dam and within the District's water delivery system. Operational spills that occur at Capay Dam in the summer will generally percolate to the groundwater basin before reaching Interstate 505. Operational spills that occur along the District's distribution system discharge into sloughs or drains and are recovered and reused by the District and individual landowners.

TABLE 12

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

URBAN WATER USE[1]

City	Amount	
	ac-ft/yr	percent
District		
Davis	12,500	32.9
Winters	1,000	2.6
Woodland	13,000	34.2
University of California	2,300	6.1
Subtotal	28,800	75.8
West Sacramento	9,200	24.2
TOTAL	38,000	100.0

[1] Estimates 1996 from Water Resources Association, Water Resources Management Committee, 1996.

The water diverted into the District discharges as surface flow through Cache Creek and the Willow Slough Bypass and as subsurface flow under Putah Creek into Solano County.

With respect to surface water, water flowing out of the District through Cache Creek, or the Willow Slough Bypass, water flowing in Cache Creek during the summer months is agricultural return flow that enters Cache Creek as surface drainage, subsurface flow, or a combination of both. The boron concentration of this water in Cache Creek is generally high (3 ppm or greater) as measured by the District at the Moore Canal Siphon. As the water is "resurfacing" groundwater, it represents the quality of the shallow groundwater in the vicinity of Cache Creek. Water flowing out of the District via the Willow Slough or North Davis Drain, on visual observations, is small. Although readings of a stream gage at the County Road 102 Bridge were recorded at one time, currently no data is being gathered for the Willow Slough.

With respect to groundwater flowing out of the District, the delivery of water by the Solano Irrigation District (SID) since the early 1960s, has served to alter groundwater gradients near Putah Creek. Prior to SID's delivery of water from the Solano Project, the groundwater gradients in the vicinity of Winters were in a south easterly direction. The delivery of water by SID relieved the overdraft that was occurring in Solano County, thereby significantly raising groundwater levels. The result was beneficial for Yolo County in that the groundwater gradients now tend to flow in a more easterly direction towards Davis. Groundwater pumping by Davis, Woodland, and the intervening agricultural areas have reversed the historic west to east gradient, thereby curtailing the subsurface flow out of the District along its eastern boundary.

In summary, although not quantified, the amount of water leaving the District is small and that which flows out via Cache Creek is high in boron. Thus, as a system, the efficiency of water use within the District is judged to be high, although undocumented.

2. On-farm Efficiency

Both the NRCS and RCD are engaged with the farming community in programs to improve irrigation efficiencies, manage water quality impacts, reduce field and channel erosion, and restore wildlife habitat. Land-leveling to improve irrigation and farm efficiencies is extensive as well. The construction of tailwater recovery systems through the RCD's Model Farm Program is successful and requests for assistance exceeds available resources. As noted in a previous section, the District participates with in-kind services to support this program. Although there is a great deal of activity aimed at improved water management at the farm level, information to quantify it is extremely limited.

D. SUMMARY

In the future, water use within the District will be influenced most by cropping patterns and urban growth. Over the long term, the efficiency of use of water from the Cache Creek watershed can be increased by the following:

- Increasing the capture of the "unmanaged" water flowing out of or through the District.

- Increasing the use of the District's water supply, thereby increasing the magnitude of in-lieu groundwater recharge and incrementally reducing the amount of water flowing from Indian Valley Reservoir as a "flood spill."

CAPAY DAM (LOOKING UPSTREAM ON CACHE CREEK)

VI. District's Water Delivery System

This section provides a general description of the District's water delivery system.

A. GENERAL

The District's water delivery system consists of the Capay Diversion Dam on Cache Creek and the extensive network of canals and laterals served from the District's two main canals, the Winters Canal and West Adams Canal. The headworks for each is an integral part of the Capay Diversion Dam. In total, the District's system includes over 175 miles of irrigation and drainage facilities.

The major portion of the District's water delivery system is earthen or unlined channels. The uppermost reaches of the Moore Canal, the Winters Canal, and the West Adams Canal are lined with concrete.

B. EFFICIENCY

The District operates and maintains an extensive conveyance and distribution system comprised of earthen canals. Losses from this system, as seepage and evaporation, vary from year to year, but has ranged from 15 to 65 percent from 1970 to 1996 (Table 13). The greatest part of the losses is the result of seepage and percolation along the canals and laterals. It is important to note, however, that the major part of these losses are recoverable from the groundwater basin.

Over the years, various parties have suggested that the District should concrete-line its water delivery system to minimize seepage losses. From the standpoint of managing the water supply available from the Cache Creek system, lining the District's water delivery system is not deemed to be a prudent water management measure.

TABLE 13

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

SUMMARY OF DISTRICT WATER SERVICE OPERATIONS: 1970-1996[1]

amount, ac-ft

Year	Diverted	Sold	Difference, %[2]
1970	126,532	101,100	20.10
1971	157,013	112,133	28.58
1972	77,428	53,309	31.15
1973	144,215	110,645	23.28
1974	136,201	110,767	18.67
1975	138,498	117,257	15.34
1976	104,114	74,279	28.66
1977	0	167	N/A
1978	162,898	109,372	32.86
1979	173,269	127,144	26.62
1980	155,625	109,782	29.46
1981	185,396	139,890	24.55
1982	159,561	120,617	24.41
1983	117,239	78,906	32.70
1984	194,963	146,335	24.94
1985	180,835	135,343	25.16
1986	147,510	107,320	27.25
1987	190,576	141,594	25.70
1988	184,738	133,158	27.92
1989	143,882	79,829	44.52
1990	0	0	N/A
1991	95,180	32,540	65.81
1992	63,738	25,339	60.25
1993	149,598	106,197	29.01
1994	131,948	82,119	37.76
1995	151,846	119,655	21.20
1996	169,477	132,262	21.96

[1] Below Capay Diversion Dam.

[2] The difference represents canal seepage, evaporation, and tailwater flowing from the District.

With the current demand on the District's water supply system, the lining of canals and laterals would result in more water stored in Indian Valley Reservoir, thereby increasing flood releases from the reservoir. At the same time, it would eliminate an increment of groundwater recharge. From a water management standpoint, only when the demand on the District's water supply system has increased to the point where flood releases were nearly eliminated should the lining of canals and laterals be considered. At that time, the economics of lining canals and laterals in relation to the cost of pumping groundwater would have to be evaluated.

C. OPERATION

The District's water delivery system is operated as a "demand" system, as opposed to a "rotation" system. This manner of operation is the most efficient in terms of water management. The District delivers water at the request of the farmers. Thus, water is delivered when it is needed. This type of operation facilitates the most efficient use of water for irrigation.

Also, water that may flow past the end of a canal or lateral may be retrieved in a downstream section of the District's system or sold in a downstream slough. The same is true of tailwater from farm fields. Excess applied irrigation water that does not percolate and runs off the end of a farm field is recovered and reused. Thus, very little water of suitable quality leaves the District.

CITY OF DAVIS (LOOKING WEST)

VII. Agency Coordination

This section addresses the past and present activities of the District with respect to coordination at the local level and also at the level of federal and state government.

A. COORDINATION AT LOCAL LEVEL

The District has actively supported the coordination of meaningful data gathering and water management activities within Yolo County. The District was a major proponent of the effort to prepare the "Yolo County Water Plan 1984." The District and Yolo County shared 50-50 in funding the work. The District was an active participant in ICOR, the Interagency Water Management Coordinating Group that emerged following the 1984 Water Plan.

In 1991, when the USBR was in the process of preparing an Environmental Impact Statement for marketing what was thought to be the remaining yield of the Central Project, the District recognized that a coordinated effort on the part of Yolo County purveyors was needed to protect their interests. The District took the lead to organize the Yolo County Water Group[1] to request water from the USBR and to investigate alternatives for supplemental water supplies for water purveyors in Yolo and Solano counties. It was not long after the USBR initiated its work, however, that it realized it had no water for additional water service contracts. The Yolo County Water Group worked with the Solano County Water Authority and investigated supplemental water supplies jointly.

[1] The Yolo County Water Group was an informal association of agencies in Yolo County involving the District, the City of Davis, the City of Winters, and the City of Woodland, the University of California at Davis, and the Yolo-Zamora Water District.

From the investigation of supplemental water supplies, it was determined that supplemental water was available in the Sacramento River by virtue of provisions embodied in the Watershed Protection Act. In view of the relatively high cost for diversion and conveyance facilities to use the water, it was acknowledged that any water appropriated from the Sacramento River would not be affordable for agricultural use and, thus, would serve as a municipal water supply only. At the same time, it was acknowledged that supplemental water supplies that could be developed through the District's proposed Cache Creek Groundwater Recharge/Recovery Project would be allocated to agricultural use.

Understanding the urgency with respect to securing a priority position for appropriating water, the District filed an application to appropriate 45,000 acre-feet of water from the Sacramento River. The application was filed naming the cities of Davis and Woodland, and UCD as beneficiaries of the appropriation. The City of Davis and UCD have applied for a grant to fund a feasibility study to assess the opportunities afforded by this potential water supply. The City of Woodland has also submitted a grant request for the same purpose. Although the grant applications are separate, the respective parties and the District meet periodically to keep apprised of each agency's activities, to increase the opportunity for working together and to avoid conflicts.

In 1992, when DWR established the Drought Water Bank, the District actively addressed concerns with the proposed transfers by drafting terms and conditions for a water transfer agreement. The document was provided to Yolo County and subsequently adopted by the County for use with the Conaway Ranch water transfers.

In 1991, six years following completion of the first Yolo County Water Plan, the District, working with other purveyors in the County, jointly funded the update of the 1984 Water Plan. The updated Water Plan was supported by the participating agencies and adopted by the Yolo County Board of Supervisors in February 1993.

Following adoption of the updated Water Plan, work was initiated on drafting the bylaws for the WRA, for the primary purpose of facilitating the coordination of water-related activities in Yolo County. The District was an active participant in this process.

Recently, interested member agencies of the WRA, including the District, formed a team to establish a subsidence monitoring project. The purpose of the project is to develop a grid of monuments throughout the valley portion of Yolo County and, using GPS technology, establish the ground elevations, latitude and longitude for each monument, and horizontal as well as vertical relationships between monuments. The baseline data from the 1999 effort will be stored on the computer system at UCD. Eventually, it is proposed to be stored in Yolo County's GIS computer. The grid will be monitored in the future based upon the demand for this type of information to monitor subsidence, to analyze drainage and flood control issues, and other issues requiring this type of data. The data will be available to the public and other agencies.

The District keeps in close contact with the Yolo County OES during periods of heavy rainfall or runoff. It also provides information to the Lake County OES and/or the Lake County Flood Control and Water Conservation District.

The District has cooperated with the Yolo County Resources Conservation District on numerous projects such as the Willow Slough Watershed Integrated Resources Management Plan co-sponsored by the California Wildlife Conservation Board, the Model Farm Project resulting from a USBR Challenge Grant, and a Water Quality and Irrigation Ecosystem Management Project resulting from a grant from the State Water Resources Control Board.

The District helped develop and supported a grant request by the Cache Creek Conservancy for a long-term research project to establish the most effective method of removing Tamarisk and revegetating an area, and to develop and implement an educational process to inform public agencies and the general public regarding the problems identified with the species. The District also submitted an independent and complementary grant proposal to provide for the

immediate removal of Tamarisk at Cache Creek and Interstate 5, where the flood-carrying capacity had been significantly reduced by Tamarisk.

In 1989, the District organized the formation and first meeting of the Water Awareness Committee of Yolo County. The composition of the committee has varied over the years, including the cities of Davis, West Sacramento, Winters, and Woodland, the County of Yolo, the Dunnigan Water District, the Yolo-Zamora Water District, the Natural Resources Conservation Service, PG&E, and Project H.A.W.K. In the past, the committee usually conducted activities centered on May as Water Awareness Month by producing a newspaper insert, conducting a countywide poster contest, providing potable water for a bike ride event, and providing a tour or other educational opportunity.

As previously mentioned, since 1992, the District has been involved in a joint venture with the Yolo County Office of Education in Project H.A.W.K. and associated projects. The District has provided an area, manpower, and materials to facilitate students and teachers experiencing first-hand educational opportunities provided by the Cache Creek Watershed.

The District also coordinates with the Yolo County Office of Education to create displays for the Yolo County Fair, providing an educational booth focusing on some aspect of water, agriculture, or natural resources.

B. COORDINATION AT STATE AND FEDERAL LEVEL

Since 1967, the District has coordinated with DWR and the USBR in transferring groundwater data, twice annually, from 153 wells in Yolo County. DWR and the USBR incorporate the District's data into its own database, which is then available for public distribution.

On a daily basis, the District provides the U.S. Army Corps of Engineers information regarding storage, inflow, and discharges at the Indian Valley Reservoir. On a weekly basis,

the same information from Indian Valley Reservoir and Clear Lake is provided to DWR. During winter storm events, every change of discharge is coordinated with the Corps' operations.

The District coordinates with the Federal Energy Regulatory Commission (FERC) to conduct tests involving two federal agencies, four state agencies, and nine local agencies of offices of the District's Emergency Action Plan (EAP) related to the Indian Valley Reservoir.

The District coordinates with the Division of Safety of Dams (DSOD) and FERC regarding annual inspections at both the Cache Creek Dam and the Indian Valley Dam.

In 1995 and 1998, the District worked with the U.S. Natural Resources Conservation Service to use its Emergency Watershed Protection Program to repair and/or prevent damages to District and private properties as the result of winter storms. Regarding the work on private property, at the request of the landowners, the District agreed to act as the public agency sponsor required by the program. One of these projects brought Caltrans in as an additional participant. All the projects required coordination with the State OES.

In 1998, the District called the attention of Caltrans to potential problems due to sediment partially blocking culverts under Interstate 505 and Highway 16. Since Caltrans did not have the proper equipment available to handle the problem, the District worked with Caltrans providing equipment for its use.

The District coordinates with the USGS to operate and maintain numerous gages and reporting stations. However, the District also keeps in touch with DWR regarding the operation and maintenance of the Cache Creek stream gages at Yolo and Rumsey.

The District has requested the assistance of and cooperated with the U.S. Army Corps of Engineers in performing feasibility studies for flood control and environmental restoration along Cache Creek.

The District coordinates with the California Division of Water Rights to address the legal protection of the District's existing water rights in the context of junior water appropriators' water rights.

The District, for and in behalf of itself and its water users, provides input to various legislators regarding bills and actions that could adversely impact the District, its water supply, or Yolo County.

Due to the extensive damages to the District's facilities from the recent declared flood disasters, the District has for the first time had to coordinate with the Federal Emergency Management Agency and the State OES to repair millions of dollars worth of damage.

CITY OF WOODLAND (LOOKING WEST)

VIII. Water Management Activities

Presented in this section is a brief description of activities the District is currently involved in, which falls into the general category of *Water Management*. Some activities were addressed earlier, but are summarized again in this section to provide a complete listing of the District activities.

A. WATER RIGHTS PROTECTION

The District's highest priority is to protect its existing water rights. The District is determined to defend its water rights against proposals or projects that could jeopardize any part of its water supply, no matter how large or small the impact. The District receives and reviews every notice from the State Board for projects within the Cache Creek watershed. Every notice that could adversely impact the District's water rights is responded to by the District to assure the District's water rights are protected. In 1983, the District began to actively pursue water contracts with upstream appropriators and municipalities that were diverting water from Clear Lake or its tributaries, and continues to track activities that could affect the District's water rights anywhere within Colusa, Lake, and Yolo counties. By way of illustration, in 1998, the District successfully settled out-of-court with a water bottling enterprise in Lake County that was diverting water from a tributary to Clear Lake and transporting the water out of the watershed.

In 1979, as the result of a dispute over whether the water being diverted by Cache Creek riparians throughout the irrigation season was natural flow (riparian water) subject to riparian use or the District's stored water, the District and riparian landowners on Cache Creek negotiated a settlement agreement resolving the issue of riparians rights to divert Cache Creek water and the District's right to charge for water diverted.

In addition, the District successfully gained the acknowledgment of DWR and the State Water Contractors in the Bay-Delta Proceedings that the District will not be obligated to contribute water for Delta outflow because, during the periods that water is needed, Cache Creek is not hydraulically connected.

B. SURFACE WATER MONITORING

The District has a resident employee at both the Cache Creek and Indian Valley dams who monitor, regulate, and report the status of the associated surface water supply. Cache Creek Dam has telephone, radio, and cellular communications. Indian Valley Dam has two satellite telephones for redundancy, a radio, pager, and cellular telephone. Due to the remoteness of the Indian Valley Reservoir, the use of communications other than the satellite telephones requires the dam tender to be out of the valley.

The District contracts with the USGS to operate and maintain streamflow gages on Cache Creek below the Cache Creek Dam and on the North Fork of Cache Creek near Hough Springs and Spring Lake Subdivision. The District also contracts with the USGS to operate and maintain a station to measure the level of Clear Lake at Lakeport. Additionally, the District, in cooperation with the USGS, reestablished the stream gage on Bear Creek upstream of the confluence with Cache Creek, which had been abandoned in approximately 1970, and successfully lead a campaign to have DWR continue operating its gage on Cache Creek near Yolo.

The District provides 50 percent of the funding for each gage except the streamflow gage on the North Fork near Spring Lake Subdivision, which is measuring the discharges from the District's Indian Valley Reservoir and the Clear Lake level gage near Lakeport, both of which are fully funded by the District.

The District also maintains a gage that records the reservoir levels and a weather station at the Indian Valley Reservoir.

Data from all of these gages are available to the public through the Internet on a real time basis either through the California Data Exchange Center or the USGS. The USGS also publishes annually the data from their cooperative stations.

The District also contracts with the USGS to operate and maintain the precipitation gages in the Cache Creek watershed at the Clear Lake Dam, the Indian Valley Reservoir, and near Hough Springs all in Lake County. In late 1999, an additional precipitation gage will be installed at Bartlett Springs. The District has a weather computer in the office that is used to monitor both satellite and Doppler images during the rainy season.

The District operates and maintains six gaging stations on its canal system for measuring diversions and canal flows and one on Cache Creek at Capay Dam. The two main diversions into the canal system at Capay Dam are metered and automated to maintain steady flows and to allow daily adjustments in flow as desired to meet changing demand. At least once a day measurements are taken of the diversion into each lateral, the water being delivered to each water user's gate and any water being discharged at the end of the District's canals. The District does deliver water into natural waterways at the end of its canals for water users downstream who pump out of the waterway.

On a monthly basis, the District monitors boron levels for Clear Lake at Lakeport, Cache Creek at Cache Creek Dam, Bear Creek, Capay Dam and the Moore Siphon, Bear Creek upstream of the confluence with Cache Creek, and the Indian Valley Reservoir and its discharge.

Additional water quality testing by the District relates to a small community water supply system at the Indian Valley Reservoir that the District owns and operates to provide a potable drinking water supply to the District's resident at Indian Valley Dam and the associated campgrounds. Due to the reservoir being the source of supply, the District must meet the surface water supply Title 22 drinking water standards and comply with the appropriate testing and reporting regulations.

C. GROUNDWATER MONITORING

The District monitors groundwater levels through an extensive network of 153 wells throughout Yolo County. In 1967, this task, although extending outside the District's boundaries, was accepted from another agency that was experiencing budgetary problems. The continuity of the data was deemed vital to the long-term planning and viability of the District and Yolo County agriculture.

The District has no established program to monitor the quality of groundwater.

On an annual basis, the District's consulting engineer evaluates and reports on the condition of groundwater within the District.

D. CACHE CREEK RECHARGE/RECOVERY PROJECT

In 1990, the District formulated a conceptual plan for its Cache Creek Recharge/Recovery Project. The District filed an application with the State Water Resources Control Board to appropriate water from Cache Creek to implement the project. Additionally, the District initiated development of a groundwater model that would be used to establish operating parameters and assess impacts during the environmental assessment of the project.

The groundwater model is not yet refined; however, use of the model has been offered to member agencies of the WRA. Until now, the model has only been used by the City of Woodland in performing analyses while preparing its Water Master Plan.

Activity on the project was postponed at the time the planning and environmental process for gravel extraction along Cache Creek became very active. The County has adopted its program for gravel extraction and reclamation along Cache Creek between Capay and Interstate 5, and has indicated the proposed groundwater recharge/recovery project is compatible with the Cache Creek Resources Management Plan. Unfortunately, there is little

opportunity in the mining reclamation plans to implement elements of the District's proposed groundwater recharge/recovery concept. Thus, the opportunity to develop additional yield from the Cache Creek system will be reduced from what was expected. However, since the degree of success or failure to reclaim land to agricultural production has not been proven, will vary from site to site, and may require time to determine at each site, the opportunity still exists for the Yolo County Board of Supervisors to revisit reclamation plans to determine whether recharge and/or environmental restoration may be more practical than reclaiming to agriculture.

In 1993, for the purpose of improving the management of water deliveries and in anticipation of its proposed groundwater recharge/recovery project, the District installed an inflatable rubber dam at its Capay Diversion Dam. Also in 1994, the District filed an application to appropriate water from Cache Creek for purposes of implementing its recharge/recovery project.

Previously, the District worked with others on the reclamation of several gravel pits. The District worked with the Cache Creek Conservancy to convert the "Teichert Meadows Pit," now known as the Cache Creek Conservancy's Nature Preserve, from an unsuccessful reclaimed agricultural pit into a viable wetlands demonstration project by providing surplus District water and the design to divert that surplus water from the Gordon Slough into the project. Additionally, the District worked with Teichert Aggregates to develop and provide surplus water for a Habitat/Groundwater Recharge Demonstration Project at Teichert's "Rodgers Pit," which is scheduled to be donated to Yolo County at a future date. The "Rodgers Pit" is contiguous to the Cache Creek Conservancy's "Correl Pit," which is being reclaimed to diverse wildlife habitat. It should be noted that Yolo County states that Phase IV of the Granite Construction Reclamation Plan includes features suitable for groundwater recharge. This area, which is toward the upper end of the basin's hydraulic gradient, is in an ideal location for a recharge project.

In 1998, the District filed a proposal for a grant from DWR to advance its effort on the recharge/recovery project. Although that grant request was denied, the District will continue to seek outside funding to assist in moving this project forward.

E. DISTRICT-WOODLAND-LANDOWNER IN-LIEU GROUNDWATER RECHARGE PROJECT[2]

The District and City of Woodland have participated jointly in evaluating a proposed in-lieu groundwater recharge project. The District has prepared preliminary costs for extending laterals to deliver water to an area north and west of the City that presently uses groundwater for irrigation. The City has evaluated the impact of the project on the groundwater basin underlying the City, and is interested in considering the project further. No communication has yet been made with landowners in the prospective service area.

F. YOLO-ZAMORA IN-LIEU GROUNDWATER RECHARGE PROJECT

In 1990, approximately 1,000 acres north of Cache Creek, in the Yolo-Zamora Water District, were annexed to the District. The District has been approached by other landowners in the Yolo-Zamora Water District to annex to the District. The area includes approximately 2,200 acres within the area bounded by Cache Creek on the south, Interstate 5 on the east, County Road 17 on the north, and the Dunnigan Hills on the west.

G. SACRAMENTO RIVER DIVERSION PROJECT

The District was involved in the initial investigation of a project to divert water from the Sacramento River and in 1994, filed an application with the State Water Resources Control Board to appropriate water to secure a priority position for Davis, Woodland, and UCD.

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[2] Groundwater recharge can occur as "direct" recharge or "in-lieu" recharge. "Direct" recharge is the percolation of water through a soil profile to the groundwater basin. "In-lieu" recharge involves the substitution of surface water to meet water demand in lieu of pumping. An impact to the groundwater basin is immediate with in-lieu recharge, whereas an increment of time is required for the groundwater basin to reflect the impact of direct recharge.

Although the application is in the District's name, it has been acknowledged to and by the respective parties that the District will transfer the application to those that want to maintain the priority and use the appropriation.

H. PUBLIC RELATIONS PROGRAM

The District's involvement in water resource related activities is rather extensive. However, the awareness of the District's activities within the community is limited. In this regard, the District is drafting a Public Relations Program to keep the community informed of its water resources related activities as well as activities of other programs that may affect water supplies in the District.

DUNNIGAN AND TEHAMA COLUSA CANAL
WITH TERMINUS AT BIRD CREEK

IX. Findings

From review of the District, the water resources it manages, its programs, and projects completed and initiated, the following findings are drawn:

- *The District cannot depend fully on other resource agencies to continue to provide basic data and information required to adequately monitor and manage water resources within and available to the District.*

- *The District's present water supply is not adequate to consistently meet existing demand and will be further depleted by additional demand in the future.*

- *The District's long-term perspective is important to ensuring the integrity of the available water supplies over the long term.*

- *The District's surface water monitoring program needs to be expanded to document the water use efficiency of its "system."*

- *The District's program for monitoring groundwater levels should be enhanced to facilitate understanding the basin under a variety of hydrologic conditions.*

- *The availability of data to document groundwater quality is inadequate.*

- *The District's proposed projects will, if implemented, enhance the utilization of water from the Cache Creek system.*

- *The District should determine whether or not opportunities exist for delivering water supplies for agricultural use in the Dunnigan Hills.*

NORTH FORK CACHE CREEK
TRIBUTARY TO INDIAN VALLEY RESERVOIR

X. Action Program

Based upon a review of the District and its activities, an Action Program has been formulated to summarize the District's plan for improving the management of its water resources. Some elements of the Action Program merely describe existing programs while others are new.

All actions require the expenditure of monies, some more than others. Accordingly, each element of the Action Program is viewed as a discrete task that can be a line item in the District's budget. Each element of the Action Program is described as a stand-alone work assignment, including purpose, description of the Project, work plan, overall budget, and schedule. The budgets are for performing the work described in the respective Action Item. The ongoing cost for implementing the resulting project or program is not included. The budget for implementing the project or program will be developed as part of the Action Item. Each item of the Action Program can be refined further over time. The District invites the participation of other agencies in any of the respective actions. Certain actions require the participation of other agencies to be fully effective.

Presented in Appendix B is a comparative assessment of this Action Program in relation to elements of AB 3030 and AB 3616.

This Action Program was reviewed by the Scoping Committee (Appendix C). Additionally, the draft Plan was distributed to numerous other agencies and individuals for review and comment. A listing of the agencies and individuals receiving copies of the draft Plan is presented in Appendix D. Also presented in Appendix D are copies of the written comments received and the District's response to the comments. This extensive review process effectively validated this Action Program.

Presented below are the elements of the Action Program. A description of each item follows.

Action A. Public Relations Program

Action B. Agricultural Water Users Workshops

Action C. Land Use/Water Use Surveillance

Action D. Surface Water Monitoring

Action E. Groundwater Monitoring

Action F. Cache Creek Recharge/Recovery Project

Action G. Sacramento River Water Diversion Project

Action H. District-Woodland In-Lieu Recharge Project

Action I. District-Yolo-Zamora In-Lieu Recharge Project

Action J. Dunnigan Hills Water Needs/Options

Action K. Drought Management Preparedness

Action L. Water Management Report

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

ACTION A. PUBLIC RELATIONS PROGRAM

PURPOSE

The District has and will continue to be involved in numerous activities to effectively manage and protect existing water supplies and to implement its Water Management Plan. The greater the extent to which its water users and federal, state, local agencies, and the general public are aware of the District's activities, the more effective the District will be in moving its programs and projects forward.

The District maintains membership in several associations, has contact with numerous agencies, and supports events locally that have committees, boards, etc., which provide opportunities for the District to present its programs, existing and planned. By virtue of greater awareness, the opportunity for gaining a partner and support in implementing a program is enhanced.

Accordingly, the purpose of Action A. is to establish a program that disseminates information about the District and its programs on a regular basis.

PROJECT DESCRIPTION

This project includes identifying audiences for presenting particular elements of the District's overall Plan on a regular basis. Through this effort, the awareness of District efforts to protect and enhance the management of existing water supplies and obtain supplemental supplies will be expanded.

WORK PLAN

The work plan for this action is described below:

1.0 Project Management

The Project Manager is responsible for coordinating, scheduling, and performing work to formulate and update the scope of this public relations effort.

2.0 Prepare Status Reports

Status reports should be prepared quarterly. The report should document events that took place during the report period and describe activities anticipated to occur in the next period.

3.0 Identify Audiences

There are various means of communicating information to inform people or groups of people of District activities. The District has effectively used inserts in the local newspaper to inform the public locally, and this can be continued for particular information. Other audiences that should be considered in developing details for this program include the following:

Presentation

Local Organizations -- Farm Bureau, Chambers of Commerce, Rotary Clubs, Grange, etc.

Local Agencies -- Board of Supervisors, City Councils, RCD, Reclamation Districts, Irrigation Districts, Water Districts, Planning Commissions

Regional Agencies/Associations -- Association of California Water Agencies, Northern California Water Association, Water Education Foundation

Communications

- District Web Site
- Local Newspapers and Magazines
- Water User Invoice Inserts
- Newsletter of Associations
- Field Trips
- Special Informational Meetings

4.0 Determine Objective of Communication

The information could vary depending upon the audience. The information and message communicated should be focused depending upon the objective. For example, the information presented to the Board of Supervisors may be different than that presented to water users. Information presented to water users may deal with the details of water application, land preparation, etc., whereas the information presented to the Board of Supervisors many address the program as irrigation efficiency.

5.0 Formulate And Update Program

Once the specific audiences and communication are identified, the program shall be formulated including the graphics and handouts, as deemed appropriate. District personnel involved with particular audiences are to be identified. Programs of this nature will become better defined and focused with time. Audiences that were not identified initially may emerge and warrant attention. Also, with time, the District will complete some activities and initiate new ones. For these reasons, this program will require refinement on a regular basis and certain audiences may require or warrant being readdressed.

Material developed during implementation of the various actions can be used for various presentations, handouts, and newsletters.

6.0 Implement Program

This action can and should be implemented as early as practical. The Water Management Plan can be the subject for presentation to several audiences and facilitate early implementation.

SCHEDULE

Action A. will be an important aspect of the District's future. Once formulated, it will be an ongoing program that will be continually updated.

BUDGET

The estimated budget for this action is estimated from $20,000 to $40,000.

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

ACTION B. AGRICULTURAL WATER USERS WORKSHOPS

PURPOSE

The District has been assisted by water users, which have been willing and helpful when called upon by the District to address particular issues. Effective implementation of measures to improve water management and water conservation within the District requires the participation of water users. This is particularly true with respect to Action C. through Action K. of this Water Management Plan. Refinement in District and water user operations to more effectively utilize the water resources in the District will only be effective with greater dialogue. There are several items that relate to the District that are not being addressed as part of programs sponsored by other agencies, thus this activity will not be redundant or compete with other programs.

Accordingly, the purpose of Action B. is to establish a program whereby the District conducts workshops to inform the water users of District programs and projects, to identify where water user participation is important and to introduce alternative technologies to determine merits or potential problems. Cooperative participation with the NRCS, RCD, and Farm Extension Service will be most helpful for addressing some subjects.

PROJECT DESCRIPTION

This project involves the District taking the lead to arrange and conduct workshops with its agricultural water users on an annual or semiannual basis. The District will plan, organize, and conduct the workshops and invite the participation of other federal, state, and local agencies, as appropriate, for the subject(s) being addressed.

WORK PLAN

The work plan for Action B. is described below:

1.0 Project Management

The Project Manager is responsible for scheduling workshops; developing the program for the workshops; and making arrangements, conducting, and evaluating workshops.

2.0 Prepare Status Reports

Status reports should be prepared monthly to document programs or developments within the report period and to identify what is planned in the next report period.

3.0 Establish Water User Advisory Committee

The District should establish a Water User Advisory Committee comprised of farmers that use District water as well as those that do not. The Advisory Committee can assist the District in developing the subject matter for workshops, the format for the workshops, and possibly assist in carrying out certain aspects of the program. The Advisory Committee can be helpful in scheduling the time of year for conducting workshops.

4.0 Develop Workshop Scope and Format

Each workshop should be developed to address a specific topic(s) and specific product or accomplishment desired. A focus of this effort is to improve farm economics. There are numerous topics or items that can be addressed that can be helpful in improving water management and water conservation at the District on an on-farm level and farm economics as well. Topics that could be considered are noted blow. New topics will emerge over time.

- Water use and on-farm irrigation/system efficiency
- Water conservation technologies
- Action C. through Action K.
- Drought contingency operations
- Groundwater level and quality monitoring and data acquisition
- Incentives to increase or decrease groundwater extraction
- Incentives to utilize surface water in lieu of groundwater
- Incentives for water transfer agreements that are beneficial to enhancing future water supplies within the County
- Irrigation scheduling technology
- Water/energy management
- Direct and in-lieu recharge opportunities
- Water delivery
- Enhanced/reduced runoff opportunities
- Subsidence

Each workshop may be different in terms of the participants, audio visuals, equipment, or field trips. Thus, each must be carefully planned for the program to be successful.

5.0 Conduct Workshops

Each workshop should be conducted with its accomplishments highlighted at its conclusion. The participants in the workshop can be helpful in identifying future topics and providing guidance for making subsequent workshops even more effective.

SCHEDULE

Workshops should be conducted at least once a year beginning at the earliest practical time.

BUDGET

The budget for conducting a workshop can vary considerably depending upon the topic and materials. An initial budget of approximately $10,000 is suggested.

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

ACTION C. LAND USE/WATER USE SURVEILLANCE

PURPOSE

The management of resources, whether financial, water, land, etc., necessitates understanding the resource from the supply to its end use. The water resources within or available to the District are reasonably well known. The magnitude and reliability of surface water supplies from the District's Cache Creek System are understood to the extent historical data reflects conditions that may be encountered in the future. However, a reasonable estimate of the use of surface water and groundwater within the District cannot be determined with any regularity under the present circumstances. The water used by the cities is known; however, beyond the cities there is no reasonable water use, amount, and location data. This part of the water management equation needs refinement.

The District's surface water supply and delivery data, and groundwater level data, supplemented with water use data, will provide essential ingredients for refined water management within the District.

An effective means to determine water use is to inventory land use and to calculate water use accordingly. This approach can be improved with data of water use from farmers willing to participate in the program and have their water use, surface water and groundwater, measured. Land use maps will also facilitate determining the geographical location of water use and changes therein over time.

Accordingly, the purpose of this Action is to establish a program that provides for a detailed land use survey and water use analysis on a regular basis.

PROJECT DESCRIPTION

This project includes performing regularly, at three-year to five-year intervals, a detailed land use survey similar in scope and detail to those performed by DWR.

DWR performed a land use survey in 1998, and recently completed the compilation of the data and mapping. The next land use survey should be performed in 2001. Subsequent surveys should be expanded over time to include the locations of agricultural wells and domestic wells. This information can be obtained using Global Positioning System (GPS) technology. This information can be incorporated into the County's GIS mapping data base if it is determined the County will make the maps available for use by other agencies.

The District measures water delivered to its water users thereby providing a basis for confirming amounts of applied water. Farmers using groundwater should be encouraged to participate in the program to refine the estimates of groundwater pumpage.

WORK PLAN

The work plan for Action C. is described below:

1.0 Project Management

The Project Manager is responsible for coordinating, scheduling, and monitoring the work; scheduling meetings of the participants; and preparing status reports.

2.0 Prepare Status Reports

Status reports should be prepared quarterly or semiannually depending upon the extent of the activity that has occurred. Each status report should identify when the next report will be prepared and identify what is expected to happen within that time.

3.0 Establish Process for Performing Survey

DWR's schedule for performing land use surveys for Yolo County has not been regular due to funding constraints. It should be determined what, if any, schedule DWR has for performing the next land use survey for Yolo County. If DWR has no definitive plans, DWR should be requested to determine exactly what will be required to have its program continue.

If it is determined that DWR is not or will not be in a position to perform the work, a new program should be formulated which is carried out by the District and/or other interested parties.

4.0 Develop Scope of Land Use Survey

With the intent of improving the information base with each survey, the 1998 Land Use Survey will be reviewed to determine what improvements could be made in the data gathered or in the compilation of the data.

In the event DWR will not perform the work, specifications should be developed to request proposals to have the work performed. The geographic scope will be determined by the parties participating.

5.0 Perform Survey and Compile Data

A land use survey should be performed in 2001, and the data compiled for use in estimating water use. The data and information will be compiled and evaluated to identify notable changes in land use and the relative impacts on water use.

6.0 Prepare Land Use/Water Use Report

A report will be prepared that summarizes the results of the data and evaluations. The report will identify the scope and schedule for the next land use survey, and efforts underway to better quantify water use and distinguish between surface water and groundwater. The report will also identify notable changes in land use and water use and the significance from the stand point of resource management.

SCHEDULE

A schedule for performing Action C. follows.

BUDGET

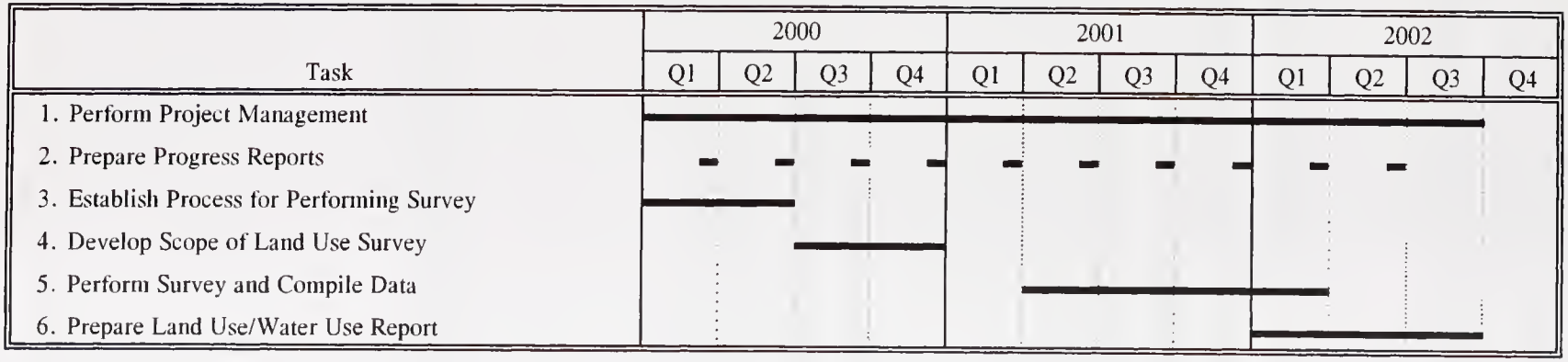
The estimated budget for this action is $80,000 to $100,000 for this first survey and compilation of data. If DWR participates, the budget may be considerably less.

YOLO COUNTY FLOOD CONTROL &
WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

ACTION C
LAND USE/WATER USE SURVEILLANCE

SCHEDULE



YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

ACTION D. SURFACE WATER MONITORING

PURPOSE

Surface water gaging stations exist to quantify runoff within the Cache Creek watershed. The quality of surface water with respect to boron is monitored by the District. The Central Valley Regional Water Quality Control Board is monitoring Cache Creek for a wide range of constituents. Additionally, information from the Putah Creek-Cache Creek Ecotoxicity Program and various mercury studies being conducted by UC Davis and the California Department of Fish and Game is being completed on a regular basis. Also, the District measures the amount of water diverted from Cache Creek into its distribution system.

Documentation on the amount of water flowing out of the District is not complete. Accordingly, the purpose of Action D. is to install stations to document the amount of water leaving the District, thus document the overall efficiency of water use within the District. Depending upon the results, the means and methods would be evaluated for recovering the water to enhance the overall water use efficiency within the District.

PROJECT DESCRIPTION

This project includes the installation and ongoing operation of supplemental flow measurement stations.

The work plan for this action is described below:

1.0 Project Management

The Project Manager is responsible to coordinate and schedule work to install supplemental gaging stations and obtain and compile the data.

2.0 Prepare Status Reports

Status reports should be prepared quarterly until such time that the stations are installed. This Action will be complete once the stations are installed.

3.0 Confirm Stations Required

To document the efficiency of water use within the District, the amount of water flowing out of the District needs to be documented. The locations where water flows from the District include the Willow Slough Bypass, "Channel A" or Covell Drain at the Willow Slough Bypass (Map 2), and Willow Slough. The water flowing through the Willow Slough Bypass is, potentially, the most significant. The significance of water flowing from the District through Channel A and Willow Slough should be confirmed as part of this Action to determine if means for measurement should be considered. Water flowing in Channel A during the irrigation season most likely originates in the City of Davis; however, this should be confirmed.

A station on the Willow Slough Bypass will provide useful information regarding runoff during the winter months as well.

4.0 Install and Monitor Stations

With the appropriate stations confirmed, the District should install a gage with a water level recording gage and establish a rating curve for the section. The most feasible location may be at the County Road 29 Bridge. Establishing the rating curve will require that discharge measurements be made during winter months.

5.0 Compile Data and Information

The data obtained from the new station(s) should be compiled with the District's other operations data. Estimates of water use efficiency should be calculated on an annual basis.

6.0 Investigate Opportunities for Increasing Water Use Efficiency

Based upon the results obtained from Task 5.0, investigate opportunities for improving the efficiency for utilization of the water supply available to the District. This could include on-farm tailwater recovery systems, which could be addressed in Action B., or water recovery systems implemented by the District in conjunction with other entities.

SCHEDULE

This program should be implemented as early as possible to provide a full season of data in 2000.

BUDGET

The budget to establish a station on the Willow Slough Bypass is estimated at $15,000, excluding the downloading of data.

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

ACTION E. GROUNDWATER MONITORING

BACKGROUND

The monitoring of groundwater levels within the District is good. While certain monitoring wells have been eliminated from the District's network of monitoring wells, others have been added. All of the District's monitoring wells are observed two times annually for water levels. Water quality monitoring is not performed by the District. Enhancements to the District's overall database for groundwater, both levels and quantity, would, over time, improve the District's understanding, thus management of the groundwater.

PURPOSE

The purpose of Action E. is to evaluate the existing network of water level monitoring wells and establish a network of water quality monitoring wells.

WORK PLAN

1.0 Project Management

The Project Manager is responsible to coordinate, schedule, and monitor the work; schedule meetings of the participants; and prepare status reports.

2.0 Prepare Status Reports

Status reports should be prepared monthly. The status report should summarize work accomplished in the report period and identify work to complete in the next report period.

3.0 Evaluate Network of Monitoring Wells

The network of groundwater level monitoring wells in Yolo County, the northern part of Solano County, and southern part of Colusa County are to be inventoried. This includes wells monitored by the District; the U.S. Bureau of Reclamation; Department of Water Resources; U.S. Geological Survey; Solano County Water Agency; cities of Davis, Winters, and Woodland; UCD; gravel mining companies; and other entities as may be identified. The individual monitoring programs should be reviewed to determine where consistency or the lack thereof may exist, and the extent to which the data is compiled within DWR's groundwater level database. Every effort should be made to integrate as much of the data into the overall database, as deemed appropriate.

A determination should be made on the coverage to adequately represent the behavior of the groundwater basin. This will involve an assessment of the geographic coverage, as well as confirming relative consistency in the depths.

4.0 Establish Well Monitoring Network

Based upon the information compiled in Item 3. above, a network of monitoring wells should be confirmed among the participants and agreement reached on a monitoring schedule and how to transmit data to compile into a comprehensive database. DWR has historically performed this important service and ideally would continue to do so. This needs to be confirmed.

5.0 Select Wells for Monitoring Monthly

The monthly data from selected wells, together with the spring and fall readings, will provide a good record of the behavior of the groundwater basin. Selected wells should be identified for monitoring on a monthly basis. This information is useful during unusual years, particularly dry years.

6.0 Determine Water Quality Constituents to Be Monitored

This effort should build on the work already completed by the WRA, and obtained from gravel mining companies, as required under the Off-Channel Mining Plan. Water quality data being compiled outside the cities is limited. Therefore, information to determine conditions and relative changes is not possible. The District should establish a program to monitor groundwater quality with respect to boron since this constituent is important from an agricultural standpoint. The inclusion of other constituents should be determined in consultation with the cities.

Consideration for testing groundwater quality in wells outside the cities was addressed in the Yolo County Water Plan. Although no action was taken then, it should be considered at this time to determine if it is feasible to incorporate water quality sampling with the District's water level monitoring program, or whether it should be separate from the District's Program. The primary beneficiaries of an expanded water quality monitoring program, as part of an "early detection," are the cities.

7.0 Formulate and Implement the Enhanced Groundwater Monitoring Program

Based upon results from the activities described above, an enhanced groundwater monitoring program should be formulated. As agreed, the participants should implement their respective programs and coordinate the compilation of data into a common database.

SCHEDULE

It is estimated that the formulation of the enhanced groundwater monitoring program will require approximately six months.

BUDGET

The estimated budget for preparing the groundwater monitoring program is $40,000 to $60,000.

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

ACTION F. CACHE CREEK RECHARGE/RECOVERY PROJECT

BACKGROUND

Introduction -- From a preliminary analysis of the hydrology of the Cache Creek watershed and hydrogeologic conditions along Cache Creek, from Capay to Yolo, it appears the groundwater basin could be managed to provide a supplemental water supply averaging 20,000 to 30,000 acre-feet per year. The District has initiated work toward formulating a groundwater recharge/ recovery program to refine the management of water resources from the Cache Creek watershed.

As a first step in this program, as well as to improve existing water management operations, in 1993, the District installed an inflatable rubber dam at its Capay Diversion Dam. The rubber dam replaced a flashboard system that was used to divert water. The inflatable dam allows the District to divert water during the nonirrigation season for groundwater recharge. This mode of operation is not possible without the inflatable dam. In the interest of moving this project forward, the District filed an application to appropriate water from Cache Creek. On October 20, 1994, the application was accepted for filing by the State Water Resources Control Board.

Also, the District completed preliminary work to develop a groundwater model. The groundwater model will be used as a tool to determine the potential to obtain supplemental water from the Cache Creek watershed, develop operational parameters for project facilities, and assess impacts to users of groundwater in the area.

Implementing this project will require the participation and active cooperation of numerous water users within the District, those within and those removed from the immediate project area. This project can be integrated with the comprehensive resources management program adopted by Yolo County, which includes gravel extraction and reclamation.

Managing the project will require a carefully planned monitoring program. Attention will need to be given to ensure boron does not increase in the groundwater between Capay and Yolo.

PURPOSE

The purpose of Action F. is to assess the magnitude of the additional supply, the physical and operational elements of a project, groundwater recharge/recovery project along Cache Creek, and to design a project for implementation.

PROJECT DESCRIPTION

Project Features -- The work performed during the feasibility study will identify the type, size, and location of physical facilities (preferred project) and will include completing an EIR for the project. However, basic elements of the recharge/recovery project requires certain facilities. The District's existing diversion and conveyance facilities will be used to the greatest extent possible for recharge and to use recovered water. Nevertheless, essential new facilities, including the following, will be required:

- Canals and Laterals
- Turnouts
- Water Recharge Basins
- Groundwater Recovery Sites
- Groundwater Recovery Systems
- Water Monitoring (Quantity and Quality)

Project Operation -- The basic operational concept for the project is to augment groundwater recharge by diverting water during the winter to strategically located recharge basins. All or a part of the water recharged would be extracted for beneficial use the following spring and summer in conjunction with the water supplies available from Clear Lake and Indian Valley. The basin would not be operated for long-term storage but, when operated as part of a conjunctive use

system, would maximize the amount of water stored in the groundwater basin. This project would use appropriated water from Cache Creek diverted to the recharge facilities. Water stored underground would be the first irrigation water used during the season, allowing more stored carry-over water to be available in the Indian Valley Reservoir.

WORK PLAN

1.0 Perform Project Management

The basis for conducting, coordinating, and directing the work performed by the study team will be outlined in a Project Management Plan prepared for the project. The protocol for effective coordination between the District, DWR, and other regulatory or planning agencies or groups will be established as part of the overall project management. A Quality Assurance Committee will be established to review the project at regular intervals.

2.0 Prepare Status Reports

Status reports will be prepared quarterly. The report should document events that took place during the report period and describe activities anticipated to occur in the next period.

3.0 Conduct Public Involvement Program

3.1 Establish Public Involvement Program

The success of the project will be determined by the extent to which it is implemented. Successful implementation will require participation, directly or indirectly, of landowners and water users and understanding by citizens as well. Accordingly, a Public Involvement Program will be identified early in the work. This program will be an integral element of Action A., the District's Public Relations Program.

3.2 Define Project Goals

The District, for other planning efforts, has convened a Water Management Scoping Committee. The Committee consists of representatives from the agricultural and business sector, the county, UCD, and cities, including elected officials and staff. The identified specific project goals will be determined with input from this Committee, or a similar one.

4.0 Evaluate Land And Water Use Within The District

An assessment of land and water use within and adjacent to the District will be made using information compiled from Action C. This information will facilitate formulating the project from the standpoint of applying recovered groundwater to land already served with surface water or to land on which only groundwater is used.

5.0 Update District's Cache Creek System Hydrologic/Operations Model

The District's hydrologic/operations model for its Cache Creek system (Clear Lake-Indian Valley and Cache Creek) was developed in 1976. The model requires updating to reflect new hydrologic data as well as to account for changes in reservoir operations.

Output from this model would be incorporated as input to the groundwater model (Task 6.0).

6.0 Refine District's Groundwater Model

The District has performed preliminary work to develop a groundwater model encompassing a major portion of Yolo County with refinement in the vicinity of Cache Creek. The City of Woodland has performed work using the District's model and has made refinements within the vicinity of Woodland. Further refinement and validation is required to advance

the model to the point where it can be used as a tool to determine groundwater levels and an operational strategy, and to estimate the benefits in terms of additional water supplies.

The model was developed from the USGS Central Valley Aquifer Project (MODFLOW) and refined using available data and information to better characterize the hydrogeology in Yolo County with particular attention devoted to the vicinity of Cache Creek.

7.0 Formulate Project and Operational Guidelines

Using the District's hydrologic/operations model and groundwater model, various scenarios will be evaluated to assess the type, capacity, and location of project facilities for both recharge and recovery of groundwater. An important aspect of this task is to address the feasibility/desirability of gravel mining reclamation plans in view of the lack of success in reclaiming pits for agriculture. The results of these evaluations will provide the basis to identify facilities and their operation for the overall project and quantifying resulting impacts. Preliminary engineering drawings will be prepared and will provide the basis for estimating costs.

8.0 Evaluate Permits and Regulatory Compliance

Implementing the recharge/recovery project will, depending upon the project developed, require various permits and involve regulatory agencies. Water rights, which are critical to the project, were initially addressed in 1994, when the District filed an application to appropriate water from Cache Creek for the project. CEQA review will be required before the remaining protests can be addressed and resolved. Depending upon the specific project facilities, other permits and compliance may be required through a Streambed Alteration Permit under Section 1601-1606 of the California Department of Fish and Game Code; Section 404 compliance through the U.S. Army Corps of Engineers; Section 401 Water Quality Certification through the Central Valley Regional Water Quality Control Board; and compliance with the Endangered Species Act. Additionally, the District may also be

required to obtain permits from Yolo County, including the following: Use Permit, Floodplain Development Permit, Floodway Permit, and possibly building and grading permits. Information for the required permits will be prepared consistent with the scope of the project to facilitate construction.

9.0 Evaluate Environmental Impacts and Prepare Eir

After identifying the preferred project and determining the project feasibility, an EIR will be prepared.

10.0 Evaluate Benefits

The respective models will be used to identify benefits to be derived from implementing the project. The benefits will be measured in terms of additional water supply or water supply reliability.

11.0 Determine Project Feasibility

The costs to construct and operate the project will be determined and an assessment of its relative feasibility made. The feasibility assessment will include estimates of the amount of additional water developed, project costs, financing options, environmental impacts, mitigation measures and costs, and the prospects for general public and water user support.

12.0 Formulate Project Implementation Program

When a determination is made of the project's feasibility, a program will be developed to implement the project. The implementation program will incorporate the environmental documentation that has been prepared for CEQA compliance, obtaining permits, preparing construction plans and specifications, acquiring lands, and all other items to move the project to construction.

13.0 Prepare Draft Feasibility Report

A draft feasibility report will be prepared for review by the Scoping Committee and DWR. A public meeting will be held to review the project. Twenty copies of the draft report will be prepared.

14.0 Prepare Final Feasibility Report

Comments received on the draft report will be reviewed and incorporated into the final report, as appropriate. Twenty-five copies of the final report will be prepared. The report will provide the basis for seeking funding for construction of the project.

SCHEDULE

A schedule for implementing this Action F. follows.

BUDGET

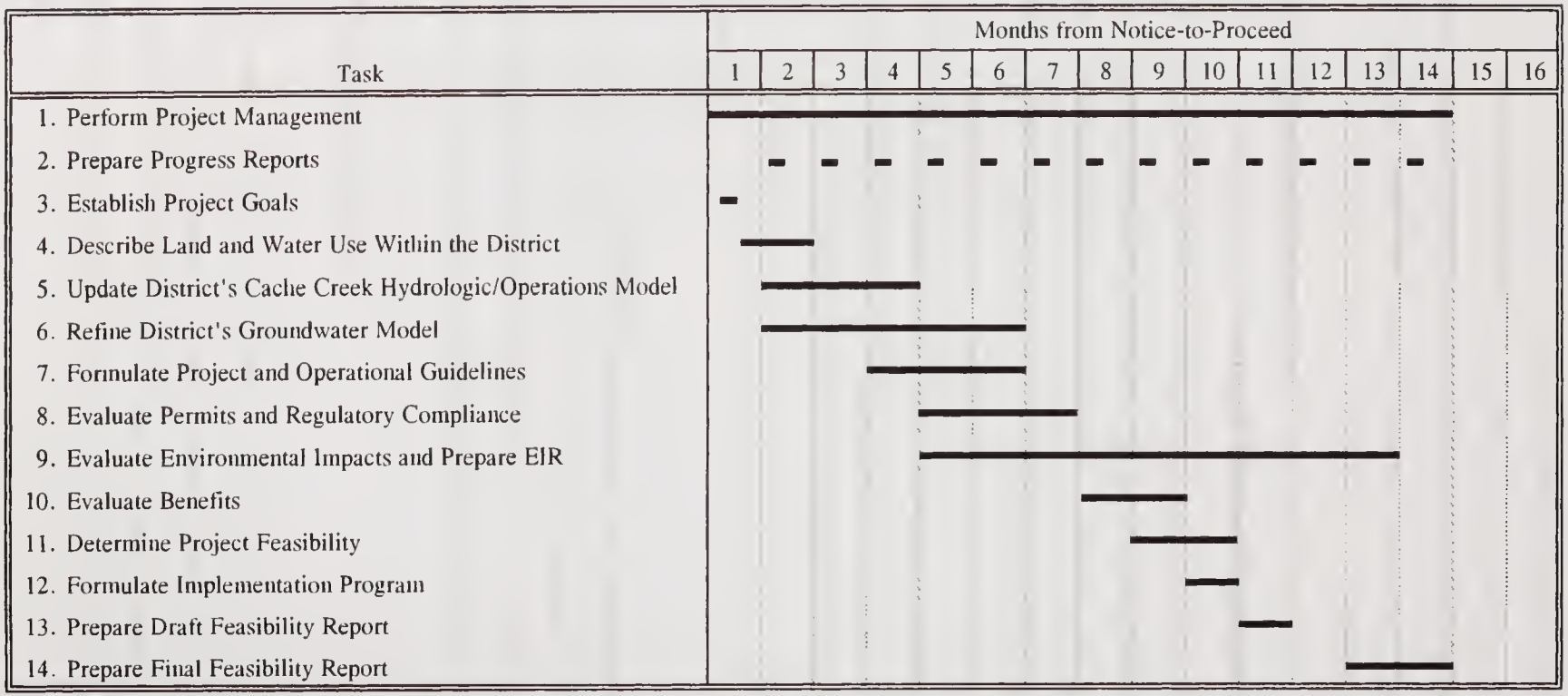
The estimated budget for this project is $650,000.

YOLO COUNTY FLOOD CONTROL &
WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

ACTION F
CACHE CREEK GROUNDWATER RECHARGE/RECOVERY PROJECT

SCHEDULE



YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

ACTION G. SACRAMENTO RIVER WATER DIVERSION PROJECT

BACKGROUND

In 1994, the District filed an application to appropriate 45,000 acre-feet of water from the Sacramento River. Although it was agreed among the parties involved in the investigation of supplemental water supplies in 1992, that water from the Sacramento River would not be affordable for agriculture, the District filed the application on behalf of the cities of Davis and Woodland, and UCD. The application was filed to establish a priority position for the respective parties.

Since the application was filed, Davis, Woodland, and UCD have completed water master plans, each of which identify a diversion from the Sacramento River as an alternative to meet future water needs. Funding to proceed with feasibility analyses is being sought by the respective parties at this time. The District will assign the application to the appropriate party or parties once plans have been formulated to proceed.

It is understood that additional supplemental water supplies are needed in addition to the supplies discussed above, to have a year-round supply. Accordingly, the District has been coordinating with the cities of Davis and Woodland to identify alternatives for this additional supplemental supply.

PURPOSE

The purpose of Action G. is for the District to continue to facilitate the efforts of Davis, Woodland, and UCD in pursuing supplemental water supplies that would be diverted from the Sacramento River.

Action G. is different than other action in that the District's involvement will be dictated largely by the activities of and at the request of Davis, Woodland, and UCD. Accordingly, the work plan is different as well.

1.0 Prepare Status Reports

Status reports should be prepared quarterly. The status report should summarize activities of the respective parties conducted within the report period and identify activities planned to be completed in the next period, relative to their "due diligence."

2.0 Coordinate with Respective Parties

The District, at the request of the cities of Davis or Woodland, or UCD, will participate in meetings or activities to facilitate moving plans forward regarding the Sacramento River water rights and will continue to coordinate with the cities in identifying additional supplemental supplies.

3.0 Assign Water Right Application

Once Davis, Woodland, and UCD determine how they plan to proceed with obtaining supplemental water supplies from the Sacramento River, the District should implement measures to assign the water right application.

4.0 Facilitate Implementation

The District, as it has in the past, should be prepared to assist the party or parties in implementing their plans to obtain supplemental water supplies for municipal use from the Sacramento River.

SCHEDULE

The schedule for District participation in this Action will be dictated by Davis, Woodland, and UCD.

BUDGET

The budget for District participation in Action G. cannot be estimated, however, it should require nominal involvement of management and staff.

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

ACTION H. DISTRICT-WOODLAND IN-LIEU RECHARGE PROJECT

BACKGROUND

The District, upon completing the construction of Indian Valley Dam and Reservoir, determined that the opportunity existed to expand in-lieu groundwater recharge in selected areas of the District. These areas are in the vicinity of the cities of Davis and Woodland, and the Yolo-Zamora Water District.

The District investigated projects to deliver surface water in-lieu of pumping groundwater in the vicinity of Davis in 1977, and on two separate occasions in the Yolo-Zamora area. In each case, there was not sufficient interest on the part of the beneficiaries to participate in the project.

This concept was subsequently discussed with the City of Woodland and it was agreed the District and the City of Woodland would carry out particular tasks. The District agreed to identify alternative service areas and estimate costs for physical facilities. The City agreed to evaluate the impact of extending surface water supplies to agriculture north and west of Woodland on the groundwater basin. The City, with refinement to the groundwater model developed by the District, evaluated the impact of substituting surface water, when available, for groundwater. The City determined that it has a continued interest in the concept. The conveyance facilities and service areas identified by the District and the estimated cost of physical facilities for two alternatives are delineated on the map on Page 102. Alternative I serves parcels and land adjacent to the canal only, whereas Alternative II serves parcels of land adjacent as well as one parcel removed from the canal.

PURPOSE

The purpose of Action H. is to determine the feasibility of implementing an in-lieu recharge project through a cooperative effort of the District, City of Woodland, and landowners.

WORK PLAN

1.0 Perform Project Management

The District and City of Woodland should determine how management of this project should be handled. This could be jointly or individually with the District or City taking the lead. The Project Manager is responsible for coordinating, scheduling, and performing the work.

2.0 Prepare Status Reports

Status reports should be prepared monthly. Status reports should document activities or work completed during the report period and that which is expected to be completed in the next report period.

3.0 Determine Landowner Interest

The landowners within or adjacent to the potential service area will be contacted by mail with a notice of landowner meeting. General information should be included with the notice being sent to landowners. An initial meeting(s) will be held to discuss the project including the purpose, type of facilities that would be considered, water supply service, and facility operation and maintenance.

Meeting(s) will be conducted to present pertinent information and to determine if there is sufficient interest on the part of the landowners to participate in a project as well as to determine their concerns, questions, and conditions or requirements for participating.

4.0 Establish Project Coordination Committee

If the landowners are interested in pursuing the project, a Project Coordination Committee (PCC) will be established to facilitate communication among the parties through implementation of the project. The PCC will meet as often as deemed appropriate to keep all parties informed of the project and to guide the work process. The PCC will determine when meetings should be held with the landowners at large and determine the scope of the meetings as well.

5.0 Refine Alternatives

The alternatives for delivering irrigation water to the potential service areas will be reviewed with landowners directly impacted to confirm the alignment and type of facilities proposed to be constructed on their property (i.e., open channels, pipes, gravity, or pumped diversion, etc.). With the alignments confirmed, topographic surveys will be performed to facilitate a better determination of layouts and costs. The manner in which easements and rights-of-way for construction and ongoing operation and maintenance should be handled will be addressed.

6.0 Refine Costs

Once the alternatives are refined, the costs will be refined as well. Alternatives for construction of project facilities will be examined. Options may include construction by a contractor, District forces, and/or landowners. The costs will be estimated for the refined alternatives.

7.0 Evaluate Funding Alternatives

With the project alternatives and costs determined, the District and City of Woodland will discuss alternatives for funding implementation of the project. The alternatives for funding

the project can affect the feasibility of the project. The alternative for funding will be reviewed among the District, the City of Woodland, and the landowners to determine if there is a funding alternative that is mutually acceptable to all parties.

8.0 Prepare Project Documents

With the project determined to be feasible, construction plans and specifications will be prepared for construction, descriptions prepared for easements, and rights-of-way and agreements executed among the project participants.

9.0 Construct Project

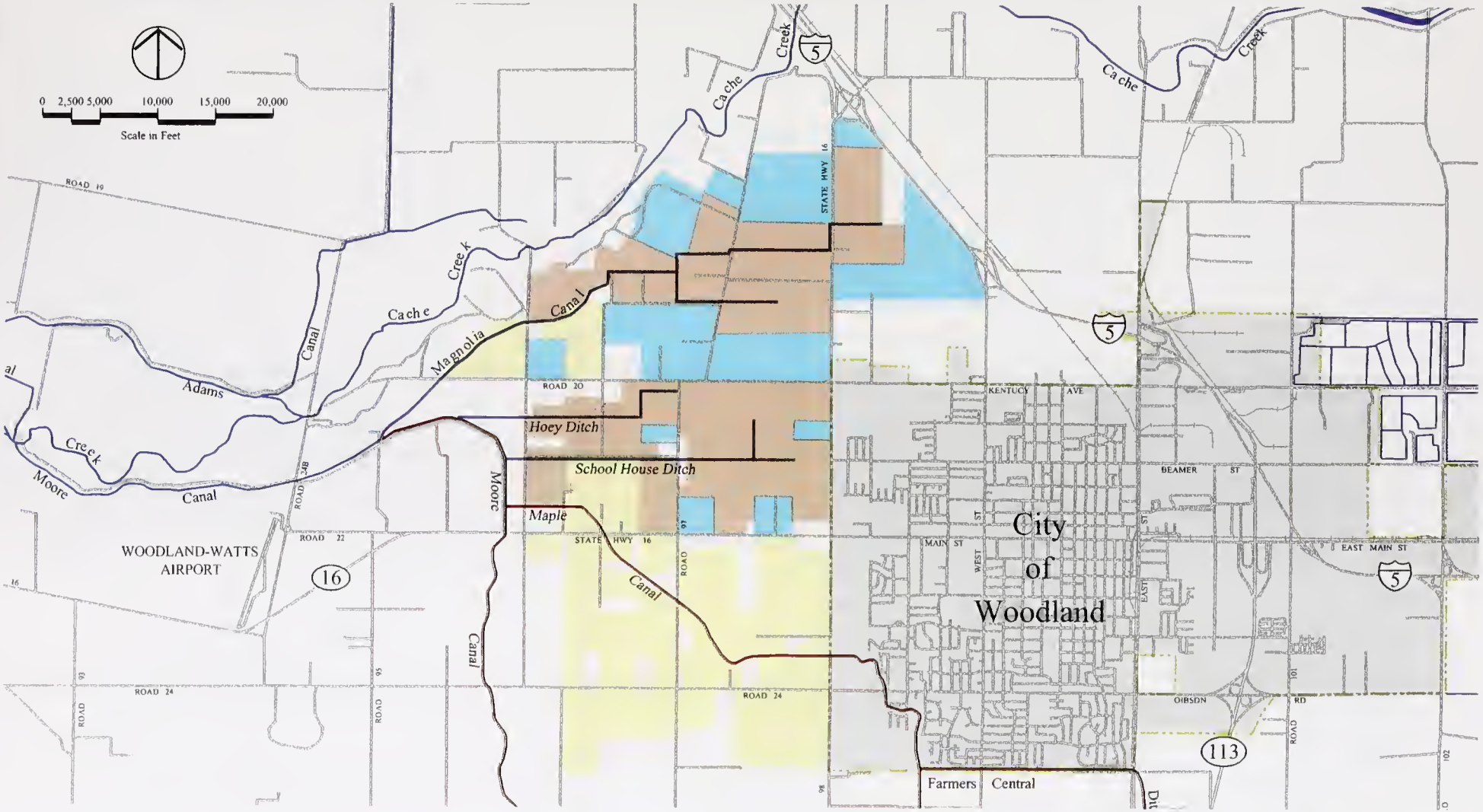
With all documents and funding in place, construction of the project can be initiated. The time for construction will be influenced by the approach for construction and weather.

SCHEDULE

A schedule for implementing Action H. follows.

BUDGET

The estimated budget for this project, not including construction and acquisition of easements and rights-of-way, is $60,000.



LEGEND

- Existing Canal
- Proposed or Improved Canal
- Land Irrigated From District Canals
- Land (Parcels) Adjacent to Proposed or Improved Canals
- Land (Parcels) One Parcel Removed From Proposed or Improved Canal

SUMMARY OF SERVICE AREA AND COSTS [1]

Facility	Alternative I			Alternative II		
	Net Area ac	Total Cost $	Unit Cost $	Net Area ac	Total Cost $	Unit Cost $/ac
School House Ditch	640	783,500	1,224	730	850,352	1,165
Hoey Ditch	158	32,700	206	236	36,704	156
Magnolia Canal	884	98,600	112	1,569	136,677	87
TOTAL	1,682	914,800	544	2,534	1,023,733	404

[1] 1996 Costs.

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT
CITY OF WOODLAND

IN-LIEU GROUNDWATER RECHARGE PROJECT

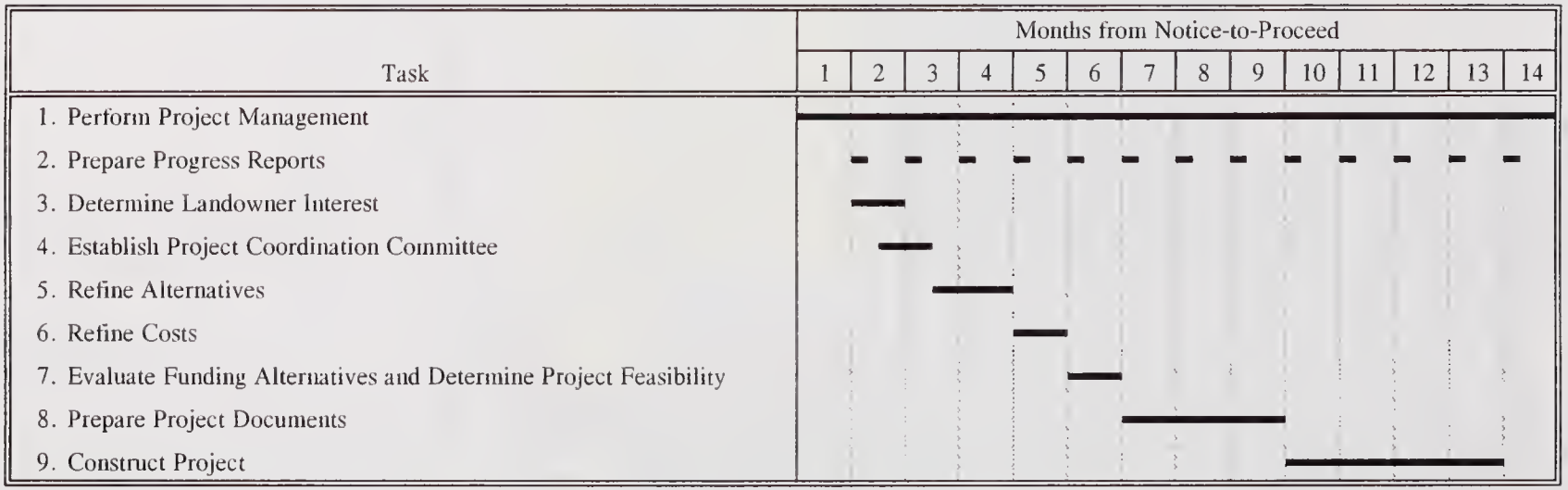
BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

YOLO COUNTY FLOOD CONTROL &
WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

ACTION H
DISTRICT-WOODLAND IN-LIEU RECHARGE PROJECT

SCHEDULE



YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

ACTION I. DISTRICT-YOLO-ZAMORA IN-LIEU RECHARGE PROJECT

BACKGROUND

Based upon the District's evaluation of opportunities within and adjacent to the District, it was determined several years ago that there is an opportunity to effectively use surface water supplies for in-lieu groundwater recharge in the Yolo-Zamora area. On two occasions, the District evaluated alternatives to deliver surplus water to land within the Yolo-Zamora area. In both cases, there was insufficient interest on the part of landowners to pursue a project.

Recently, the District has been approached by landowners within the southern portion of the Yolo-Zamora area to provide surface water supplies. In 1994, landowners just north of Cache Creek representing approximately 1,000 acres deannexed from the Yolo-Zamora Water District and annexed to the District.

PURPOSE

The purpose of Action I. is to respond to the request of landowners and determine the feasibility of implementing an in-lieu recharge project within a portion of the Yolo-Zamora area.

WORK PLAN

1.0 Perform Project Management

The Project Manager is responsible for coordinating and scheduling work to implement Action I., manage the work and budget, and prepare status reports.

2.0 Prepare Status Reports

Status reports will be prepared monthly. The status reports will describe the activities or work completed during the report period and that which is expected to be completed in the next report period.

3.0 Determine Landowner Interest

The District will apprise the Yolo-Zamora Water District of the expressed interest of landowners to receive water from the District for irrigation. The landowners within the potential service area will be contacted by mail with a notice of a meeting. The purpose of the meeting is to discuss the prospects of a project and to determine the level of interest in participating in a project to receive supplemental water from the District. If sufficient interest is expressed by landowners to pursue a project, LAFCO should be advised of the prospects of the project and potential deannexation/annexation.

4.0 Establish Project Coordinating Committee

If landowners are interested in a project to furnish surface water that can be used for irrigation in-lieu of pumping groundwater, a Project Coordinating Committee (PCC) will be established, which will include representatives of the District and landowners. The PCC will be established to facilitate communication between the parties through implementation of the project. The PCC will meet as often as deemed appropriate to keep all parties informed of the project and to guide the work and process. The PCC will determine the schedule and scope of meetings of the PCC and landowners at large.

5.0 Identify Alternatives

Once the interested landowners are identified along with the area they represent, a potential service area will be identified. Owners of land within the service area boundary that have

not participated previously will be contacted to advise them of the potential project and to determine their interest.

Alternatives for delivering irrigation water will be identified and confirmed with landowners through the PCC.

6.0 Estimate Costs

Costs for implementing the various alternatives will be estimated. The costs will include construction, land acquisition for easements and rights-of-way, annexation, financing, and environmental compliance.

7.0 Evaluate Funding Alternatives And Determine Project Feasibility

With the project alternatives and costs determined, the District will evaluate alternatives for funding implementation of the project. The alternatives for funding the project can affect the feasibility of the project. The alternatives for funding will be reviewed among the District and the landowners to determine if there is a funding alternative that is mutually acceptable to project participants.

8.0 Prepare Project Documents

With the project determined to be feasible, construction plans and specifications will be prepared for construction, descriptions prepared for easements and rights-of-way, and agreements executed among the project participants.

9.0 Construct Project

With all documents and funding in place, construction of the project can be initiated. The time for construction will be influenced by the approach for construction and weather.

SCHEDULE

A schedule for implementing Action I. follows.

BUDGET

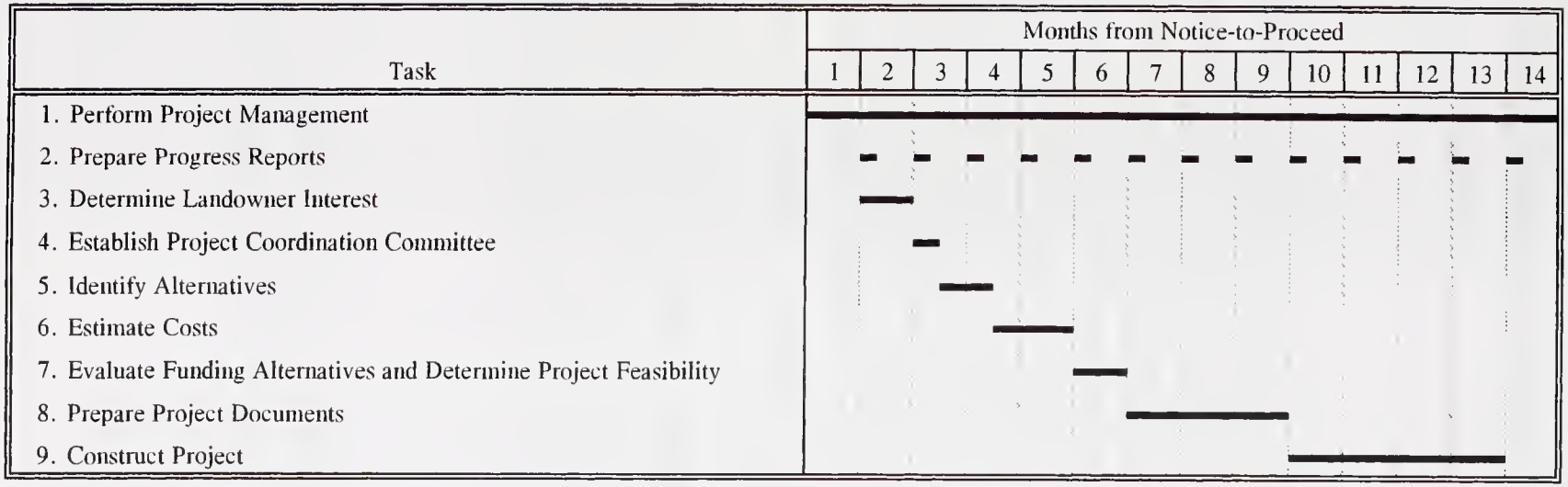
The estimated budget for this project, not including construction and acquisition of easements and rights-of-way, is $40,000.

YOLO COUNTY FLOOD CONTROL &
WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

ACTION I
DISTRICT-YOLO ZAMORA IN-LIEU RECHARGE PROJECT

SCHEDULE



YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

ACTION J. DUNNIGAN HILLS WATER NEED/OPTIONS

BACKGROUND

As noted in the Yolo County Water Plan - 1984, and the Water Plan Update - 1992, the Dunnigan Hills represents the largest area currently not irrigated, which could potentially impact water needs in Yolo County. In 1992, when the work was underway related to the Yolo Solano Supplemental Water Supply Investigation, the District conducted a survey, by mail, to determine the extent of the interest in water supplies. The interest expressed by those that responded, amounted to an increase of nearly 17,000 acre-feet annually over their existing use of 5,600 acre-feet. Approximately 6,000 acre-feet of the future use was indicated for residential use. Of the 9,478 acres represented by responding landowners, those representing 1,055 acres were not interested. The majority of the existing and future use was indicated to be for agricultural purposes; however, 1,540 acres were identified for residential use.

The grape vines and wine industry in the Dunnigan Hills area is very prominent and expanding. From the standpoint of Yolo County's future, the water needs for the Dunnigan Hills area warrants attention. The Dunnigan Hills are within the sphere of influence of the District, thus it is appropriate for the District to investigate future water needs and options for the area.

PURPOSE

The purpose of Action J. is to determine if there is a genuine interest of landowners in the Dunnigan Hills area for water for agricultural purposes and, if so, determine the feasibility of providing water service.

1.0 Perform Project Management

The Project Manager is responsible for coordinating and scheduling work to implement Action J., manage the work and budget, and prepare status reports.

2.0 Prepare Status Reports

Status reports will be prepared monthly. The status reports will describe the activities or work completed during the report period and that which is expected to be completed in the next report period.

3.0 Determine Landowner Interest

The District will apprise the Dunnigan Hills area of the expressed interest of landowners to receive water from the District for irrigation. The landowners within the potential service area will be contacted by mail with a notice of a meeting. The purpose of the meeting is to discuss the prospects of a project and to determine the level of interest in participating in a project to receive supplemental water from the District. If sufficient interest is expressed by landowners to pursue a project, LAFCO should be advised of the prospects of the project and potential deannexation/annexation.

4.0 Establish Project Coordinating Committee

If landowners are interested in a project to furnish surface water, a Project Coordinating Committee (PCC) will be established, which will include representatives of the District and landowners. The PCC will be established to facilitate communication between the parties through implementation of the project. The PCC will meet as often as deemed appropriate

to keep all parties informed of the project and to guide the work and process. The PCC will determine the schedule and scope of meetings of the PCC and landowners at large.

5.0 Identify Alternatives

Alternatives that could be considered for providing water to the Dunnigan Hills include the diversion of water from Cache Creek for use directly or to provide storage and divert and store water from Cache Creek in the winter and use it during the summer. Storage on Oak Creek and Bird Creek could be evaluated for this purpose. Water that could be developed through the District's Cache Creek Groundwater Recharge/Recovery Project (Action G.) could be considered for use in the Dunnigan Hills. Other alternatives could include water from the Tehama Colusa Canal if a project involving Sites Reservoir were to be implemented through CalFed. The availability and reliability of the various alternatives will be examined.

6.0 Estimate Costs

Costs for implementing the various alternatives will be estimated. The costs will include construction, land acquisition for easements and rights-of-way, annexation, financing, and environmental compliance.

7.0 Evaluate Funding Alternatives and Determine Project Feasibility

With the project alternatives and costs determined, the District will evaluate alternatives for funding implementation of the project. The alternatives for funding the project can affect the feasibility of the project. The alternative for funding will be reviewed among the District and the landowners to determine if there is a funding alternative that is mutually acceptable to the project participants.

8.0 Prepare Project Documents

With the project determined to be feasible, construction plans and specifications will be prepared for construction, descriptions prepared for easements, and rights-of-way and agreements executed among the project participants.

9.0 Construct Project

With all documents and funding in place, construction of the project can be initiated. The time for construction will be influenced by the approach for construction and weather.

SCHEDULE

A schedule for implementing Action J. follows.

BUDGET

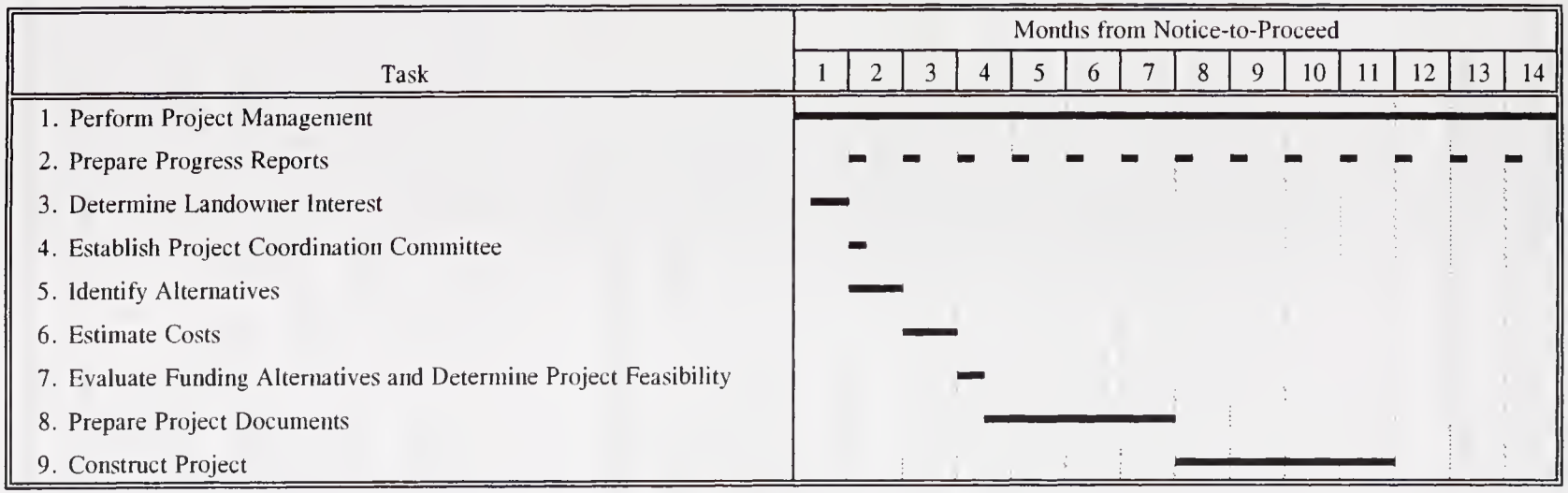
The estimated budget for determining the feasibility of this project, not including construction and acquisition of easements and rights-of-way, is $40,000.

YOLO COUNTY FLOOD CONTROL &
WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

ACTION J
DUNNIGAN HILLS WATER NEEDS/OPTIONS

SCHEDULE



YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

ACTION K. DROUGHT MANAGEMENT PREPAREDNESS

BACKGROUND

Water users within the District and Yolo County generally, came through the recent dry periods of 1976-77 and 1987-1992, reasonably well. The completion of Indian Valley Dam and Reservoir in 1975, has significantly improved the water supply within the District beyond what was available at the time of the 1976-77 dry period. During both dry periods, the urban areas implemented water conservation programs and agriculture responded by altering the cropping pattern, fallowing more land, installing new wells, and lowering pump bowls in existing wells. The District established a water conservation committee comprised of District water users to provide guidance in the handling of the surface water supplies available.

The District recognizes that dry periods can occur that are more severe than any experienced in recent years, in both relative dryness and duration. Extended periods of normal weather conceal the vulnerability of our economy to climate variability while drought exposes these sensitivities. At the same time, the District also recognizes that developing water supplies to cover extraordinarily dry conditions is not affordable.

The State of California has delegated drought preparedness to local authorities. In the event a more severe dry period does occur, the District's question is, "What do we do?" In this situation, the District will not have surface water available and all water needs will be met with groundwater. The groundwater basin will be stressed to a greater extent than has occurred historically, thus creating the potential for additional irreversible subsidence or water quality deterioration. Although the onset and the end of a drought are difficult to identify, preparedness for a severe drought should be planned in advance. Unfortunately, it is difficult to instill interest in people in developing a meaningful program of this nature in advance of a problem or critical situation emerging. The lack of a precise and objective definition of a drought is an obstacle that

has led to indecision and/or inaction on the part of water managers, politicians, and water users. The traditional mind set is to deal with drought when it has peaked and when water management options are limited. This approach has been referred to as the "hydro-illogical cycle," where actions are reactive, poorly planned, and poorly executed thereby resulting in undesirable economic and environmental impacts.

PURPOSE

The purpose of Action K. is to use the benefit of time and "normal" hydrologic conditions to plan a meaningful program to minimize adverse impacts of a drought that is more severe than any recorded in Yolo County to date.

WORK PLAN

Action K. differs from other actions in that a drought is not as defined or definable as other natural disasters, such as floods. For this reason, it is more difficult to conduct a meaningful discussion of "what if" scenarios. Nevertheless, implementation of this Water Management Plan, including Action A. (Public Relations Program) and Action B. (Agricultural Water Users Workshops), will provide the opportunity to address this subject on an ongoing basis. Furthermore, implementation of the District's Water Management Plan will result in a much broader awareness of potential problems and opportunities for the agricultural and urban communities to work together in a way that is mutually beneficial when confronted with extraordinary water supply situations.

For reasons stated above, the work plan for Action K. remains very general and is left to be defined as the District implements its Water Management Plan. When appropriate, in the various forums that will exist, it is recommended the subject of drought management be discussed with consideration given to the following:

1. Having entities or individuals pumping groundwater, make their own decisions on when to pump and how much to pump irrespective of the groundwater situation.

2. Having a program whereby agricultural water users work together to distribute pumping so as to effect the uniform lowering of groundwater levels.

3. Having a program whereby agricultural and urban water users work together to distribute pumping to minimize the lowering of groundwater in areas subject to land subsidence.

4. Having a program whereby agricultural water users work together to concentrate pumping in areas where: (a) recharge occurs most readily; (b) the area is not susceptible to land subsidence; or (c) land subsidence would not be harmful.

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

ACTION L. WATER MANAGEMENT AND OPERATIONS REPORT

BACKGROUND

The District's Engineer prepares a report annually that generally addresses the groundwater situation in the District and other water-related activities with which the Engineer may have been involved. The District, however, is involved in numerous water-related activities that do not get reported formally. As a consequence, individuals or various interest groups, because they have not taken time or made an effort to learn of the District's work, are not well informed.

Implementing this Water Management Plan will generate a great deal of activity and information that should be documented on an annual basis. Preparing an annual Water Management Report will be an invaluable document for informing interested parties, within and outside the County, of District water management programs as well as its water supply operations and groundwater situation.

PURPOSE

The purpose of Action L. is to expand the scope and content of the District's Engineer's Report to be a more comprehensive Water Management Report.

WORK PLAN

1.0 Perform Project Management

The preparation of the Water Management Report should be treated as any other significant project and have an assigned Program Manager who is responsible for identifying the format

and content of the document. The Program Manager is also responsible for scheduling and coordinating input from parties that may be best prepared to draft portions of the report.

2.0 Prepare Status Reports

Status reports should be prepared monthly. The status report will include an outline which identifies the content of the annual report as the year progresses.

The status report for October will include the outline for that years' annual report. It will also identify the individuals that are responsible for compiling information, preparing particular sections of the report, and the dates for completing drafts.

3.0 Determine Report Content

The annual report will contain information on items that will be reported on a routine basis each year. This includes items such as reservoir operations, water sales, groundwater situation, etc. Also, the report will contain information on activities related to special projects or activities. These activities may be action items included in this Water Management Plan or others that emerge from time to time.

4.0 Prepare Report

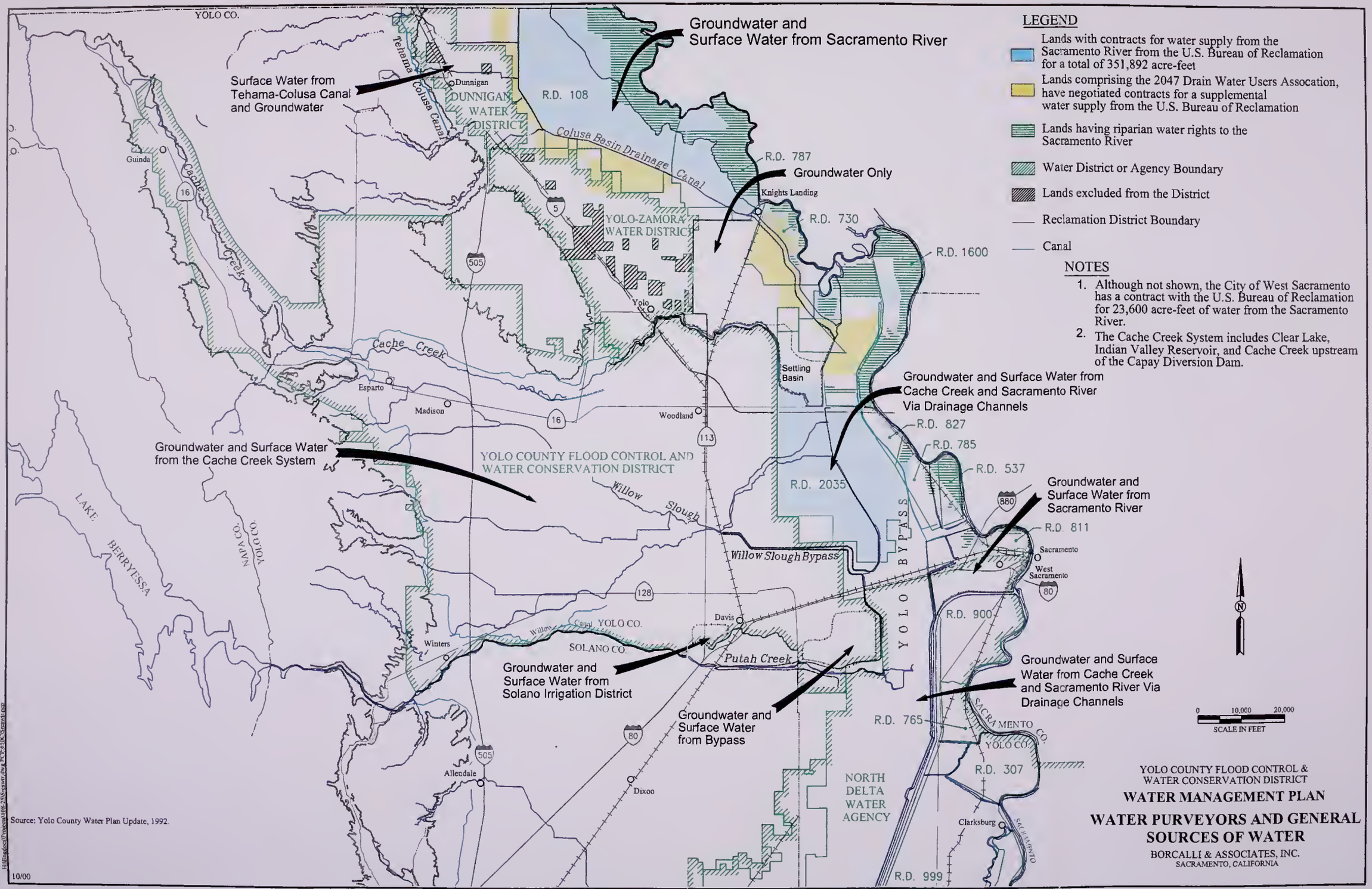
The annual Water Management Report will be prepared by year end for presentation to the District Board of Directors. Following presentation to and acceptance by the Board of Directors, the report will be available to the public and interested parties.

BUDGET

The estimated budget for preparation and publication of the annual report is $10,000 to $15,000.

CLEAR LAKE WITH THURSTON LAKE IN FOREGROUND

MAPS



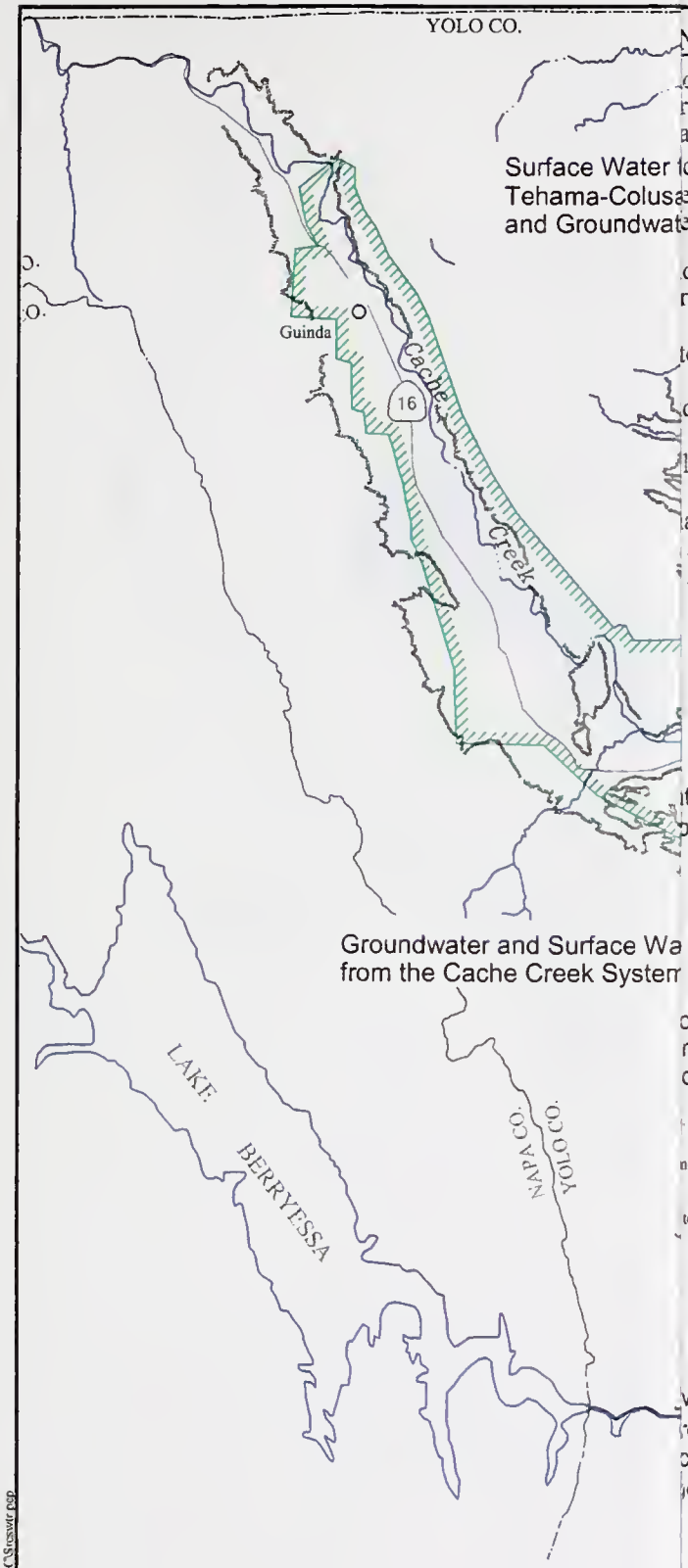
YOLO COUNTY FLOOD CONTROL &
WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

WATER PURVEYORS AND GENERAL SOURCES OF WATER

BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

MAP 1



ND

ds with contracts for water supply from the
ramento River from the U.S. Bureau of Reclamation
a total of 351,892 acre-feet

Surface Water ds comprising the 2047 Drain Water Users Assocation,
Tehama-Colusa negotiated contracts for a supplemental
and Groundwater supply from the U.S. Bureau of Reclamation

ds having riparian water rights to the
ramento River

ter District or Agency Boundary

ds excluded from the District

lamation District Boundary

al

NOTES

1. Although not shown, the City of West Sacramento has a contract with the U.S. Bureau of Reclamation for 23,600 acre-feet of water from the Sacramento River.
2. The Cache Creek System includes Clear Lake, Indian Valley Reservoir, and Cache Creek upstream of the Capay Diversion Dam.

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Groundwater and Surface Wa
from the Cache Creek System

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cramento River

811

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water and Surface
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N

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SCALE IN FEET

Source: Yolo County Water Plan Update, 1992.

10/00

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YOLO COUNTY FLOOD CONTROL &
WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

WATER PURVEYORS AND GENERAL SOURCES OF WATER

BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

MAP 1

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

CACHE CREEK WATERSHED ABOVE CAPAY DIVERSION DAM

BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

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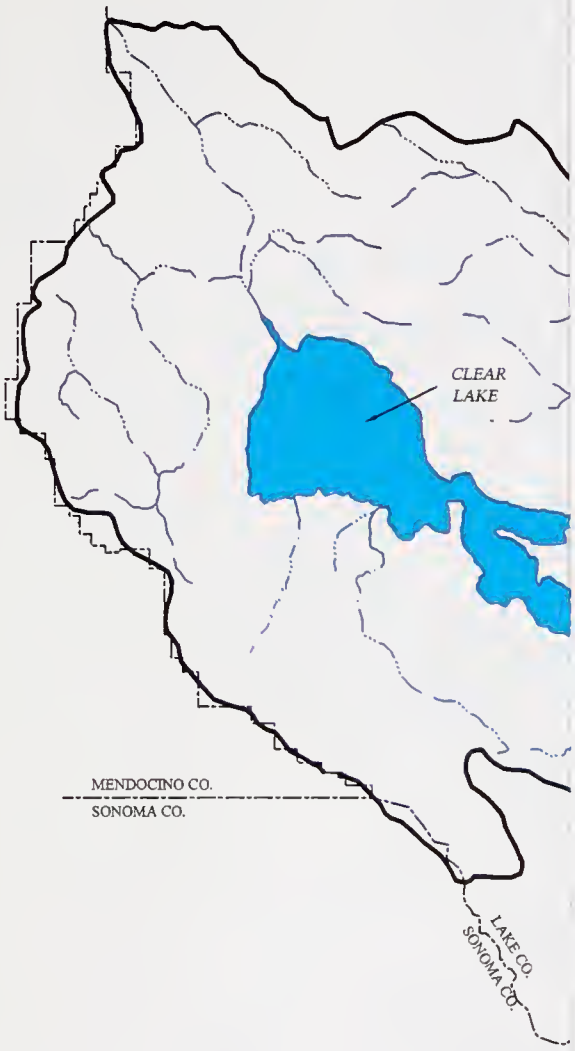
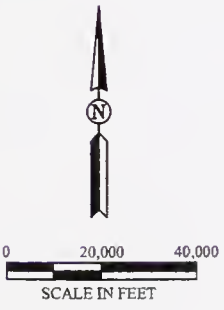
MAP 2



LEGEND

- Waterways/Creeks
- Boundary of Watershed
- County Line



YOLO COUNTY FLOOD CONTROL &
WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

CACHE CREEK WATERSHED ABOVE CAPAY DIVERSION DAM

BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

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MAP 2

LEGEND

- Waterways/Creek
- Canals
- Boundary of Watershed
- Groundwater Monitoring Wells
- 11N/01E-15C01 — Groundwater Monitoring Well with Hydrograph in Report

N

0 10,000 20,000
Scale in Feet

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

GROUNDWATER MONITORING WELLS

BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

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MAP 3

LEGEND

- Waterways/Creek
- Canals
- Boundary of Watershed
- Groundwater Monitoring Wells
- Groundwater Monitoring Well with Hydrograph in Report

N

0 10,000 20,000
Scale in Feet

YOLO COUNTY FLOOD CONTROL &
WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

GROUNDWATER MONITORING WELLS

BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

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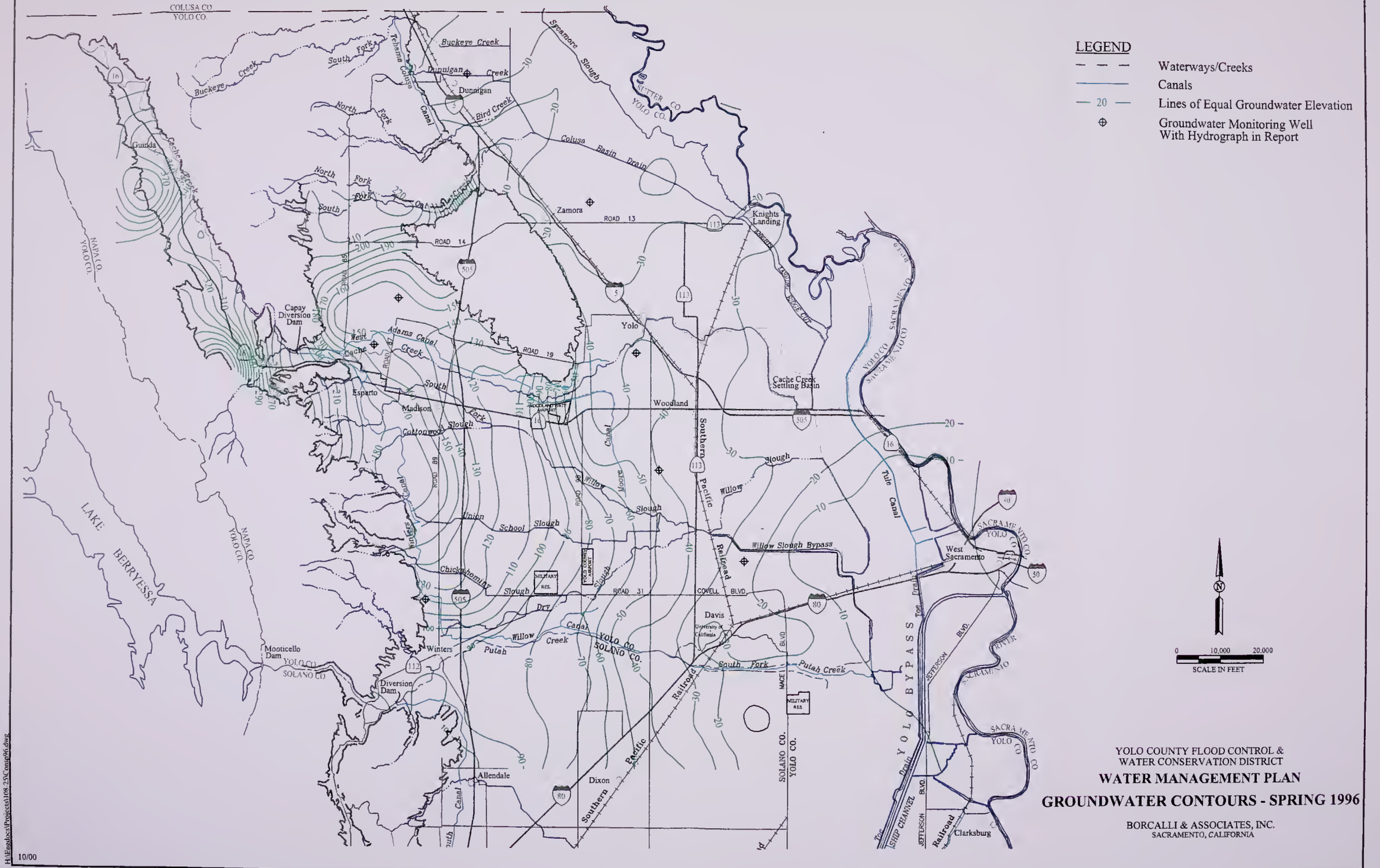
MAP 3



YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

GROUNDWATER CONTOURS - SPRING 1996

BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

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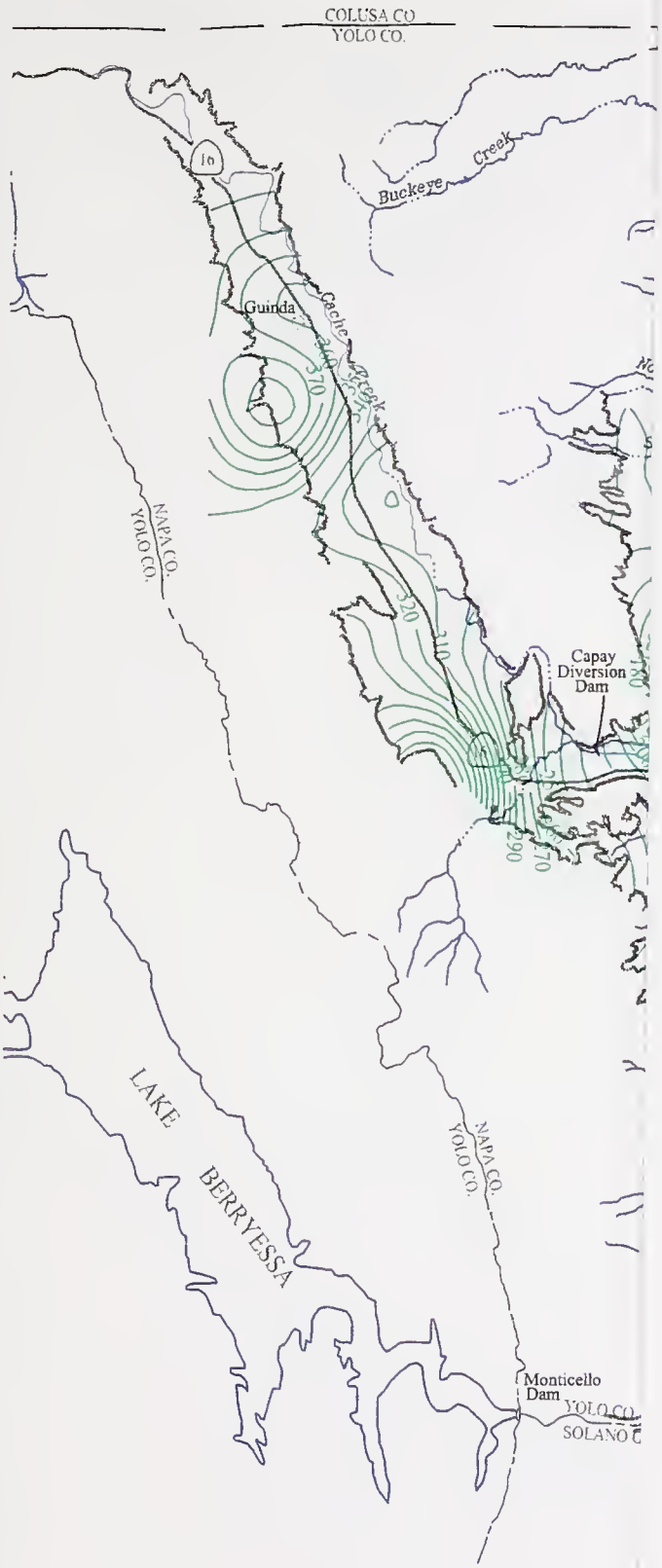
MAP 4



LEGEND

- Waterways/Creeks
- Canals
- 20 — Lines of Equal Groundwater Elevation
- ⊕ Groundwater Monitoring Well With Hydrograph in Report

N

0 10,000 20,000

SCALE IN FEET

YOLO COUNTY FLOOD CONTROL &
WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

OUNDWATER CONTOURS - SPRING 1996

BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

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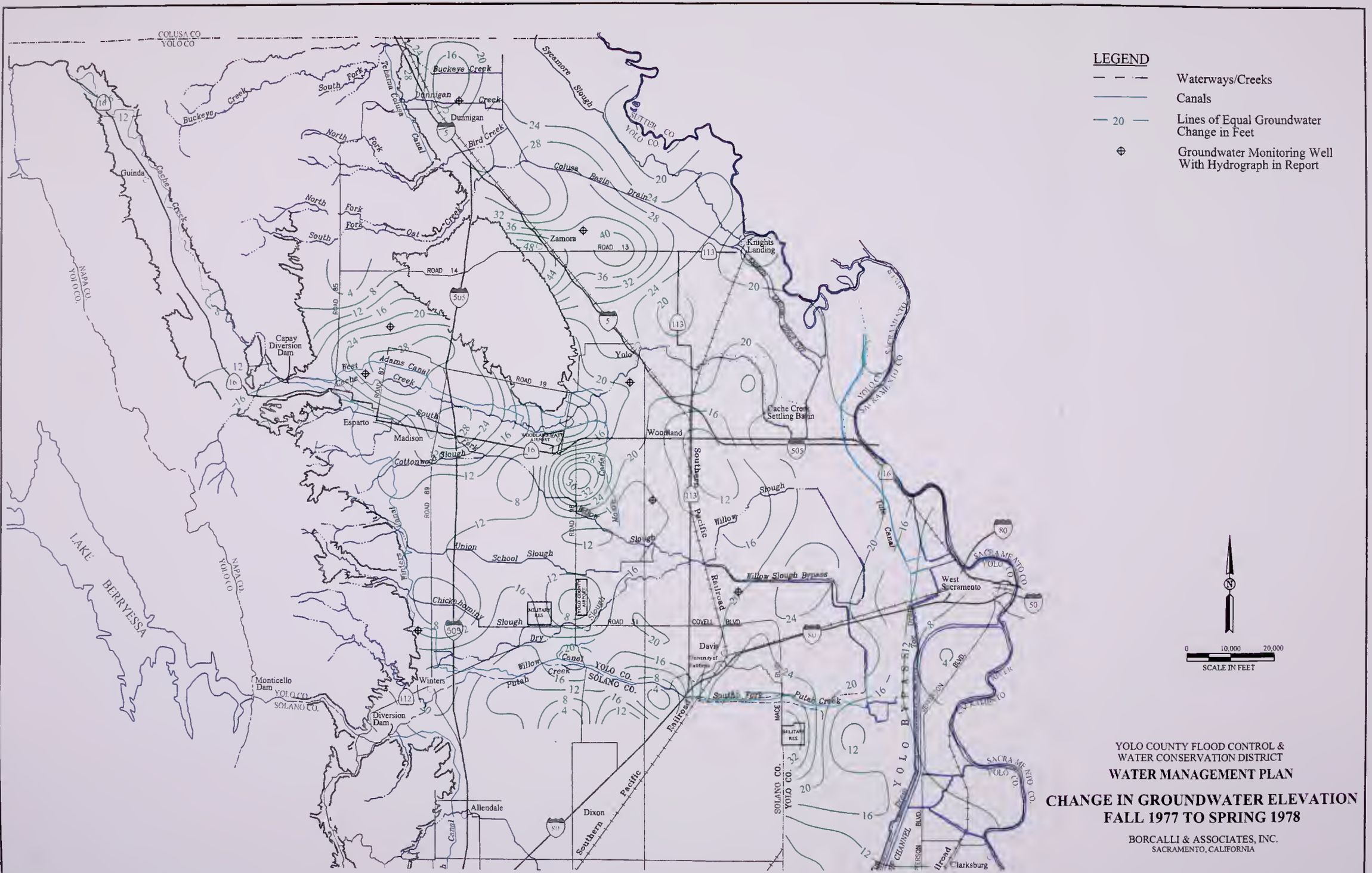
MAP 4


LEGEND
Waterways/Creeks
Canals
20
Lines of Equal Groundwater Change in Feet
Groundwater Monitoring Well With Hydrograph in Report
COLUSA CO
YOLO CO
SUTTER CO
YOLO CO
NAPA CO
YOLO CO.
LAKE
BERRYESSA
NAPA CO
YOLO CO
YOLO CO.
SOLANO CO.
SOLANO CO.
YOLO CO.
SACRAMENTO
YOLO CO.
Buckeye Creek
Sycamore Slough
South Fork
Buckeye Creek
Tehama Colusa Canal
Dunnigan
Dunnigan Creek
Bird Creek
North Fork
Cache Creek
Guinda
Colusa Basin Drain
North Fork
South Fork
Oat Creek
Zamora
ROAD 13
ROAD 14
Knights Landing
Capay Diversion Dam
West Adams Canal
Cache Creek
ROAD 87
ROAD 19
Yolo
Esparto
Madison
South Fork
Cottonwood Slough
Woodland
Cache Creek Settling Basin
Tule Canal
Sacramento River
Deep Water Ship Channel
Southern Pacific Railroad
Willow Slough
Slough
Union School Slough
Willow Slough Bypass
West Sacramento
Chickahominy Slough
Dry Slough
COVELL BLVD
Davis
University of California
Willow Slough Canal
Putah Creek
South Fork
Putah Creek
Winters
Monticello Dam
Diversion Dam
Fairfield
Allendale
Dixon
Southern Pacific Railroad
Yolo Bypass
Clarksburg
0
10,000
20,000
SCALE IN FEET
YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT
WATER MANAGEMENT PLAN
CHANGE IN GROUNDWATER ELEVATION
FALL 1977 TO SPRING 1978
BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA
10/00
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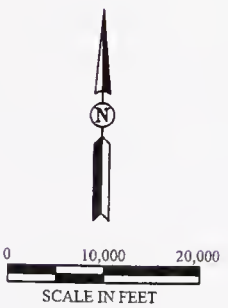
LEGEND

- Waterways/Creeks
- Canals
- 20 — Lines of Equal Groundwater Change in Feet
- ⊕ Groundwater Monitoring Well With Hydrograph in Report



YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

HANGE IN GROUNDWATER ELEVATION FALL 1977 TO SPRING 1978

BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

10/00

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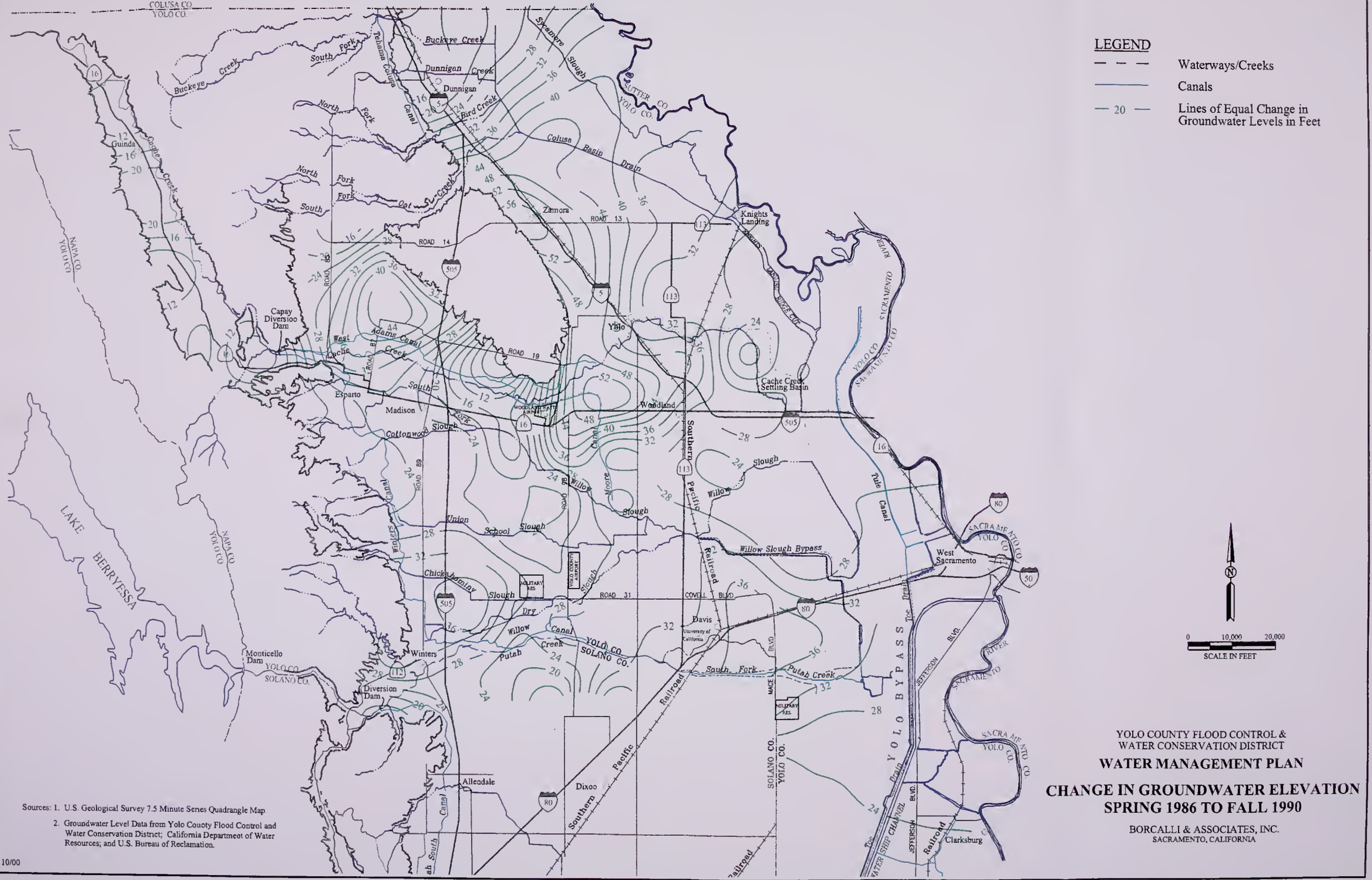
MAP 5


LEGEND
Waterways/Creeks
Canals
20
Lines of Equal Change in Groundwater Levels in Feet
0
10,000
20,000
SCALE IN FEET
Sources: 1. U.S. Geological Survey 7.5 Minute Series Quadrangle Map.
2. Groundwater Level Data from Yolo County Flood Control and Water Conservation District; California Department of Water Resources; and U.S. Bureau of Reclamation.
10/00
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YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT
WATER MANAGEMENT PLAN
CHANGE IN GROUNDWATER ELEVATION
SPRING 1986 TO FALL 1990
BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

MAP 6

LEGEND

- Waterways/Creeks
- Canals
- 20 — Lines of Equal Change in Groundwater Levels in Feet

N

0 10,000 20,000

SCALE IN FEET

Sources: 1. U.S. Geological Survey 7.5 Minute Series Quadrangle Map.

2. Groundwater Level Data from Yolo County Flood Control and Water Conservation District; California Department of Water Resources; and U.S. Bureau of Reclamation.

10/00

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

ANGE IN GROUNDWATER ELEVATION SPRING 1986 TO FALL 1990

BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

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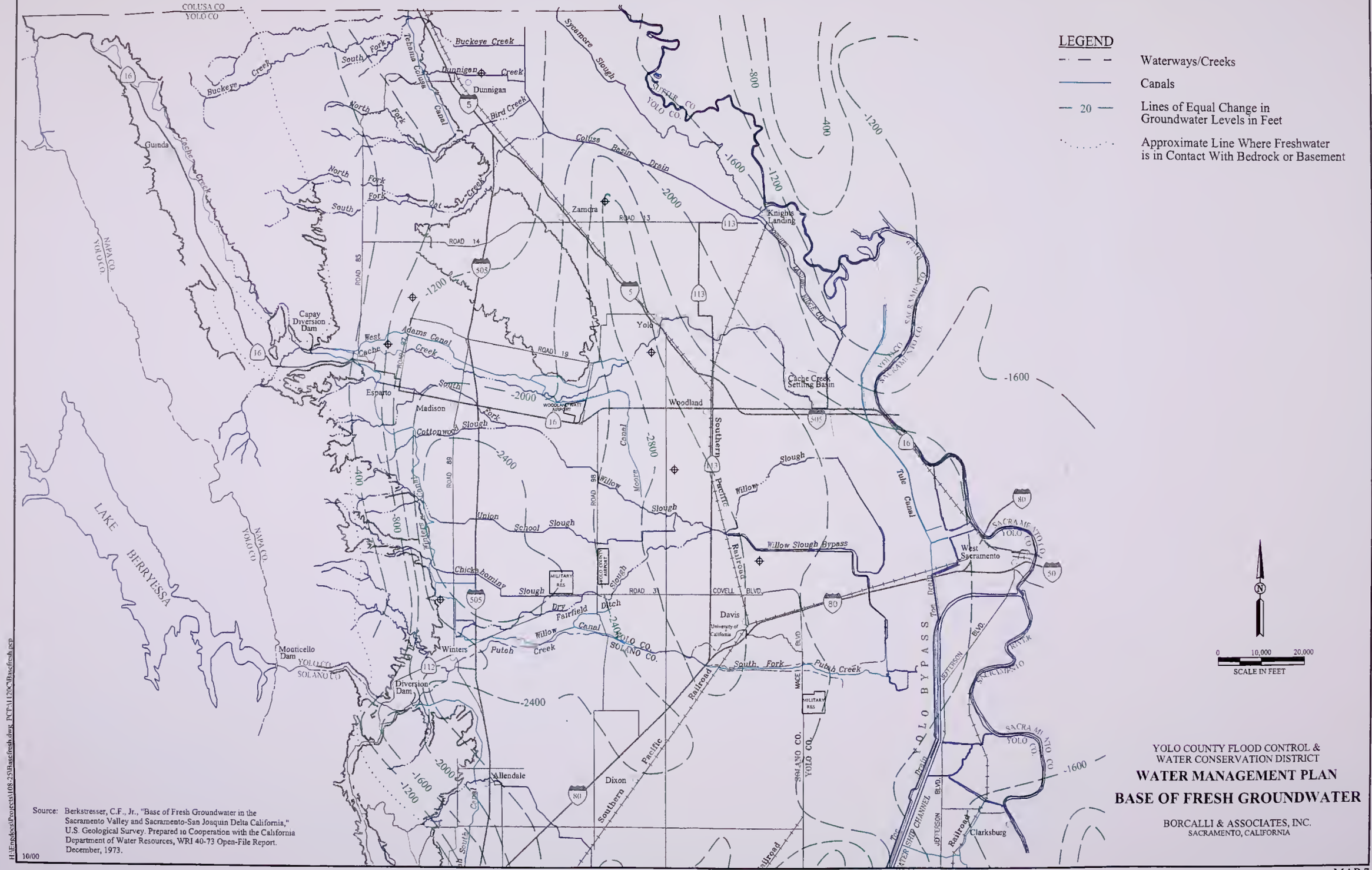

Source: Berkstresser, C.F., Jr., "Base of Fresh Groundwater in the Sacramento Valley and Sacramento-San Joaquin Delta California," U.S. Geological Survey. Prepared in Cooperation with the California Department of Water Resources, WRI 40-73 Open-File Report. December, 1973.

10/00

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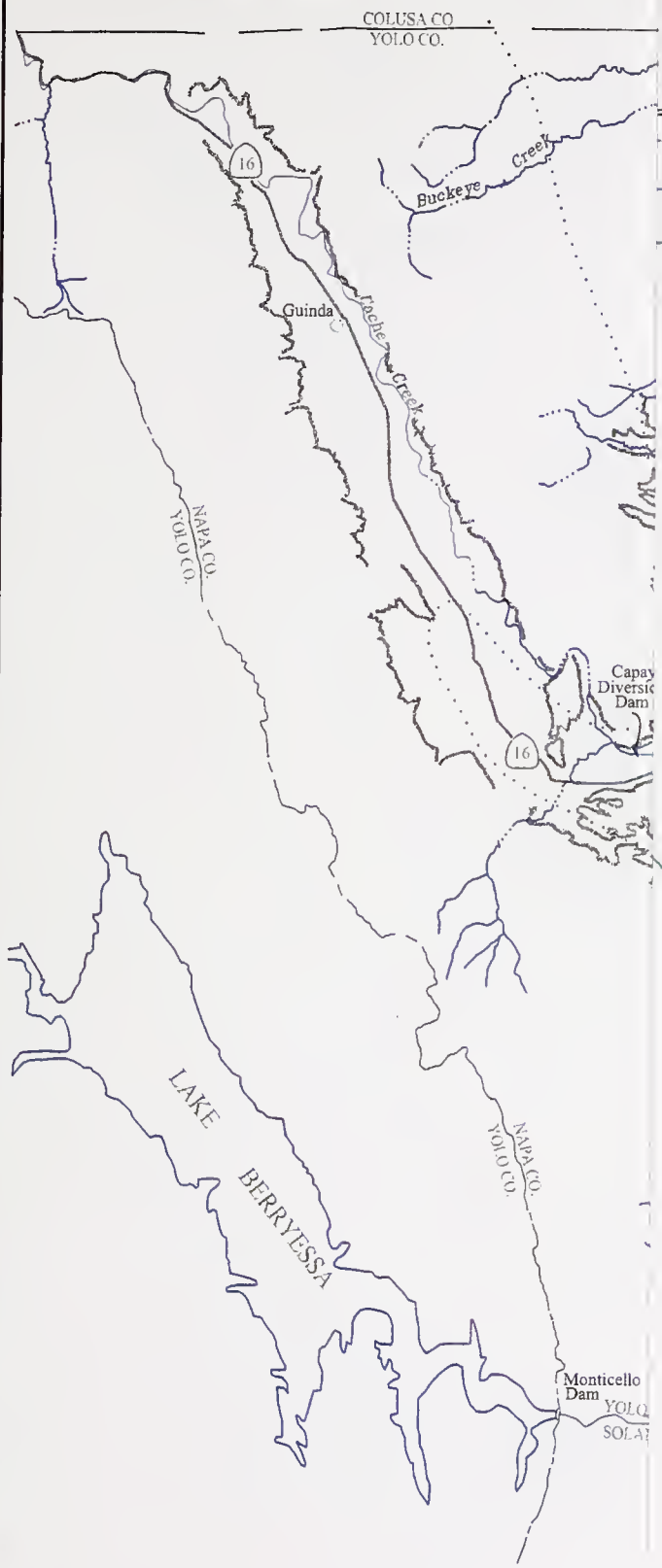
YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

BASE OF FRESH GROUNDWATER

BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA



LEGEND

Waterways/Creeks

Canals

20 — Lines of Equal Change in Groundwater Levels in Feet

Approximate Line Where Freshwater is in Contact With Bedrock or Basement

N

0 10,000 20,000

SCALE IN FEET

Source: Berkstresser, C.F., Jr., "Base of Fresh Groundwater in the Sacramento Valley and Sacramento-San Joaquin Delta California," U.S. Geological Survey. Prepared in Cooperation with the California Department of Water Resources, WRI 40-73 Open-File Report. December, 1973.

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

BASE OF FRESH GROUNDWATER

BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

10/00

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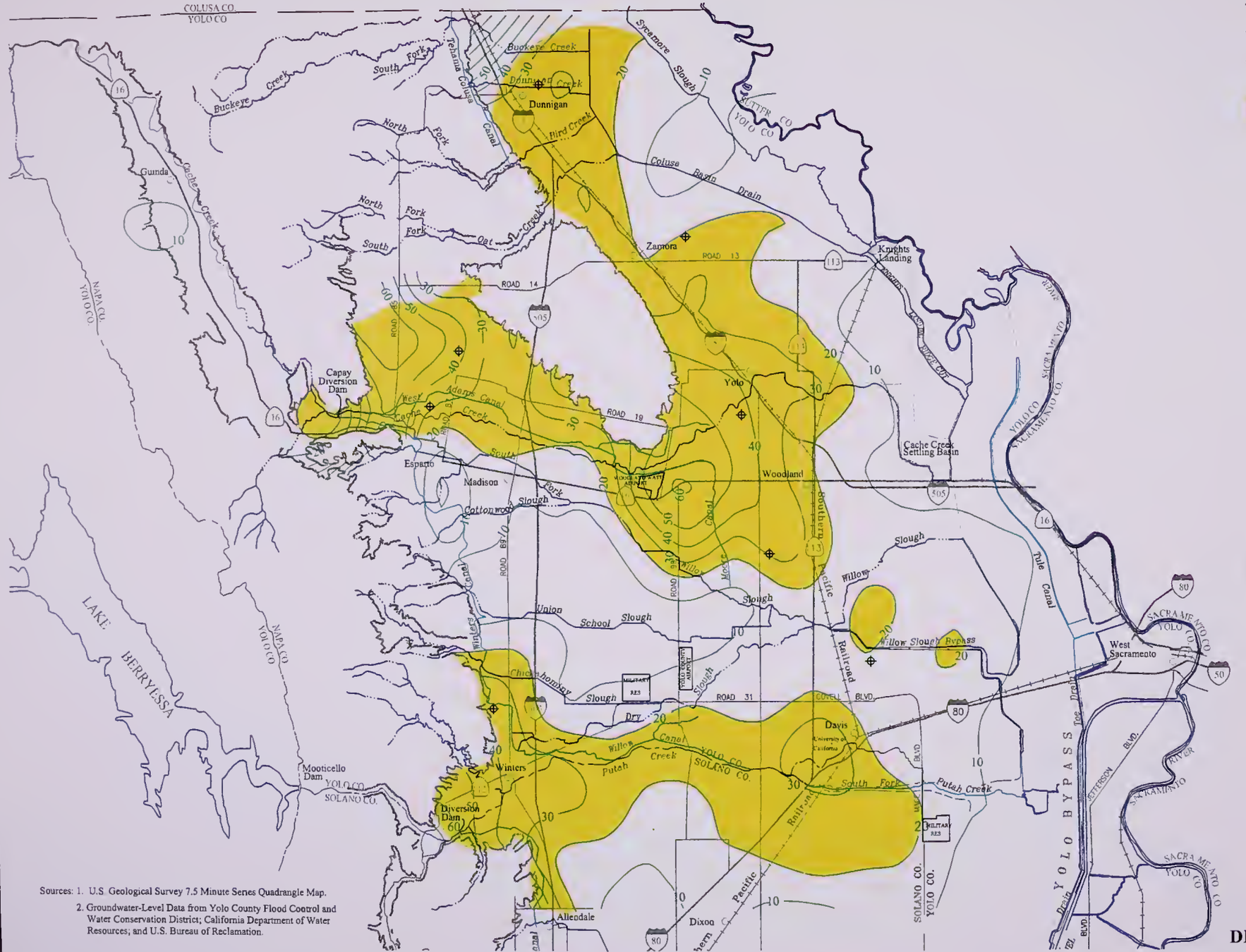


Sources: 1. U.S. Geological Survey 7.5 Minute Series Quadrangle Map.

2. Groundwater-Level Data from Yolo County Flood Control and Water Conservation District; California Department of Water Resources, and U.S. Bureau of Reclamation.

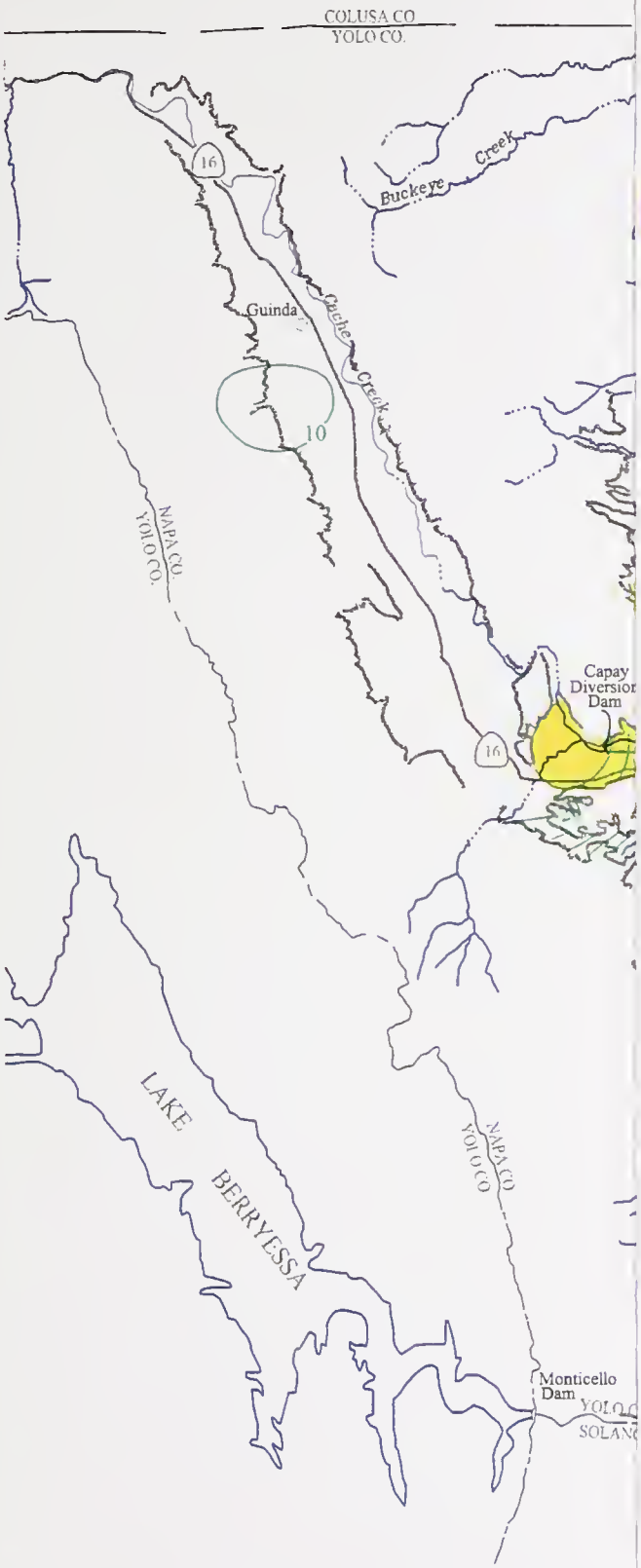
YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

DEPTH TO GROUNDWATER - SPRING 1996

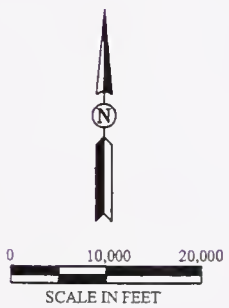
BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

10/00



LEGEND

- Waterways/Creeks
- Canals
- 20 — Lines of Equal Groundwater Change in Feet
- Area Where Spring Groundwater Level is Greater Than 20 Feet Below Ground
- ⊕ Groundwater Monitoring Well With Hydrograph in Report



Sources: 1. U.S. Geological Survey 7.5 Minute Series Quadrangle Map.

2. Groundwater-Level Data from Yolo County Flood Control and Water Conservation District; California Department of Water Resources; and U.S. Bureau of Reclamation.

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN

EPTH TO GROUNDWATER - SPRING 1996

BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

10/00

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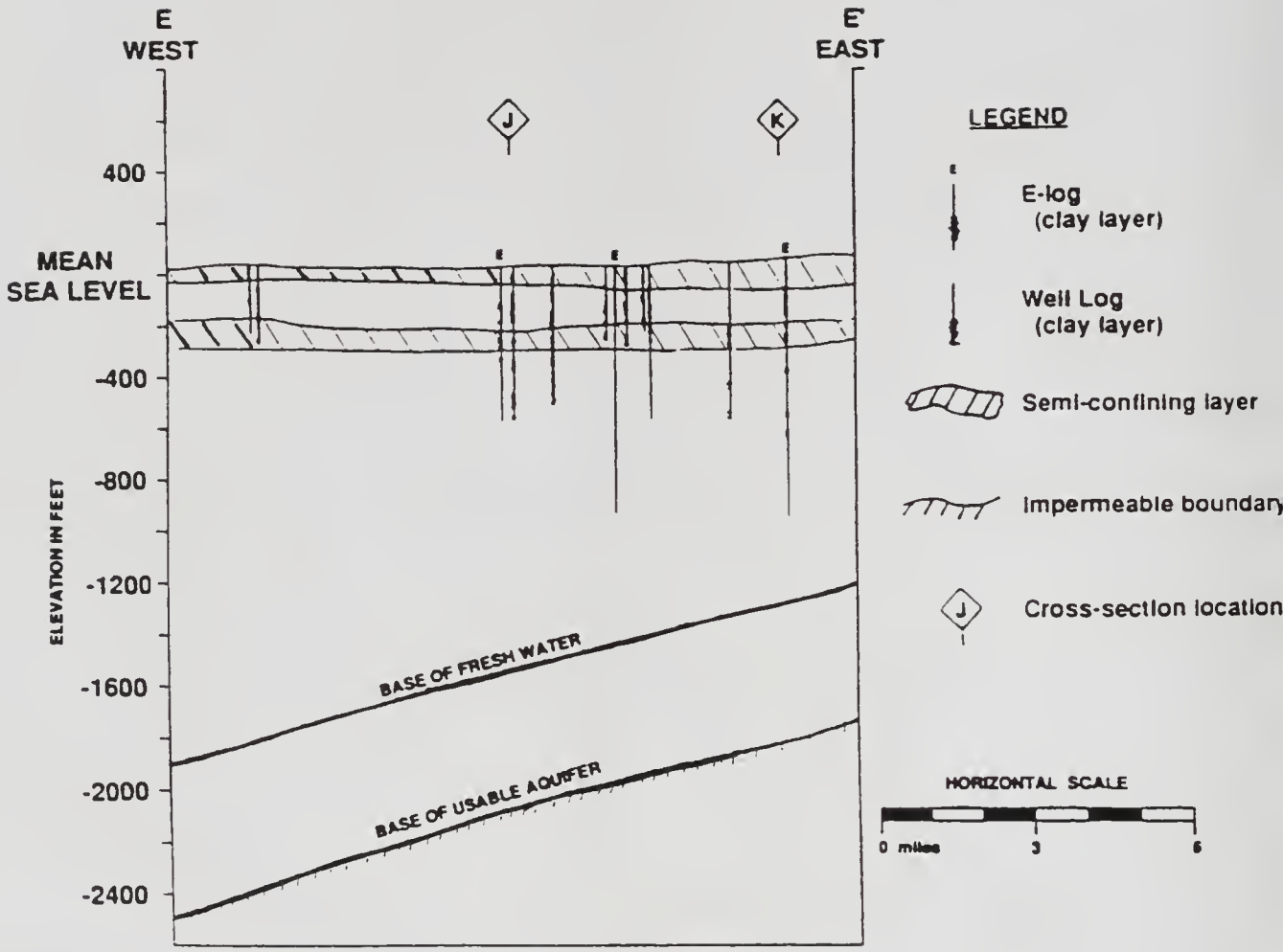
APPENDIX A

SACRAMENTO COUNTY GROUNDWATER CONTOURS AND CROSS SECTIONS

-Mean Sea Level-

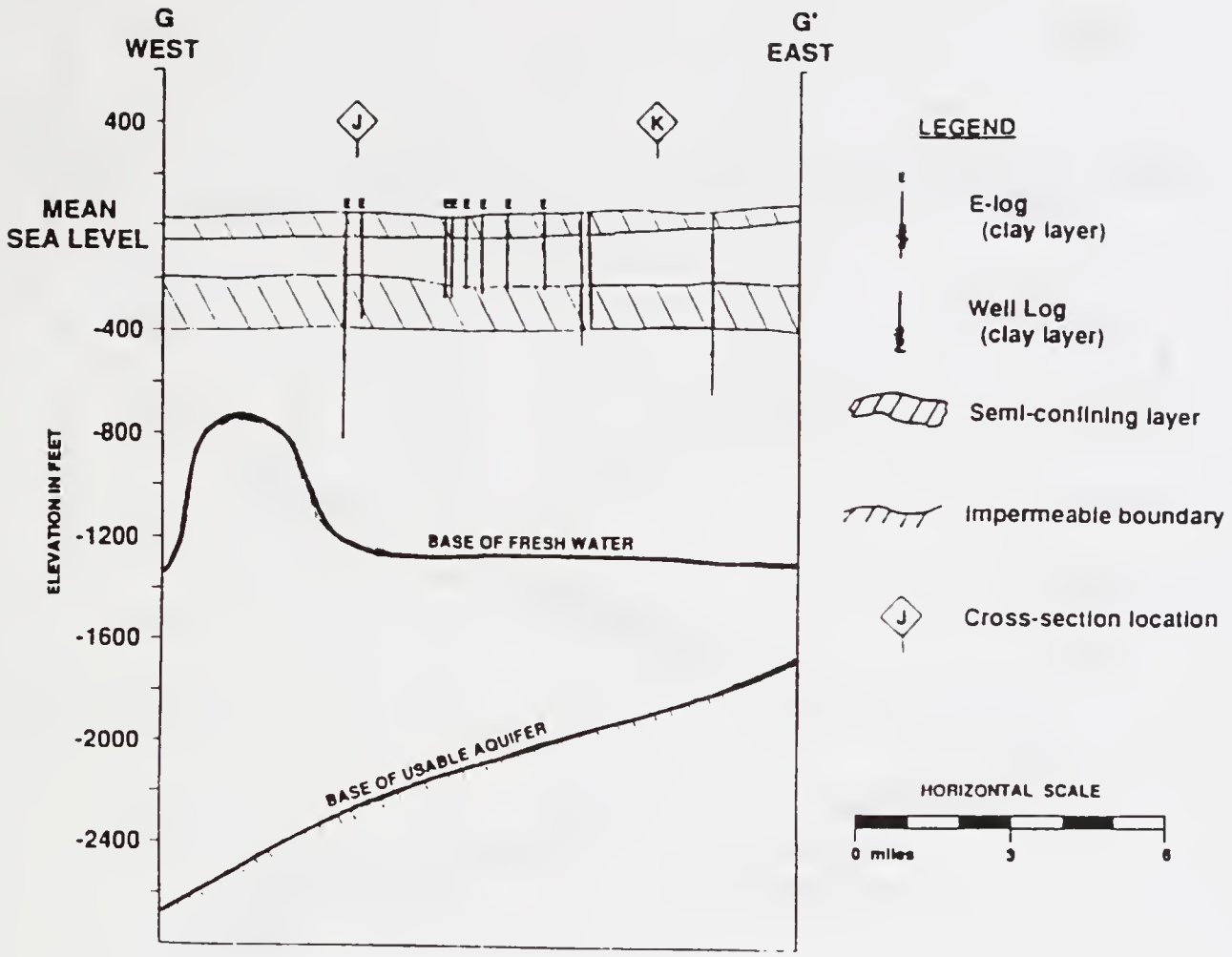
Sacramento County Groundwater elevations, Fall 1991
Figure 2-7

Source: Montgomery Watson, Sacramento County Water Agency, County Groundwater Model, "Model Development and Basin Groundwater Yield," June 1993



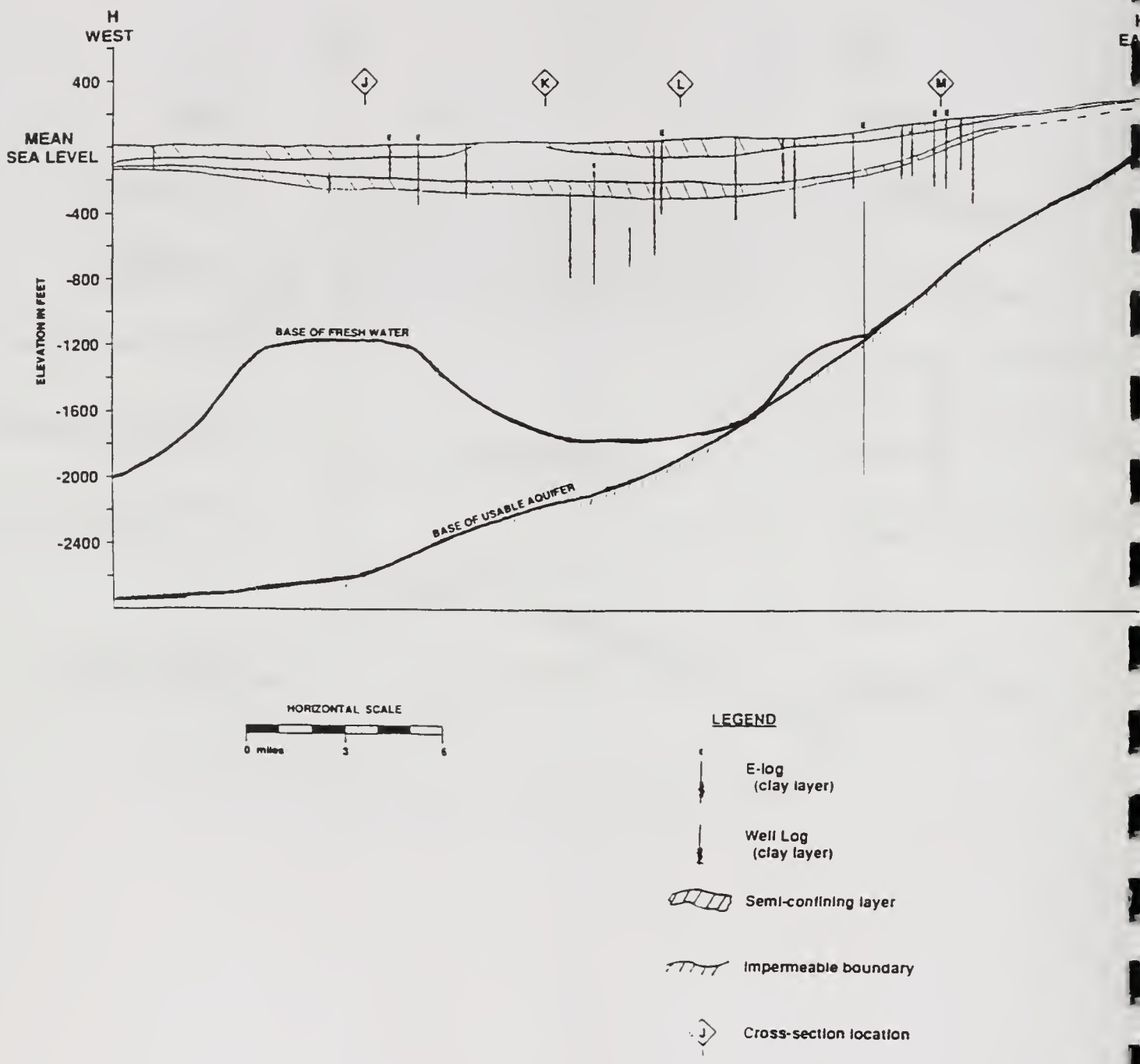
Geologic Cross Section E-E
Figure 2-5e

Source: Montgomery Watson, Sacramento County Water Agency, County Groundwater Model, "Model Development and Basin Groundwater Yield," June 1993



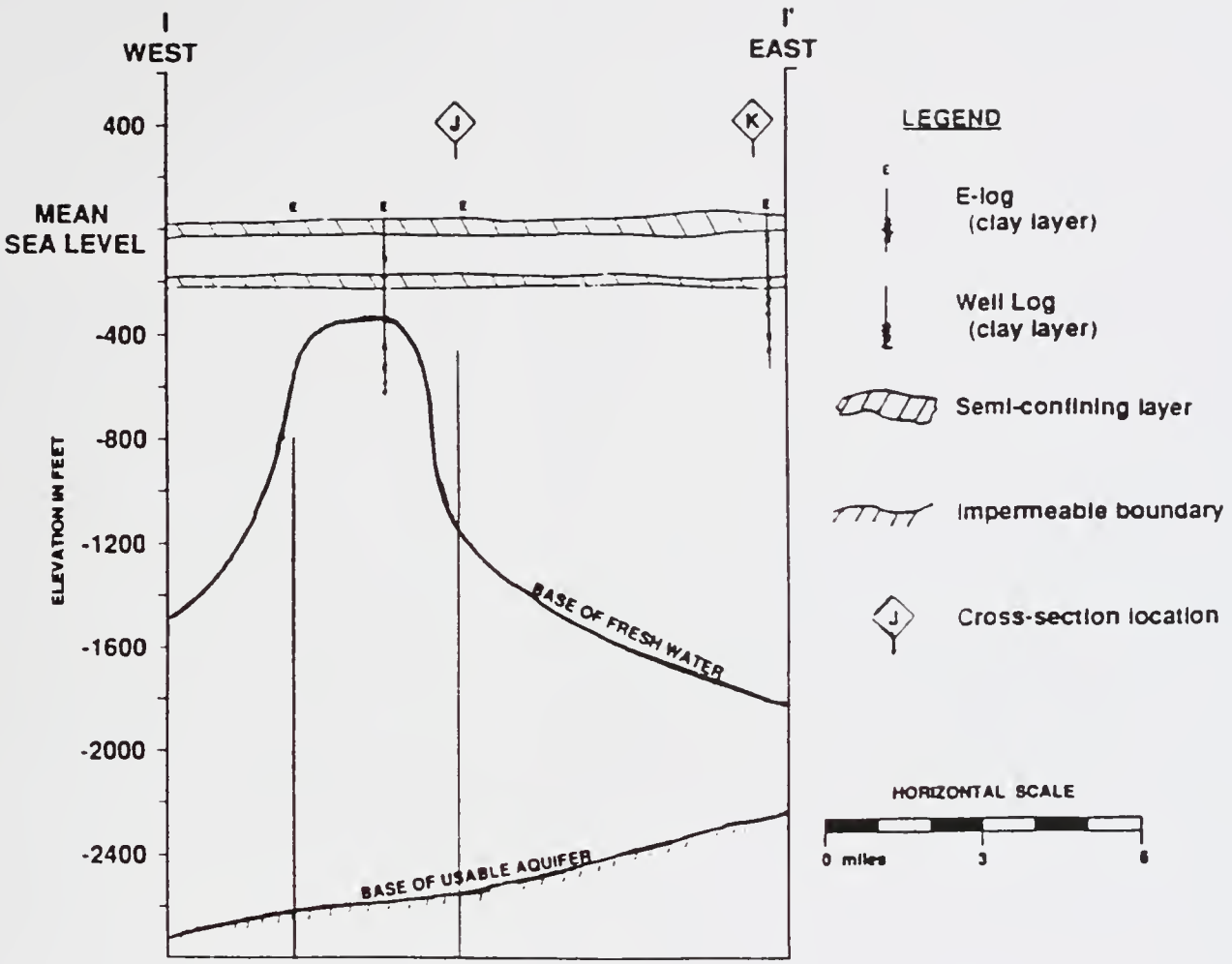
Geologic Cross Section G-G
Figure 2-5g

Source: Montgomery Watson, Sacramento County Water Agency, County Groundwater Model, "Model Development and Basin Groundwater Yield," June 1993



Geologic Cross Section H-H
Figure 2-5h

Source: Montgomery Watson, Sacramento County Water Agency, County Groundwater Model, "Model Development and Basin Groundwater Yield," June 1993



Geologic Cross Section I-I
Figure 2-5i

Source: Montgomery Watson, Sacramento County Water Agency, County Groundwater Model, "Model Development and Basin Groundwater Yield," June 1993

APPENDIX B

COMPARATIVE ASSESSMENT DISTRICT'S ACTION PROGRAM IN RELATION TO ELEMENTS OF AB 3030 AND AB 3616

APPENDIX B

COMPARATIVE ASSESSMENT

DISTRICT'S ACTION PROGRAM IN RELATION TO ELEMENTS OF AB 3030 AND AB 3616

A Water Management Plan (Plan) has been formulated which is tailored specifically to the Yolo County Flood Control & Water Management District (District) and the water management needs and opportunities within its jurisdiction and sphere of influence.

The District's Plan was not formulated pursuant to the process set forth in AB 3030[1] or as a signatory to the Memorandum of Understanding (MOU) developed pursuant to the terms of AB 3616[2]. The District's Plan includes provisions that are authorized for inclusion within AB 3616 and AB 3030. The Plan would therefore satisfy the requirements of an AB 3616 plan and an AB 3030 plan. The District's Plan, however, reflects the District's groundwater management activities authorized by the District Act, which are far more extensive than those authorized under AB 3030. For that reason, at this time the District's Plan relies on the groundwater and surface water management authority that are already granted to the District under the District Act. This appendix is provided to indicate to those interested how the District's Plan relates to and incorporates elements of AB 3030 and AB 3616, where applicable. Accordingly, a comparison of the District's Action Program is presented below for both AB 3030 and AB 3616.

---

[1] AB 3030, the Ground Water Management Act, was enacted into law in 1992 (Water Code Article 10700).

[2] AB 3616, the Agricultural Water Supplies Efficient Water Management Act, was enacted into law in 1990 (Water Code Article 10903).

AB 3030, the Ground Water Management Act - 1992

AB 3030 -- The Ground Water Management Act authorizes a local agency that provides water service to adopt and implement, by ordinance or resolution, a groundwater management plan for the purpose of managing a groundwater basin, or a portion thereof, that is not subject to groundwater management pursuant to other provisions of the law, in accordance with specified procedures.

As set forth in AB 3030, elements of a groundwater management plan may include components relating to any or all of the following:

(a) Control of saline water intrusion.

(b) Identification and management of wellhead protection areas and recharge areas.

(c) Regulation of the migration of contaminated groundwater.

(d) Administration of a well abandonment and well destruction program.

(e) Mitigation of conditions of overdraft.

(f) Replenishment of groundwater extracted by water producers.

(g) Monitoring of groundwater levels and storage.

(h) Facilitating conjunctive use operations.

(i) Identification of well construction policies.

(j) Construction and operation by the local agency of groundwater contamination cleanup, recharge, storage, conservation, water recycling, and extraction projects.

(k) Development of relationships with federal and state regulatory agencies.

(l) Review of land use plans and coordination with land use planning agencies to assess activities that create a reasonable risk of groundwater contamination.

Clearly, AB 3030 was enacted to provide a vehicle for local agencies that did not already possess the authority to engage in groundwater management activities. The District already possesses this authority.

Presented on Table B-1 is a matrix showing where elements of the District's Action Plan is consistent with elements that may be included in an AB 3030 groundwater management plan.

Processing of the groundwater management elements of the District Plan under AB 3030 rather than pursuant to existing authority in the District Act would not enhance or otherwise affect the Plan's effectiveness or utility. That is, it would not make the Plan "better" or more usable. In the future, the District has the ability to process the Plan under AB 3030 (which simply requires notice and a public hearing prior to adoption), if it determines it is advantageous to do so (e.g., if required by a state regulatory agency).

AB 3616, The Agricultural Water Suppliers Efficient Water Management Act

AB 3616 -- The Agricultural Water Suppliers Efficient Water Management Act required the Department of Water Resources (DWR) to:

- Establish an advisory committee of representatives from the California farming community, agricultural water suppliers, California Departments of Food and Agriculture and Water Resources, University of California, California State University, public interest groups, and other interested parties.

TABLE B-I

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN
COMPARATIVE ASSESSMENT -- DISTRICT'S ACTION PROGRAM IN RELATION TO ELEMENTS OF AB 3030

AB 3030 Elements		Action Programs											
		A Public Relations	B Ag Water Users Workshop	C Land/Water Use Surveillance	D Surface Water Monitoring	E G/W Monitoring	F CCRRP	G Sac River Diversion Project	H Dist/Wdld In-Lieu Recharge Project	I Dist/Yolo/Zamora In-Lieu Recharge Project	J Dunnigan Water Needs Options	K Drought Management Preparedness	L Water Mgmt Report
a	Control of Saline Water Intrusion	X		X		X	X	X	X	X		X	
b	Identification and Management of Wellhead Protection Areas and Recharge Areas	X	X		X		X	X					
c	Regulation of the Migration of Contaminated Groundwater	X				X		X	X				
d	Administration of a Well Abandonment and Well Destruction Program[1]	X											
e	Mitigation of Conditions of Overdraft	X	X	X	X	X	X	X	X	X	X	X	
f	Replenishment of Groundwater Extracted by Water Producers	X	X	X		X	X	X	X	X	X	X	
g	Monitoring of Groundwater Levels and Storage	X		X		X	X		X	X			
h	Facilitating Conjunctive Use Operations	X	X	X		X	X	X	X	X	X	X	
i	Identification of Well Construction Policies[2]	X											
j	Construction and Operation by the Local Agency of Groundwater Contamination Cleanup, Recharge, Storage, Conservation, Water Recycling, and Extraction Projects	X	X	X	X	X	X	X	X	X	X	X	
k	Development of Relationships with Federal and State Regulatory Agencies	X	X	X	X	X	X	X	X		X		X
l	Review of Land Use Plans and Coordination with Land Use Planning Agencies to Assess Activities that Create a Reasonable Risk of Groundwater Contamination[3]	X											

[1]The County, with guidelines from the state, administers well abandonment and well destruction.

[2]The County administers well construction policies and standards.

[3]This activity is an established procedure within the District's existing management and operation.

- Review potential efficient water management practices to determine which are feasible to achieve water conservation.

- Conduct cooperative studies on the effectiveness and efficiency of potential and implemented water management practices and use results for future recommendations.

Following six years of work, a MOU regarding efficient water management practices (EWMPs), was finalized on November 13, 1996. Signatories of the MOU are required to develop a Water Management Plan for implementing EWMPs. Three categories of EWMPs are to be included in the Water Management Plan. The three categories are as follows:

- Generally-applicable EWMPs, which are required of all water suppliers signatory to the MOU.

- Conditionally-applicable EWMPs, which are subject to a net benefit analysis.

- Other EWMPs, which are subject to a detailed net benefit analysis.

A list of EWMPs is associated with each of the three categories. Presented on Tables B-2, B-3, and B-4 are the lists of EWMPs for the respective categories with a discussion of how the District's Action Program relates to the EWMPs or how the EWMPs relates to the District.

TABLE B-2

YOLO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN
COMPARATIVE ASSESSMENT -- DISTRICT AND DISTRICT'S ACTION PROGRAM
IN RELATION TO AGRICULTURAL EWMPS - LIST A

Generally Applicable EWMPs	Comment
1. Prepare and Adopt a Water Management Plan	The District prepared a Water Management Plan that includes an Action Program, the elements of which deal with surface water and groundwater management and water use efficiency.
2. Designate a Water Conservation Coordinator	The District will designate a Water Conservation Coordinator upon adoption of the Water Management Plan.
3. Support the Availability of Water Management Services to Water Users	The District supported water management services provided by the U.S. Bureau of Reclamation and the Department of Water Resources. Implementation of Action B. will represent a more proactive approach on the part of the District to this end. Reports on activities and progress will be prepared annually through the District's implementation of Action L.
4. Improve Communication and Cooperation Amongst Water Suppliers, Water Users, and Other Agencies, Where Appropriate	The District is an active participant in the Water Resources Association of Yolo County, a strong advocate and supporter of the Water Awareness Program in schools, and Project H.A.W.K. (Habitat Alliance and Wildlife Keepers). Implementation of Actions A., B., and L. in conjunction with existing programs will advance the District's efforts in regard to this EWMP.
5. Evaluate the Need for Changes in Policies of the Institution to Which the Water Supplier is Subject	The District, in the interest of enhancing its water supply, continually evaluates opportunities, reasonable changes in policies, or regulations affecting its operation. Specific items include an evaluation of the operating rules for Indian Valley Dam and Reservoir and the decrees which dictate conservation operations of Clear Lake.
6. Evaluate and Improve Efficiencies of Water Suppliers' Pumps	The District currently does not own or operate wells to provide agricultural water supplies.

TABLE B-3

YOLO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN
COMPARATIVE ASSESSMENT -- DISTRICT AND DISTRICT'S ACTION PROGRAM
IN RELATION TO AGRICULTURAL EWMPS - LIST B

Conditionally Applicable EWMPs	Comment
1. Facilitate Alternative Land Use (for Control of Drainage Problems)	There is no appropriate application of the EWMP within the District.
2. Facilitate Use of Available Recycled Water	The principal wastewater dischargers within the District include the cities of Woodland and Davis and the University of California, Davis (UCD). Wastewater discharge from Davis and UCD is used beneficially in the summer months. The City of Woodland will be preparing a wastewater discharge plan in compliance with requirements of the Water Quality Control Board. Opportunities for recycling wastewater for agriculture will be examined.
3. Facilitate Financing Capital Improvements for On-farm Irrigation Systems	The District currently cooperates with the Resource Conservation District (RCD) by providing operators and equipment to implement EWMPs for the RCD Model Farm Program. The District's implementation of Action B. will further the District's efforts related to this EWMP.
4. Facilitate Voluntary Water Transfers that do not Unreasonably Affect the Water User, Water Supplier, the Environment, or Third Parties	Yolo County imports water to sustain its socio-economic and environmental attributes. The District is an advocate against water transfers from Yolo County. The District has adopted guidelines to evaluate proposed transfers from Yolo County.
5. Line or Pipe Ditches and Canals	The majority of the District's canals are unlined. Certain reaches of canals are lined for more efficient conveyance or to eliminate irretrievable water losses through seepage. Seepage losses throughout the major part of the District contributes to effective recharge of the groundwater basin.
6. Increase Flexibility in Water Ordering by and Delivery to the Water Users Within Operational Limits	The District essentially operates as a demand system in that water orders are normally delivered within 24 hours. Where capacity constraints exist, the District is evaluating removing or modifying farm crossings or control structures.
7. Construct and Operate Water Supplier Spill and Tailwater Recovery Systems	Operational spills are largely recovered by agricultural water users downstream. Implementation of Action D. will provide a basis for the District to document the amount of surface water leaving the District.
8. Optimize Conjunctive Use of Surface Water and Groundwater	The District has consistently worked to optimize the conjunctive use of surface water and groundwater through water pricing, operations, and evaluating in-lieu recharge projects. Implementation of Actions B., F., H., and I. will further the District's efforts in this regard.
9. Automate Canal Structures	The District, through its routine operation and maintenance program, is evaluating the prospects of automating selected water control structures. The two main diversion canals are both automated to maintain constant flows.

TABLE B-4

YOLO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

WATER MANAGEMENT PLAN
COMPARATIVE ASSESSMENT -- DISTRICT AND DISTRICT'S ACTION PROGRAM
IN RELATION TO AGRICULTURAL EWMPS - LIST C

Other EWMPs	Comment
1. Water Measurement and Water Use Report	The District currently measures all water delivered through turnouts using practices similar to the U.S. Bureau of Reclamation for canal gates. This information provides the basis for the District's invoicing of water users. Ditchtenders will soon be equipped with data loggers to make the documentation of water deliveries more efficient. A composite of the District's efficiency will be reported in the Annual Water Management and Operations Report, Action L. Implementation of Actions B. and D. will provide information to determine if additional effort is required.
2. Pricing or Other Incentives	The District currently examines its water rate schedule annually. An important consideration in setting the District's water rates is enhancing groundwater storage.

APPENDIX C

SCOPING COMMITTEE

YOLO COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

SCOPING COMMITTEE

Barth, Mr. Al
Barth & Sons, L.H.
21710 County Road 89
Winters, CA 95694

Barth, Mr. LeRoy H.
Chairman
Yolo Co. Flood Control & WCD
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Winters, CA 95694

Bartkiewicz, Mr. Paul
Bartkiewicz, Kronick & Shanahan
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Borcalli & Associates
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Sacramento, CA 95834

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Vice-Mayor
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West Sacramento, CA 95691-0966

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Vidales, Ms. Delores
President
Cacheville Community
Services District
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Yolo, CA 95697

Watts, Mr. Merrell
Manager
Winters, City Of
318 First Street
Winters, CA 95694

APPENDIX D

PUBLIC REVIEW

APPENDIX D

PUBLIC REVIEW

DISTRIBUTION OF DRAFT WATER MANAGEMENT PLAN

On March 24, 2000, the draft Water Management Plan was opened for a 60-day public review. The public review period was noticed with the draft Plan distributed to the entities listed below. The draft Plan was also made available for review and comment on the District's web site "ycfcwcd.org." In addition, the opportunity to provide verbal and/or written comments directly to the District's Board of Directors was included on the agenda for the months of April and May 2000.

The distribution of the draft Water management Plan included:

Copies	Entity
11	Libraries
1	Water Resources Association of Yolo County (WRA)
26	Scoping Committee Members
	Representatives of Cities, County, and Water Districts:
3	Davis Includes WRA Representative and Scoping Committee Representative
3	West Sacramento Includes WRA Representative and Scoping Committee Representative
3	Winters Includes WRA Representative and Scoping Committee Representative
3	Woodland Includes WRA Representative and Scoping Committee Representative
8	Yolo County Includes WRA Representative and Scoping Committee Representative

Copies	Entity
27	Yolo County Water Agencies One copy each, except Dunnigan Water District and Yolo-Zamora Water District received two each (WRA participants and Scoping Committee)
1	California Department of Water Resources (Carl Hauge)
7	Others (Reviewed or Purchased):

Dozier Bei
Davis Enterprise
Rick Martinez
Yolo County Farm Bureau
California Farm Bureau
David Hatanaka
Henry Rodegerdts

Written comments received prior to the public review period of the draft Water Management Plan included:

City of Davis
City of Woodland

Written comments received during the public review period of the draft Water Management Plan included:

Frank Sieferman
County of Yolo

Comments Received on
Draft Water Management Plan

CITY COUNCIL
Julia E. A. Partansky, *Mayor* – Ken Wagstaff, *Mayor Pro Tem*
Susie Boyd, *Councilmember* – Stan Forbes, *Councilmember* – Sheryl Freeman, *Councilmember*

23 Russell Boulevard – Davis, California 95616
530/757-5602 – FAX: 530/757-5603 – TDD: 530/757-5666

Davis
California

November 12, 1999

James F. Eagan, General Manager
Yolo County Flood Control & Water Conservation District
34274 State Highway 16
Woodland, CA 95695

Subject: Draft Water Management Plan

Dear Mr. ~~Eagan~~ Jim:

Thank you for the opportunity to provide general comments to the District regarding its Draft Water Management Plan at this early stage. This type of early consultation will help us maximize the benefits to the public from our collaborative efforts. Thank you also for your courtesy in granting the City's request for additional time to submit these preliminary comments.

The draft plan appears to be comprehensive in documenting past efforts and outlining future priorities for the District. As you know, there has been a rather lively debate on the expected scope of the District's plan, and whether it was agreed or expected that it would extend its analysis beyond the District's boundaries and concerns. This letter is offered in the spirit of moving beyond that debate as "water under the bridge," and focuses instead on outlining some of the City's specific concerns, as they relate to inter-jurisdictional water issues. Significant among these concerns are:

(1) Water Quality – enhanced monitoring of water quality parameters that affect all users;
(2) Subsidence – effect on future groundwater reliability and infrastructure;
(3) Supplemental Water Supplies – protecting/exercising area of origin water rights;
(4) Drought Management – regional coordination during prolonged drought events; and,
(5) Flood Control – regional coordination on flood control, in prevention and during emergencies.

Perhaps the District could expand on these issues in the final draft of the plan. Addressing these substantial issues in the District's plan could provide meaningful momentum to our efforts at collaboration, helping both of our entities make the best possible water management decisions for the public's benefit. The City would welcome the opportunity to further discuss these matters at a meeting of the Scoping Committee prior to the public review process.

Finally, the City sees the District's plan as a valuable stepping stone toward an update of the Yolo County Water Plan, which was last updated in 1992.

The City appreciates the District's substantial efforts in protecting our watershed and planning for the future. We look forward to continuing regional coordination of water management activities with the District and other water purveyors and users.

Sincerely,

Sheryl Freeman

Sheryl Freeman
City Councilwoman

j:\pw\wtr\8543\ycfcplanconm1199

City of Woodland

CITY COUNCIL 300 FIRST STREET WOODLAND, CALIFORNIA 95695 (530) 661-5800
FAX: (530) 661-5813

Melton M. Losoya, Mayor
Steve E. Borchard, Vice-Mayor
David M. Flory, Council Member
Daniel E. Ryhal, Council Member
Neal D. Peart, Council Member

November 5, 1999

James F. Eagan
Yolo County Flood Control and Water Conservation District
34274 State Highway 16
Woodland, CA 95695

Subject: Water Management Plan Draft

Thank you for the opportunity to review and comment on the District's Draft *Water Management Plan*. We appreciate the continuing efforts of the District to develop a comprehensive plan to assist it in managing surface and groundwater supplies to meet the needs within your service area. We are especially interested since the City of Woodland is within the District's service area.

This letter expresses the City of Woodland's desires to:

1. Expand the proposed plan to include management strategies for protecting and improving surface water and groundwater quality.
2. Work cooperatively with the Yolo County Flood Control and Water Conservation District and other interested entities to develop and implement programs that address important local water issues.
3. Participate in a Scoping Committee meeting prior to having the Draft Plan released for public comment.

One of the plan's stated purposes is to "Invite other public agencies to participate in this Plan or expansion thereof." We accept your invitation, offer the following comments, and look forward to working with the District and other interested entities in the expansion of the Plan.

As you know, Woodland relies on groundwater to meet the needs of its residents, businesses and industry. Since this supply also serves as the source of drinking water for our customers, we must make certain that it continually meets strict drinking water standards. The groundwater computer model provided by the District, and refined by the City of Woodland, indicates that some of the areas that provide water to City wells are outside the City limits. It is therefore in the best interest of the City and its residents that we increase our communication and involvement with other local entities.

The Plan describes a number of "Action Programs" for improving the management of water resources and invites the participation of other agencies in these programs. The Action Programs in which the City of Woodland is interested are addressed below.

Action A. Public Relations Program
Woodland desires to become more involved in collaborative efforts with other entities in our area, including the District, in an effort to best manage our water supplies. As we become involved, it is important that we communicate the nature of this involvement and consequently we are interested in that aspect of the proposed Public Relations Program as it relates to planned, proposed, or ongoing collaborative efforts between Woodland and the District.

Action B. Agricultural Water Users Workshops
Currently, many Woodland businesses are either directly or indirectly dependent on viable agricultural productivity in our area. Action H, the District-Woodland In-Lieu Recharge Project would require participation of agricultural water users in the vicinity of Woodland. The City is interested in participating in the District's Agricultural Water Users Workshops as they relate to areas of interest to the City.

Action D. Surface Water Monitoring
The Draft plan indicates that water supplied and conveyed by the District provides a significant amount (40%) of recharge in the area. Some of this water may recharge aquifers that yield water to Woodland supply wells. We are therefore interested in obtaining as much information as feasible as to the quality of the recharged water.

Action E. Groundwater Monitoring
As stated earlier, some groundwater outside of the City is ultimately pumped by City wells and delivered to our customers. This water must meet strict drinking water standards. Planning efforts would be greatly enhanced if additional data were available on the quality of groundwater that may be pumped by City wells and trends in water quality change, if any, that may exist. Woodland desires to continue to address these issues by completing the Data Project, which is currently being discussed by the Technical Advisory Committee of the Water Resources Association of Yolo County (WRA).

Action F. Cache Creek Recharge and Recovery Project
Woodland is interested in the Cache Creek Recharge and Recovery Project to the extent that it may impact the quality and quantity of groundwater available to the City. Many of our interests were conveyed in our comments to the District's EIR for the proposed project. In general, these interests include the impacts to local groundwater flow due to decreased flows in Cache Creek, and quality and quantity impacts due to operation of the project if and when complete. The quality of recharge water should be monitored.

Action G. Sacramento River Water Diversion Project
Woodland continues to be interested in pursuing the water rights permit from the Sacramento River.

Action H. District-Woodland In-Lieu Recharge Project
Woodland continues to be interested in discussing the proposed District-Woodland In-Lieu Recharge Project.

Action K. Drought Management Preparedness

The City of Woodland has developed a Water Shortage Contingency Plan that it implements in the event of drought. The plan has various "Stages of Alert" depending on the severity and duration of the drought. Water use activities during each stage of action become more restricted as the severity or duration of a drought increases. We would be glad to share this plan with you if you desire.

As stated above, Woodland is interested in increasing dialogue with others in our area regarding water management efforts and this interest relates to drought preparedness and implementation of drought plans as well.

Action L. Water Management Report

The City of Woodland is interested in the District's proposed Water Management Report to the extent that it addresses programs in which the City is involved or programs that may impact the City's water supply.

We look forward to working with the District and others in the watershed in an effort to maximize the available surface and groundwater resources and to protect and improve the quality of these valuable resources. In this regard we would like to express our interest in participating in a meeting of the Scoping Committee before the draft plan is disseminated for public comment.

Sincerely,

Steve Borchard
Vice Mayor

To: Yolo Flood Control and Water Conservation District

Comments on Water Management Plan

1. Need to prioritize from your Action Items A - L, then select one and proceed to implement the action.
2. Action J - Dunnigan Hills Water Needs - Options
   In your plan you indicate that the Dunnigan Hills and their increasing grape acreage is in you sphere of influence; that this area could be served by diverting winter flows from Cache Creek and stored in Oat or Bird Creek for later use in the irrigating season. Therefore this Action J warrants further investigation.
3. Action F - Cache Creek Recharge and Recovery Project
   This project could develop additiona water, which in the future would be available for additional use by the District.
4. Action D - Surface Water Monitoring. If the intent in collection of outflow water data from the District is to evaluate the overall efficiency of water use within the District, with this information a decision could be made to justify the recovery of this water to enhance the overall water use efficiency within the District.

   It is not clear in Action D as to exactly where the measurement will be recorded. Cache Creek is not specifically identified, only the Willow Slough Bypass and Channel A.

Submitted by Frank Siefurman

May 2, 2000

County of Yolo

625 Court Street, Room 204 Woodland, California 95695 (530) 666-8195 FAX (530) 666-8193

May 16, 2000

Curtis Miller, Chair,
Board of Directors
Yolo County Flood Control and Water Conservation District
34274 State Highway 16
Woodland, CA. 95695

Subject: Draft Water Management Plan

Dear Mr. Miller,

Thank you for the opportunity to comment on the Draft Water Management Plan. Water management is one of the most crucial issues facing Yolo County and deserves our utmost efforts to provide for its long-term conservation and beneficial use. This Draft Plan is a valuable step toward improved management of local water resources and the efforts of the District in developing this document are appreciated.

Nevertheless, the Board of Supervisors has numerous concerns with the current version of the Draft Plan. In general, the document does not meet the needs and/or expectations of the County. On July 27, 1999, the Board of Supervisors approved Minute Order No. 99-293, which outlined the minimum requirements for the development of a Yolo County Surface and Ground Water Management Plan, as follows:

- Affirmed the commitment to the development of a Yolo County Surface and Groundwater Management Plan as outlined in the Yolo County Water Plan of 1992.

- Stated the intention to have the plan be comprehensive in scope and cover the major groundwater basins in Yolo County.

- Stated the desire that any plan developed should include consultation with the cities, agricultural and environmental interests, landowners, reclamation and water districts adjacent to or within the basin area and should include proposals for conjunctive or other ground/surface water projects.

- Any plan developed should meet the requirements of AB 3030 including the provisions for public hearings and review by all affected Yolo communities.

- Requested the Water Resources Association to ensure that the separate 3030 Plans (or other plans) currently being developed or already developed in the county are coordinated and combined into one overall Yolo County Plan.

Although the Draft Plan partially accomplishes some of these goals, it does not meet the broad-based vision previously established by the Board. Consequently, we strongly urge the District to substantively deal with these issues and to coordinate with its partners in the Water Resources Association to develop a County-wide plan that represents the comprehensive range of interests expressed by all the parties involved. A detailed discussion of specific issues and concerns is provided below.

Interagency Coordination

Page 63 of the Draft Plan states that: "The District cannot rely on the good intentions of other agencies to provide the basic data and information required to adequately monitor and manage water resources within and available to the District." This suggests that interagency efforts have been less than successful. The Draft Plan gives the impression that the District would like other agencies to support and help implement the District's plan. This is a very different approach than cooperatively developing and implementing a joint plan.

Instead, the Draft Plan remains focused solely on the management efforts of the District and fails to take into account those areas and issues that lie outside of the District's authorization. The Draft Plan does not discuss a number of water-related issues, such as land use planning, well construction and abandonment, and groundwater contamination, where the District does not have authority. Nor does the Draft Plan address the water management efforts of other local purveyors, such as the cities, the North Delta Water Agency, the Yolo-Zamora Water District, the Dunnigan Water District, or the Reclamation Districts. The County's goal is to combine the various and separate water management plans being developed into one document. This would provide a comprehensive framework of water management programs that would allow for individual jurisdictions to coordinate and maximize their efforts, while ensuring that interagency conflicts are minimized.

If there are structural, procedural, or other impediments in existing interagency relationships that prevent effective water resources management in Yolo County, then the plan should openly acknowledge the obstacles and include actions to correct the problem. Without a united plan to address regional water needs, it will be difficult to coordinate future interagency efforts or to lobby effectively for legislative and financial needs. The District has a long track record of cooperative water management projects with other local agencies. There is no compelling reason why this Plan should be an exception.

Flood Control

As stated on Page 1, the District seeks to formalize its mission statement through the adoption of the Draft Plan, as follows:

> To plan, develop, and manage the conjunctive use of its surface and groundwater resources to provide a safe and reliable water supply, at a reasonable cost, to sustain the socioeconomic and environmental well-being of Yolo County.

The goals of the District, as described in the proposed mission statement, are commendable. However, there is no mention of the role that the District intends to play with respect to future flood control. This seems odd, given the information provided on page 4 of the Draft Plan, which describes the Flood Control division of the District and lists the "control and disposition of storm and flood waters" as one of the specific authorities of the District. In fact, remarkably little is said about flood control throughout the Draft Plan. Other than a mention of providing information to the County Office of Emergency Services during heavy stream flows, the Draft Plan does not discuss other ongoing efforts by the District to provide flood control. The Draft Plan should be revised to include descriptions of the District's coordination with the County on such items as the realignment of Lamb Valley Slough, the Fremont Street bridge, Madison flood protection, the West Plainfield study, flood control for the City of Woodland, and other shared efforts.

Many people in Yolo County are unclear about the authority and responsibility of the District to manage storm water and flooding. The lack of public understanding regarding this issue has been particularly apparent in the attempt to provide flood protection for the Community of Madison. The Draft Plan would be an appropriate document for explaining this issue by clearly delineating the areas of accountability in controlling floods between the District, the County, the cities, and state and federal agencies. If the historical division of responsibilities needs to be modified, the Draft Plan would also be an appropriate vehicle for negotiating and implementing these changes.

Public Process

The Draft Plan incorrectly concludes that because it includes some provisions authorized for inclusion in AB 3030 and AB 3616 plans, the plan therefore meets the requirements of the legislation. The Draft Plan does not include the procedural elements related to public hearings and protests that are required for AB 3030 plans. Sections 10753.2 through 10753.5 of the California Water Code provides specific requirements for public hearings and noticing both before and following completion of a groundwater management plan. Section 10753.6 provides that if the groundwater management plan is opposed by landowners representing more than fifty percent of the assessed land value within the plan area, then the plan is defeated and cannot be brought back for one year. Procedures for the District to follow for compliance with the AB 3030 provisions should be clearly defined and outlined in Appendix B.

Natural Resources

While the Plan addresses the management of water for agricultural and urban users, it does not discuss the management of water for wildlife enhancement. Various organizations are working to increase the extent of habitat along Putah Creek. The Plan should include a discussion of how opportunities for improving riparian resources along Putah Creek can be developed through partnerships with the agencies and organizations that are already working to improve habitat values in the area. Similarly, the District should provide specific strategies for working with the Natural Resource Conservation Service and Resource Conservation District to implement the Willow Slough Watershed Management Plan. One of the issues that has been raised recently in regards to the North Delta Wildlife Refuge is the disposition of water rights in the Yolo Bypass, when land is purchased by the Federal government. The plan should address these uses as the interest in State and Federal habitat acquisition continues to increase in Yolo County. Finally, the Plan should provide definitive measures for cooperating with the County to increase the benefits to riparian resources associated with implementation of the Cache Creek Area Plan.

Conjunctive Use

In general, the District's proposed conjunctive use and in-lieu recharge project implicitly assume that groundwater and surface water are freely interchangeable for agricultural uses. In many areas, there are significant cost and/or water quality differences between surface water and groundwater supplies, and these factors affect the willingness of farmers to switch freely between the two sources. The Draft Plan should specifically address any interchangeability issues for particular groups of users. The District should also expand the discussion of on-farm water use efficiency in the Draft Plan, because this topic is central to the success of conjunctive use management.

Page 87 describes the proposed operational strategy for groundwater recharge and recovery, consisting of the short-term storage of recharged groundwater and higher storage levels in Indian Valley Reservoir for long-term storage. This appears to conflict with the in-lieu recharge strategy presently being implemented in which Indian Valley storage is maintained at a relatively low level to capture flood runoff more completely (see page 21 second paragraph and page 22 Table 1). The plan should address the integration of these two strategies.

The assumed need to recover recharged water quickly may reflect the subsurface hydrogeology along Cache Creek. Most of the soils permeable enough for successful percolation operations are located near Cache Creek. Upstream of the Dunnigan Hills Anticline (Road 94b), recharged water will tend to seep fairly quickly back into the Creek and consequently would not constitute a reliable supply during a prolonged drought. In contrast, water recharged downstream of the anticline would not flow rapidly back into the creek and could be stored for long periods of time. From the standpoints of water supply and hydrogeology, this is the best area for developing an artificial recharge program. However, the District should also

consider whether artificial recharge near Cache Creek downstream of the Dunnigan Hills Anticline would be redundant if the Woodland In-lieu Groundwater Recharge Program (Action E) were implemented.

On page 14, the Draft Plan describes the District's application to appropriate up to 95,000 acre-feet of additional water from Cache Creek for the purposes of groundwater recharge/recovery. Although the Board supported the District's proposal in concept, there were several concerns by the County regarding the specific implementation of the groundwater recharge program, especially with regards to potential impacts on agriculture, the environment, and public health and safety. Consequently, in May of 1996, the Board of Supervisors filed a protest with the State Water Resources Control Board regarding the proposed application. No mention is made in the Draft Plan about the current status of the Cache Creek application. Please revise the Draft Plan to elaborate on the District's intentions and future actions regarding this issue, so that the feasibility of groundwater recharge along Cache Creek can be further explored by all of the affected parties. The County particularly encourages the District to look closely at new state and federal funding opportunities, such as the Integrated Storage Investigations program, to provide additional money for planning and implementing conjunctive use projects.

The Draft Plan goes on to state that groundwater recharge projects were not incorporated into any of the current long-term, off-channel mining and reclamation plans. Please note that the Teichert Aggregates and Yolo County are nearing completion of the Rodgers Recharge facility, located two miles northwest of Woodland. Note also that the County has spoken with Mr. Eagan concerning the need for an agreement to allow the District to manage the Rodgers in the future. Similarly, Phase IV of the Granite Construction (Capay) reclamation plan includes features suitable for groundwater recharge that were extensively discussed with District staff prior to approval.

The issue of compatibility is also raised on pages 60-61 and again on page 90 of the Draft Plan, where it states that there is little opportunity for groundwater recharge/recovery in the mining and reclamation plans adopted by the County. The Draft Plan further declares that since the reclamation of gravel excavations to agricultural use has not been successful, "the opportunity exists for the Yolo County Board of Supervisors to revisit the reclamation plans to determine if recharge facilities may be more practical." The statement that agricultural reclamation has not been successful is unsubstantiated and should be removed from the document. As shown in the attached table, the reclamation by Solano Concrete of mined land to agriculture has resulted in yields that have regularly exceeded expectations and have frequently outproduced adjoining unmined fields. Agricultural reclamation by Teichert of the Haller site is nearly complete and the first harvest is expected within the next year.

More importantly, groundwater recharge is consistent with the County's adopted mining and reclamation plans. The agreement of the two programs is later acknowledged on page 87 of the Draft Plan, where it states that the District's Cache Creek Recharge/Recovery Project can be integrated with the County's CCRMP. Goal 3.2-2 of the Cache Creek Resources Management Plan (CCRMP)

states: "Promote the conjunctive use of surface and groundwater to maximize the availability of water for a range of uses, including habitat, recreation, agriculture, water storage, flood control, and urban development." In addition, Objective 3.3-1 of the CCRMP states: "Encourage the development of a groundwater recharge program, where appropriate, within the Cache Creek basin. The program may specify use of reclaimed mining pits and open lakes to the greatest extent feasible, while maintaining consistency with the other goals, objectives, actions, and standards of both the CCRMP and OCMP." The Draft Plan should be made consistent throughout the document to state that the Cache Creek Recharge/ Recovery Project and the CCRMP are compatible.

Please note also that page 90 of the Draft Plan describes the various permits and approvals needed to implement the Recovery/Recharge Project. In addition to those listed, the District may also be required to obtain the following from the County: a Use Permit, a Floodplain Development Permit, a Floodway Permit, and various Building and Grading Permits.

Water Quality

The Draft Plan points out that the District does not have authority over groundwater contamination and describes the need for a systematic program of water quality monitoring and management. Implementation Action E is a commitment to fill this void. With respect to surface water monitoring, however, Action D mentions that the Regional Water Quality Control Board monitors water quality in Cache Creek, but provides no details. Is monitoring also performed in Willow Slough? Does the monitoring include all of the constituents of concern to both direct users of Cache Creek, as well as to urban/rural residential users whose water supply is largely derived from Cache Creek percolation? Are the constituents, sampling procedures and locations, and detection limits compatible with those proposed for the groundwater quality monitoring program in Action E? The Draft Plan should be revised to present an evaluation of the existing surface water quality monitoring programs to determine (1) if they are compatible with the proposed new groundwater monitoring program and (2) if they meet the information needs of current agricultural and urban water users.

At a minimum, the County recommends that key groundwater quality constituents to monitor should include electrical conductivity, nitrate, boron, mercury, total dissolved solids, coliform, and selenium. Occasional or targeted sampling for organic contaminants (e.g. herbicides and pesticides) may also be appropriate as an early warning system for municipal supply wells. Also, the plan should include a detailed discussion of Total Maximum Daily Loads (TMDLs) which will greatly affect future use of surface water within Yolo County. These regulations are being developed now and will establish maximum levels of contamination for individual dischargers regarding specific constituents, including mercury.

The County has several existing data sources regarding water quality that can be provided to the District for use in the Water Management Plan. These include results from the 106 domestic water systems that operate within Yolo County, the

groundwater monitoring data provided by gravel mining companies as required under the Off-Channel Mining Plan, and surface water quality testing performed through the Cache Creek Resources Management Plan. Results from the latter two sources are attached. Information can also be obtained from the Putah Creek - Cache Creek Ecotoxicity Program, as well as the various mercury studies being conducted by UC Davis, the State Water Resources Control Board, and the California Department of Fish and Game.

As stated earlier, the District does not have any authority with regards to water quality. However, the County, cities, state, and federal agencies all have a wide range of tools for managing water quality, including such things as land use planning (e.g. wellhead protection areas), standards for well construction and destruction, wastewater management, discharge regulations, and non-point source pollution controls. Although monitoring is critical to determine the extent of water contamination within the County, it is only half of the question. The Draft Plan should significantly expand its discussion of methods for substantially reducing identified water quality problems.

Financing

Several categories of activities within the plan require ongoing staff time and management, including a Public Relations Program (Action A), Agricultural Workshops (Action B), the Land/Water Use Survey (Action C), Sacramento River Water Diversion (Action G), Drought Preparedness (Action K), and the Water Management and Operations Report (Action L). Budget estimates are provided for some of these proposals (although there is no indication of whether these costs are one-time or annual), while others are not provided. Moreover, several Actions do not include permitting and CEQA compliance costs. These costs can be significant and should be factored into all implementation budgets.

In addition, the section on Groundwater Monitoring (Action E) states that the estimated $40,000 to $60,000 cost is for preparing the program. It would be informative to include an anticipated cost for annual implementation of the groundwater monitoring program. Similar information would be appreciated regarding estimated annual operation and maintenance costs for the various capital improvement projects, such as Surface Water Monitoring (Action D), Cache Creek Recharge/Recovery (Action F), Woodland In-Lieu Recharge (Action H), Yolo-Zamora Recharge (Action I), and Dunnigan Hills Water (Action J).

Since adoption of the Draft Plan as an AB 3030 document would allow the District to assess fees to pay for groundwater management activities (subject to approval in a majority-vote election), it is important that the full costs of implementation are provided. Without a detailed and long-term budget, it will be difficult to gather the public support necessary to adequately fund the plan.

Clarifications and Corrections

The photograph opposite page 3 shows Cache Creek east of Interstate Highway

505, not west as is stated in the accompanying caption. The Yolo Bypass and the City of Woodland are clearly visible at the top of the photo.

Page 6 discusses the construction of Indian Valley Dam and Reservoir, including the early retirement of the debt incurred to build the dam. Although the text refers to the voters in District 4, a special mention should be made that the majority of assessments used to finance the dam and reservoir were paid by the residents of Woodland and Davis. The cities played an important role in improving the water supply for the District and should be acknowledged.

On Page 30, the Draft Plan compares Spring 1986 with Fall 1990 water levels, which exaggerates the effects of drought because it includes normal seasonal differences between fall and spring water levels in addition to the cumulative drawdown caused by a multi-year drought. The Draft Plan should also show the reference year and season for calculating the storage depletion in Fall 1977.

The assumption in Table 3 on Page 33 that subsurface inflow equals outflow does not appear to be consistent with the water level contours in Map 4, which show southeasterly gradients across Putah Creek near Winters and generally easterly gradients across the entire eastern boundary of the District. The only boundaries where gradients suggest inflow are along the edges of the basin, where the adjoining geologic formations are relatively consolidated or fine-grained and probably yield little subsurface inflow (e.g. Dunnigan Hills, edges of Capay Valley, western boundary of District).

Recent DWR land use maps are generally available in hard copy while they are being digitized. The use of fairly old (1989) crop data on page 36 is a weakness of the Draft Plan, but the relatively large effort that would be required to independently digitize and subtotal the areas of every category of agricultural field in the District may not be justified. As an interim source of information, the annual crop reports prepared by the Yolo County agricultural commissioner could be reviewed for trends relevant to water resources management.

There are relatively small but significant areas of riparian vegetation along Cache Creek, Putah Creek, and the various branches and tributaries of Willow Slough. These have been mapped and quantified in the Lower Putah Creek Resource Management Plan (U. S. Fish and Wildlife Service 1992), the Cache Creek Resources Management Plan (Yolo County, 1996), the Yolo County Draft Habitat Conservation Plan (EIP Associates, Inc. 1995), and the Willow Slough Watershed Integrated Resources Management Plan (Jones & Stokes Associates 1996). These areas should be included in Tables 4 and 5 on pages 37 and 38.

In Table 12 on page 45 of the Draft Plan, the amount of urban water use listed in 1996 is less than the amount of urban use in 1989 reported in the 1992 Yolo County Water Plan Update (page 14, Table 2) and even less than the projected amounts of use for 1996. Were different sources of data used, or have water conservation efforts been more successful than anticipated?

On page 46, it is stated that water diverted into the District discharges as

subsurface flow under Putah Creek into Solano County. Surface water diverted into the District also discharges as a surface spill from Willow Canal into Putah Creek above Pedrick Road. Parties involved in resolving disputes over instream flows in Putah Creek are developing a program for monitoring and accounting of riparian water in lower Putah Creek that will require metering of spills from Willow Canal. This objective is consistent with Action C of the Draft Plan.

On page 56, the plan states that the District provides input to various legislators regarding bills and actions that could adversely impact Yolo County. The District's concern regarding issues affecting the Countywide water supply is appreciated. However, as the Draft Water Management Plan notes on several occasions, the District's authorization and geographical area are limited. Yolo County is the only local agency who has responsibilities regarding the general water supply, as evidenced by its adoption of the Groundwater Transfer Ordinance. As such, the Plan should be revised to indicate that the Board of Supervisors remains the primary representative in speaking for Countywide water interests.

The findings detailed on page 63 include no statement regarding the present or predicted future long-term balance between water supply and demand. However, five of the actions in the Action Program (Actions F-J) assume that increased supplies are needed. The findings section needs to include an analysis of water supply/demand balance, based on the information presented in Chapters IV and V. The finding regarding Dunnigan Hills water needs and the associated Action J are examples of conclusions that do not obviously follow the information presented earlier on water supply and use.

The scope of the agricultural water users workshops discussed on page 72 should be expanded to include discussion of tailwater ponds, and the relationships between tillage practices, stormwater management, and groundwater recharge. In addition, there is a reference among the topics for discussion of "Incentives for inter-District water transfers." It is unclear where this is an error and should read "intra-District" transfers, or whether there is an intent to transfer water out of the District to other water agencies. Please clarify.

It is not clear why the District considers existing land and water use data inadequate, as described on page 74. The problems with existing data should be described more specifically, and the action should be designed to efficiently address those problems without duplicating other existing or planned monitoring programs. Estimates of available water supplies and current rates of use are critical issues that must be quantified and understood if water management is to be effective.

Page 75 of the Draft Plan notes that information regarding land use patterns and the locations of agricultural and domestic wells can be incorporated into the County's GIS mapping data base, if it is determined that the County will make the maps available for use by other agencies. Please note that the County's GIS maps are always available for use by both the public and other governmental agencies and we welcome the opportunity to work with the District in improving future monitoring efforts.

Map 2 only shows the watershed boundary above Capay Dam. It should be revised to include the watershed boundaries below the dam as well.

The depth to water data for Cache and Putah Creeks shown on Map 8 would provide a more useful indicator of available groundwater storage capacity if they were expressed as depth below the creek thalweg elevation. The creek beds are 20-30 feet lower than the surrounding valley floor elevation in some places, so much of the storage capacity that appears to be vacant on Map 8 could not be filled without inducing increase groundwater outflow to the creeks.

Conclusion

Despite its gaps, the Draft Plan contains many excellent ideas that deserve rapid implementation. Use of the District's water conveyance facilities to redistribute groundwater pumping stresses during a prolonged drought, the development of in-lieu recharge programs to benefit water supply quantity and reliability, workshops to better inform the public about water issues, improved streamflow monitoring on Willow Slough, and the coordination of water quality data are exciting examples of the many opportunities that could result from the Water Management Plan. The County strongly supports this effort and offers its views in the spirit of strengthening the document so that it will provide the greatest level of benefits for all concerned.

We look forward to working with the District and other interested parties in preparing the Final Water Management Plan. Once the final document has been completed and is available for public review, a series of public forums should be held to acquaint landowners and residents with the provisions of the plan. In addition, the Board of Supervisors would appreciate a workshop with the District to review the Final Water Management Plan, prior to its adoption before the Board of Directors.

If there are any questions regarding the issues discussed in this letter, please contact David Morrison, Assistant Planning and Public Works Director, at (530) 666-8041 or by e-mail at david.morrison@ccm.yolocounty.org. The opportunity to comment has been greatly appreciated.

Sincerely,

Lois Wolk, Chair
Yolo County Board of Supervisors

cc: City of Davis
City of West Sacramento
City of Winters
City of Woodland
UC-Davis
Water Resources Association

Responses Provided to Comments Received on Draft Water Management Plan

YOLO COUNTY

FLOOD CONTROL & WATER CONSERVATION DISTRICT

September 6, 2000

Ms. Sheryl Freeman, City Councilwoman
City of Davis
23 Russell Boulevard
Davis, California 95616

Re: Response to Comments on Draft Water Management Plan ("Draft Plan")

Dear Ms. Freeman:

The Yolo County Flood Control & Water Conservation District (District) appreciates the City of Davis (City) reviewing the District's Draft Water Management Plan and the spirit in which the City's comments were offered. The District's response addresses each of the concerns enumerated by the City, in the order submitted.

1. Water Quality. The District agrees that enhanced water quality monitoring is important and affects all users. For this reason, Actions D and E were identified as important elements of the District's Draft Plan. The District has long supported the concept of what was referred to "as early detection" groundwater monitoring that was outlined in the Yolo County Water Plan - 1984.The District regards this as important for its agricultural water users, but more important to Davis and Woodland where the underlying groundwater basin is essentially a "closed system."

34274 State Highway 16
Woodland, CA 95695-9371
(530) 662-0265
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General Manager
James F. Eagan

The District has attempted, in the Draft Plan, to make clear its desire to continue to work with interested parties to implement elements of the Draft Plan. Hopefully, other entities will see the wisdom in implementing enhanced water quality monitoring programs. The District essentially provided basic"scopes of work" for these programs. They can be expanded and modified to fit a program tailored to meet the needs and budgeting levels set by the participating entities.

Last year the Water Resources Association of Yolo County's Technical Committee began addressing this issue. Although the Committee has not worked

on this recently due to the state of flux at the Water Resources Association (WRA), it is expected that the Committee will resume the development of a suggested program for review, consideration and participation of WRA members and any other interested parties. These programs should be relatively easily worked together to complement each other or be combined into one joint program.

2. Subsidence. The District has been one of the longest and strongest advocates for addressing subsidence from the standpoint of monitoring and management of water resources especially in the Yolo-Zamora, Woodland, and Davis area.

   One program that was implemented by member agencies of the WRA, in cooperation with federal and state agencies, is the subsidence program. This program exemplifies the manner in which member agencies should work together to implement programs or projects of mutual interest and, hopefully, is indicative of future projects undertaken by WRA members. The WRA can be an effective vehicle for informing and coordinating agencies to implement programs and projects of mutual interest.

   Hopefully, other WRA members and non-members will view the subsidence program in the same manner, and as a reason to incorporate more water agencies into the WRA.

3. Supplemental Water Supplies. As the City knows, the District has been a strong advocate in protecting and exercising area of origin water rights. The Actions outlined in the District's Draft Plan are aimed at making the most efficient use of the water resources available to the District. As described under Action G, Sacramento River Water Diversion Project, the District is prepared to continue assisting Davis, Woodland, and the University of California, Davis, in pursuing supplemental water supplies through the exercise of watershed of origin water rights. It is with this interest that the District has identified Action J., Dunnigan Hills Water Needs/Options, as deserving attention.

4. Drought Management. The District has long recognized that the period of recorded hydrologic history is too short. This has been demonstrated in recent years with respect to flood events. It can also be noted with dry periods, which can be more severe than any that California has experienced. The District supported the inclusion of a program to address this issue in the County Water Plan Update in 1992. However, no progress on this item has been made.

The District has outlined Action K, Drought Management Preparedness, in hopes that other agencies will acknowledge the benefit of addressing this issue in advance of a severe drought occurring. The District recognizes that Yolo County or other areas cannot afford to provide adequate water supplies to sustain its people and full level of economic activities under conditions that are much more severe than what hydrologic records show. What do we, in Yolo County, do under such conditions?

5. Flood Control. The exclusion of flood control in the District's Draft Plan was deliberate. In the District's opinion, the issue of storm drainage and flood control should be dealt with separately. In so doing, the District urges those involved to first review the document prepared by the Yolo County Floodplain Working Group entitled, "A Report on Storm Drainage and Flooding in Yolo County," Final Draft, December 1994, Revised January 1997.

With respect to expanding on the above issues in the final Draft Plan, the District sees no additional benefit to doing so. Meaningful momentum, which the City speaks of, will only be the product of agencies with mutual interest in certain Actions coming together and implementing them. No expanded scope or text can be considered as a substitute for genuine interest in water management.

The District has formulated scopes of work for each Action that it deemed appropriate to advance the management of water resources available to the District. Again, the first step regarding subsidence has been dealt with and, hopefully, this important program will continue.

The District appreciates the City's review of its Draft Plan and the comments submitted. The District looks forward to working with the City and other agencies on those Actions that are of mutual interest.

Sincerely yours,

Curtis M. Miller

Curtis M. Miller, Chairman
Board of Directors

YOLO COUNTY

FLOOD CONTROL & WATER CONSERVATION DISTRICT

September 6, 2000

Mr. Steve Borchard, Mayor
City of Woodland
300 First Street
Woodland, California 95695

Re: Response to Comments on Draft Water Management Plan ("Draft Plan")

Dear Mr. Borchard:

Thank you for your letter dated November 5, 1999, in which the City of Woodland provided comments on the Yolo County Flood Control & Water Conservation District's (District) Draft Water Management Plan. The City's expressed interest to work with the District and other entities on implementing specific Actions of the Draft Plan, is appreciated. The specificity provided by the City facilitates knowing the Actions where the opportunities for cooperative efforts exist.

Referring to the City's letter, there are three items desired by the City. For easy reference, these three items are repeated below with a response paragraph following each.

1. *Expand the proposed plan to include management strategies for protecting and improving surface water and groundwater quality*

   The District prepared a scope of work to address surface and groundwater monitoring under Actions D and E, respectively. The District views the formulation of management strategies for protecting and improving surface and groundwater quality a product of the cooperative effort of agencies having mutual interests. It is of limited usefulness for the District to formulate such strategies alone.

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General Manager
James F. Eagan

2. *Work cooperatively with the Yolo County Flood Control and Water Conservation District and other interested entities to develop and implement programs that address important local water issues*

   As noted above, the District appreciates the City's positive and specific expression of interest to work together to implement programs of mutual interest. The District is hopeful that discussions to this end will be forthcoming.

3. *Participate in a Scoping Committee meeting prior to having the Draft Plan released for public comment*

   When the District provided Scooping Committee members with the Draft Plan, members were asked to request a meeting if desired. Since only two of the twenty representative entities requested a meeting, it was not held.

   The Draft Plan was released for a 60 day public comment period. It was provided to approximately 135 recipients including 11 public libraries and made available at the District off ice and through the District's web site. Yet, the District received only two comments. Those comments plus the three previously received from Scooping Committee representatives, one of which was replaced by the entities Board, brings the total responses on the Draft Plan to four.

The District looks forward to commencing a cooperative effort with the City and other entities to improve the management of water resources in Yolo County.

Sincerely yours,

Curtis M. Miller

Curtis M. Miller, Chairman
Board of Directors

YOLO COUNTY

FLOOD CONTROL & WATER CONSERVATION DISTRICT

September 6, 2000

Mr. Frank Sieferman
Box 135
Zamora, California 95698

Re: Response to Comments on Draft Water Management Plan ("Draft Plan")

Dear Mr. Sieferman:

Thank you for providing comments, dated May 2, 2000, regarding the Yolo County Flood Control & Water Conservation District's (District) Draft Water Management Plan (Draft Plan). The District is responding to your comments in the same order as presented in your correspondence.

For easy reference, your comments are repeated below in italics followed by the District's response in regular type.

1. *Need to prioritize from your Action Items A - L, then select one and proceed to implement the action*

   The District appreciates your point of "getting on with the program." However, the District has and will continue to invite other entities in Yolo County to participate in implementing programs and projects of mutual interest. In this regard, implementation will be impacted by the desire of other entities to provide meaningful participation.

2. *Action J - Dunnigan Hills Water Needs - Options*
   In your plan you indicate that the Dunnigan Hills and their increasing grape acreage is in your sphere of influence; that this area could be served by diverting winter flows from Cache Creek and stored in Oat or Bird Creek for later use in the irrigating season. Therefore this Action J warrants further investigation.

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General Manager
James F. Eagan

The District agrees that the Dunnigan Hills warrants further investigation. To this end, the District plans to implement Action J, to determine the interest of landowners in the area in receiving irrigation water.

3. *Action F - Cache Creek Recharge and Recovery Project*
This project could develop additional water, which in the future would be available for additional use by the District

The District agrees that this project could develop additional water. The District will continue to seek funding and cooperating entities to pursue this project.

4. *Action D - Surface Water Monitoring. If the intent in collection of outflow water data from the District is to evaluate the overall efficiency of water use within the District, with this information a decision could be made to justify the recovery of this water to enhance the overall water use efficiency within the District*

The intent is to monitor the Willow Slough Bypass as well as other locations where water may be leaving the District. This could also include Willow Slough and East Adams Canal. Cache Creek already has a stage/flow measurement station.

Board Meeting Oral Comment - *At the May Board meeting, you questioned the location of Channel A and mentioned that many people may not know the location.*

The location of Channel A will referenced.

The District appreciates your comment on the Draft Plan and your continued interest and support for its programs and projects.

Sincerely yours,

Curtis M. Miller, Chairman
Board of Directors

YOLO COUNTY

FLOOD CONTROL & WATER CONSERVATION DISTRICT

September 6, 2000

Lois Wolk, Chair
Yolo County Board of Supervisors
625 Court Street, Room 204
Woodland, CA 95695

Re: Response to Comments on Draft Water Management Plan ("Draft Plan")

Dear Supervisor Wolk and Members of the Board of Supervisors:

Thank you for your letter dated May 16, 2000 that sets forth the comments of the Board of Supervisors on the Yolo County Flood Control and Water Conservation District's Draft Water Management Plan (dated September 16, 1999). Wise stewardship of our water resources is clearly one of the most crucial issues facing Yolo County. Therefore, the District appreciates the continuing interest and involvement of the County and the Board of Supervisors in water issues. The County and District enjoy a rich history of working collaboratively and cooperatively with one another on water management and planning. The District is committed to continuing that tradition.

The District's own mission statement underscores the importance of water as a strategic and invaluable resource in Yolo County. It reads: "The Mission of the Yolo County Flood Control & Water Conservation District is to plan, develop, and manage the conjunctive use of its surface and groundwater resources to provide a safe and reliable water supply, at a reasonable cost, to sustain the socioeconomic and environmental well-being of Yolo County." In furtherance of its mission, the District has prepared its Draft Plan to:

(1) provide information about the District's water rights, facilities and distribution system;

(2) provide information about the District's historic management activities in the conjunctive use of surface and groundwater supplies; and

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General Manager
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(3) set forth actions for the District to plan for the management of its existing water supplies and develop supplemental supplies to meet beneficial needs within the District.

To ensure the District has responded to all of the comments contained in your May 16, 2000 letter, each of the comments contained in your letter has been assigned a number, and the responses set forth in this letter correspond to those numbers. A copy of your letter, with comments numbered, is attached (Tab 1).

INTRODUCTION

Perhaps, it would be useful at the outset of our discussion to provide the background analysis that guided the District's decision-making and preparation of the Draft Water Management Plan. Understanding the District's viewpoint from the outset may assist in understanding the subsequent actions the District undertook.

The Purpose and Scope of the District's Draft Plan

The County's letter states the District's Draft Plan "does not meet the needs and/or expectations of the County," and refers to Minute Order No. 99-293 of the Board of Supervisors that "outlined the minimum requirements for the development of a Yolo County Surface and Ground Water Management Plan."

From the outset, the District, anticipating the level of interest and attention that would be paid to a water management plan, attempted to make clear to all interested parties, including the County and other members of the Water Resources Association of Yolo County, the precise purpose and scope of the District's Draft Plan. As stated above, the purpose of the Draft Plan is to implement the District's Mission Statement by developing a document that is factual about the District and its operations, provides historical perspectives, identifies appropriate water management activities, and sets forth an action program for refining water management and planning for the future. The District's Draft Plan is intended to set forth a comprehensive blueprint for the management of the District's surface and groundwater resources to meet the District's current and future water supply needs.

Not surprisingly then, the District's Draft Plan does not extend beyond the existing boundaries of the District because the District has only limited authority to implement the Draft Plan outside its boundaries. We operate, as does the County, within a geographically-defined area. We have neither the authority nor the ability to operate beyond it. The County of Yolo cannot independently initiate projects in Solano or Sacramento Counties. Obviously, neither can the District undertake projects outside its boundaries. With four incorporated cities and a host of special districts within Yolo County, the District would be remiss if it attempted to plan or to independently undertake projects on behalf of other organizations or municipalities without consulting them. However, recognizing the potential of creating partnerships and collaborative agreements with other entities, the District Act authorizes the District to enter into contracts, joint powers agreements and other cooperative arrangements with the County, cities, other public agencies and water companies. Therefore, part of the Draft Plan will be to investigate cooperative arrangements with other public agencies within Yolo County regarding implementation of the Draft Plan.

As noted in the Supervisors' letter, the County and the District appear to have different perspectives concerning the appropriate purpose and scope of the District's Draft Plan. The Supervisors' letter refers to the "needs" and "minimum requirements" of the County concerning the District's Draft Plan. Although the desire of the Supervisors to have a water plan that covers all jurisdictions is understandable, clearly the District lacks the authority, oversight, and resources to initiate such a project. The District's task was to prepare a plan that focuses on the needs of the District, its water users and residents. Of equal importance is the fact that it would be inappropriate for the water users of the District to bear the cost of preparing and implementing a water plan that goes far beyond the scope of a plan that will meet the water management and supply needs of the District. The Supervisors and County staff are quite familiar with the necessity of finding a nexus between a specific project to be financed and the corresponding fiscal impact on the customers or taxpayer. No nexus exists between the District's customers who would be required to fund a county-wide plan and the plan's benefits that would arguably accrue to every resident of the County.

The District has no dispute with the County's goal of having a County Water Plan. The District funded 50 percent of the first plan in 1984, a share commensurate with the potential benefit to the District's ratepayers, and worked cooperatively with the County and

other public agencies in developing the 1992 update. The District will continue to work cooperatively on future updates and implementation as appropriate. Furthermore, the District would welcome the opportunity to work with the County once again in preparing a plan consistent with the broad responsibilities for the County as a whole. The District believes the purpose and scope of the District's Draft Plan are appropriate to meet the needs of the District. It is important to note that the District created a Scoping Committee, with County of Yolo representation, to assist in determining the appropriate purpose and scope of a water management plan for the District. The limit of the Plan to the District's boundaries was discussed at the first meeting of the Water Management Plan Scoping Committee. The Committee did not suggest expanding the scope of the Plan. Consequently, the plan moved forward in its present configuration. Should the Supervisors wish to discuss or explore the potential of creating a truly countywide plan, the District would welcome an invitation to participate.

There Is No Need for the District to Adopt a Groundwater Management Plan Under AB 3030

The letter also reiterates the County's position that the District's water management plan should be a groundwater management plan adopted under AB 3030 (i.e., Water Code Section 10750, and following). A copy of AB 3030 is attached to this letter (Tab 2). This requirement is also an element of Minute Order No. 99-293. The District sent the Board of Supervisors a letter dated September 7, 1999 (Tab 3) that commented on Minute Order No. 99-293, and included a letter from the District's general legal counsel that:

(1) compared the groundwater management activities authorized under AB 3030 and the District Act, respectively, and;

(2) concluded that the groundwater management activities authorized under the District Act were <u>far broader</u>. The District's September 7, 1999 letter states in part:

"In summary, the District is preparing a comprehensive water management plan that addresses both surface and groundwater pursuant to authority in the District Act. AB 3030 was intended to provide authority to adopt groundwater

> (not surface water) management plans for agencies that otherwise lacked that authority. Numerous groundwater management plans have been adopted in California without utilizing the authority provided in AB 3030. The perception that a plan that has not been adopted under AB 3030 is deficient in some respect is simply incorrect. In fact, the scope under an AB 3030 plan would be much more limited than a plan adopted under the District Act."

During 1999, the California Department of Water Resources ("DWR") published a document entitled "Groundwater Management in California - A Report to the Legislature Pursuant to Senate Bill 1245 (1997)," (the "DWR Report") that confirms the above-referenced statement of the District. Excerpts from the DWR Report are attached as Tab 4. A full copy of the DWR Report is available at the DWR web site (www.dpla.water.ca.gov).

Chapter 1 of the DWR Report states there are six alternative methods for adopting groundwater management plans, including, in the order that they became available for use by local agencies: (1) through the exercise of overlying property rights, (2) by local agencies with statutory authorization to manage groundwater, (3) through the adjudication of groundwater basins, (4) by special legislation districts with statutory authorization to manage groundwater, (5) using AB 3030, and (6) by city and county ordinances. The DWR Report shows (at page XI) that, while 156 groundwater management plans have been adopted under AB 3030, 166 groundwater management plans have been adopted under some alternative authority to AB 3030.

Clearly, therefore, it is not necessary for a local agency to adopt a groundwater management plan under AB 3030 if it has an alternative method available to it for adopting a groundwater management plan. Mr. Carl Hauge, DWR's Chief Hydrogeologist who prepared the DWR Report, has orally confirmed this conclusion to the District. AB 3030 states it "is in addition to, and not a limitation on, the authority granted to a local agency pursuant to other provision of law" (Section 10750.10)

Although the County insisted the District's Draft Plan be adopted under AB 3030, several of the comments contained in the letter (which will be discussed below) ask the District to include in its Draft Plan matters that AB 3030 would not authorize for inclusion in a groundwater management plan. For example, Water Code Section 10753.7 sets forth the

authorized components of an AB 3030 plan, and does not include flood control (comment Nos. 8 & 9), management of natural resources (comment No. 11) or surface water quality (comment No. 20). Also, AB 3030 would not authorize the District to adopt a groundwater management plan beyond its service area (Water Code Section 10753). Section 10755.2 authorizes implementing coordinated groundwater management plans, but only with the consent of other local agencies.

The DWR Report shows that four Reclamation Districts in Yolo County (Nos.108, 787, 2035 and 2068) have adopted groundwater management plans under AB 3030, but the District has been unable to secure any evidence the County either reviewed or provided written comments on those plans.

The letter comments the District's Draft Plan fails to meet the procedural requirements of AB 3030, specifically, its public notice and majority protest provisions. The implication is that the AB 3030 procedures are superior to those followed in preparing the District's Draft Plan.

The public notice provisions under AB 3030 are very limited. The public agency must: (1) publish a notice two times in a newspaper before adopting a resolution of intention to adopt a groundwater management plan (Water Code Section 10753.2); (2) publish a copy of the resolution of intention two times in a newspaper (Water Code Section 10753.3); and (3) publish notice two times in a newspaper of the hearing to adopt the groundwater management plan (Water Code Section 10753.5). By contrast, the District believes that the public process it has utilized to develop and prepare its Draft Plan has provided a much more meaningful opportunity to involve interested persons and agencies in the process.

The District's process was to invite each incorporated city, the County, and each water agency within and adjacent to the District to provide up to two representatives to participate on a self directed Scoping Committee to develop a draft plan. Additionally, each District Director recommended two individuals representing agriculture, agribusiness, or business to be on the Committee. The Committee met numerous times for more than one year reviewing the District's history, present situation, proposed projects, and other information requested by the Committee.

At the Committee's request, the District prepared a draft plan for review and comment by Committee members. Comments were received from representatives of the cities of Davis and Woodland, and the County of Yolo. Those comments were attached to the back of the draft plan and released to the public for a 60 day response period. Copies of the public draft were provided to each of the eleven public libraries within the District, each of 27 water agencies within Yolo County, the four cities, Yolo County, the Water Resources Association of Yolo County, the DWR, and the District's Scoping Committee members. Additionally, the Draft Plan was made available for review or purchase at the District and put on the District's web site. The availability of the Draft Plan was made public via press releases in the Davis, Winters, and Woodland newspapers. Additionally, prior to the Board meetings for April and May, notice was placed in the newspapers to advertise that comments on the Draft Plan would be an item of the agenda. The District did receive oral and written comments at the May Board meeting.

It is the District's intent to address all comments on the Draft Plan in the same manner that responses to a Draft EIR would be handled. Not only will the comments be addressed, but both the comment and the District's response will be placed in the final document.

It is important to understand the practical significance of the majority protest provisions of Water Code sections 10753.5 and 10753.6. Notice of the public hearing at which written protests to adopt a groundwater management plan may be submitted is required to be given by publication in a newspaper two times before the hearing. The notice is not legally required to include information on filing a protest to the plan. As a practical matter, a small percentage of the landowners within the District would likely receive actual notice of the meeting through such a publication, and fewer would understand that they had a right to file a protest to the plan. To have a successful protest to a proposed groundwater management plan under AB 3030, the owners of land representing more than 50 percent of the assessed value of land within the District would have to file written protests before the conclusion of the hearing. As a practical matter, it would take an extraordinarily highly-organized and well-funded effort to successfully produce a majority protest in an area as large as the District during the two-week period between the time of the notice and the time of the public hearing. Therefore, the majority protest provisions under AB 3030 would be of little or no practical significance had the District adopted a groundwater management plan under AB 3030.

The letter also asserts that AB 3030 would allow the District to assess fees to pay for groundwater management activities (Water Code Section 10754.2). However, Section 10754.3 requires an election within the area affected by the groundwater management plan adopted under AB 3030 to approve a groundwater management assessment. The District is not aware that there has been an election to approve assessments for any of the AB 3030 groundwater management plans adopted in Northern California. The District does not believe the assessment procedures under AB 3030 would be preferable to the funding authorization that currently exists in the District Act.

In summary, the notion that AB 3030 represented a preferred alternative to the District's plan is obviously based on a set of assumptions that are not borne out by the facts. To the contrary, the District selected an alternative that entailed greater public input, more meaningful participation by the public and affected agencies, and was a more appropriate and practical "fit" for the customers of the District than any scenario outlined under AB 3030.

RESPONSE TO SPECIFIC COMMENTS

As noted at the beginning of this letter, the comments contained in the Supervisors' May 16, 2000 letter have been numbered (Tab 1), and the following responses correspond to the numbered comments in your letter.

1. Your comment is noted.

2. Please see the discussion above under "INTRODUCTION, The Purpose and Scope of the District's Draft Plan."

3. Please see the response to comment No. 2.

4. The comment interprets the statement out of context. The purpose of the statement is to ensure the District takes steps in its water management plan to develop basic data and other information required to adequately monitor and manage its water resources, rather than to simply rely on other agencies to provide that information. For example, State agencies, like the DWR, have monitored land use and measured groundwater levels that provide essential data for the District to use in managing its water resources. From time

to time, however, those activities have been suspended and/or terminated due to budgetary constraints. The following illustrates the District's concern:

- Land Use Surveys: At one time, DWR performed land use surveys in Yolo County on a more regular basis than has occurred in recent years. As noted on page 36 of the Draft Plan, land use surveys were performed by DWR for the years 1961, 1973, 1976, 1981, 1989, and 1998. This information is very useful. However, it is the District's opinion that it cannot rely on DWR to schedule and fund future surveys (Action C).

- Groundwater Data Compilation: The District monitors numerous water wells in Yolo County. The data is compiled and forwarded to DWR and the USBR to compile into a groundwater database that also includes data obtained by DWR and the USBR. Unfortunately, data from the cities and University are not incorporated into the database. The point here is that the timing for DWR to compile the data has become lengthy and uncertain. As a consequence, the ability to capture a picture of the groundwater levels in Yolo County depends upon when DWR staff, with all other competing activities, can complete its work. Here again, the information is very useful. However, in the District's opinion, the availability of the comprehensive data needs to be more efficient.

In summary, this finding has nothing to do with interagency coordination in Yolo County.

The document will be modified to make the intent more clear.

5. Please see the response to comment No. 2. The comment correctly observes that the Draft Plan does not discuss some activities (such as land-use planning) over which the District has no authority. As noted above, the District supported and will continue to support the Yolo County Water Plan. The Water Resources Association can and should be an effective forum for reviewing respective programs and providing the opportunity for individual jurisdictions to join together to implement programs of mutual interest.

6. Please see the response to comment to Nos. 2 and 6. The District agrees with the statement in the comment: "The District has a long track record of cooperative water

management projects with other local agencies." As examples of that track record, the District was instrumental in:

(1) formulating the first Yolo County Water Plan in 1984;

(2) forming the Yolo-Solano Working Group consisting of water managers and public utility directors of water purveyors within Yolo and Solano Counties, and;

(3) creating the Water Resources Association of Yolo County for the purpose of sharing information and planning activities to facilitate improved communication and coordination among the County, cities and water agencies.

Coordinating water management activities identified in the District's Draft Plan with other affected agencies is an important element of the Draft Plan's Action Program. The concept was central to the creation of the Water Resources Association of Yolo County ("WRA"). Again, the WRA can be a very effective vehicle for coordinating interagency interests and activities. Implementation of the subsidence monitoring program illustrates the manner in which interagency coordination will provide meaningful results. Implementation of sound water management programs and projects can be accomplished among a few cooperating entities with a common interest and goal. It would be far better to make progress on well-focused projects with interested participants, rather than attempt to involve all parties in an arrangement that may not be appropriate for many activities.

7. This is a statement requiring no response.

8. Please see the response to comment No. 2. There is no Flood Control Division within the District, per se. The portion of the Draft Plan referred to in your letter simply sets forth some of the background information concerning the authority of the District as set forth in the District Act. The District and the Scoping Committee determined not to include flood control activities in the District's Draft Plan. As the comment notes, the District has worked cooperatively with the County, cities, other public agencies, community groups and individuals on numerous flood control activities. The document

prepared by the Yolo County Floodplain Working Group entitled, "A Report on Storm Drainage and Flooding in Yolo County," Final Draft, December 1996, Revised January 1997 provides a good perspective on flood control in Yolo County.

The sentence on page 4 will be modified to indicate that the General Manager is responsible for carrying out the District Board's policies and directions relative to the District's long-term water needs and oversees the construction, flood control, irrigation and other operational activities of the District.

9. Please see the response to comment No. 8. This comment is indicative of the confusion that sometimes arises regarding the District's "authority" versus "responsibility" in relation to flood control. The District's situation regarding flood control is similar to the County's position - having flood control authorities without a mandated responsibility to use them. It is worthwhile to note also that AB 3030 does not address flood control.

10. Please see the discussion above under "INTRODUCTION, There is No Need for the District to Adopt a Groundwater Management Plan Under AB 3030." The Draft Plan does not conclude that it meets the procedural requirements of AB 3030. On the contrary, the Draft Plan states: "The District's Plan was not formulated pursuant to the process set forth in AB 3030 . . ." (At page B-1.) Appendix B sets forth how the District's Draft Plan would meet the substantive requirements of a plan adopted under AB 3030. The statement in the Draft Plan relates to the Plan's provisions that would satisfy the provisions of AB 3030.

11. Please see the response to comment No. 2. The District has a track record of cooperating with entities to improve habitat and environmental resources, and will continue to do so, where appropriate, consistent with its Mission Statement. Numerous entities are already engaged in habitat improvement activities. The District has cooperated and will continue to cooperate, where deemed appropriate.

    The landowners and jurisdictional entities involved in the conversion of agricultural land to wildlife habitat are responsible for dealing with related water issues. The District will, however, continue to be an active party in the process if surface water or groundwater supplies for water users within the District are threatened.

With respect to the Willow Slough Watershed Management Plan, the District was a partner with the Resource Conservation District in developing that plan and is a continuing cooperator in its implementation.

With respect to Cache Creek, the District has cooperated with the Cache Creek Conservancy providing a turnout and surplus water for wetlands management, working together for removal of invasive species and providing educational materials. Since the County and the Conservancy are involved in habitat enhancement along Cache Creek from Capay to the Settling Basin and the District has only its own property at the Moore crossing, it seems more appropriate for the County and the Conservancy to identify the definitive measures to implement a plan the County apparently either developed or was instrumental in developing.

12. The comment is noted. The District's Draft Plan addresses this topic as part of the Action Program. There seems to be a lack of understanding between the District's Water Plan and implementing the Actions outlined in the Plan. Economics and water quality, as well as farming practices need to be dealt within implementing Actions F, H, and I. On-farm water use efficiency is certainly a consideration in conjunctive water use management. However, its relative importance can vary depending upon water management objectives. On-farm water use efficiency will be addressed in Action B, and where appropriate in other Actions as well.

    The District's conjunctive use plans include feasibility studies that will help to determine where exchange of groundwater and surface water is practical and desirable.

13. This is a constructive comment. These two strategies become operationally integrated through the implementation of Actions H and I. Water provided to the respective areas is not intended to be a "firm" supply. In managing the District's overall water supply, allocations can be made to the expanded "in-lieu" recharge areas to minimize flood spills at Indian Valley.

    The text will be modified to make the relationship more obvious.

14. The comment is correct and restates information from the District Draft Plan. The need to recover recharged water quickly (store in the winter and recover in the spring) does reflect the subsurface hydrogeology and impact of lowered thalweg of Cache Creek. Recovering the water quickly means it is not intended to be stored for use during a long-term drought. The purpose for the comment is not clear.

    Clearly it should be understood that groundwater levels one to two miles away from Cache Creek can be affected immediately through in-lieu recharge rather than taking years through direct recharge near Cache Creek.

    The District's Actions F, H, and I, are not redundant, but are considered as comprehensive water management. Different water is used at different times of the year.

15. Your comment is noted. The District Draft Plan addresses this topic as part of the Action Program. Again, there seems to be a lack of understanding between the Plan and implementing the Plan. The technical and environmental feasibility of the District's proposed project will address the County's concern and are products from implementing Action F.

    The District has applied for funding through DWR, and will pursue outside funding where available and appropriate.

16. It has always been the District's understanding from Teichert that the Rodgers Recharge Demonstration facility, which was developed by Teichert and the District, is to be donated by Teichert to Yolo County. Although the County has indicated it wished to discuss an agreement with the District regarding the facility, it has not as yet provided information regarding what the agreement would entail.

    The language in the Draft Plan is correct. However, it will be modified to address the activities mentioned with respect to the Rodgers Recharge Facility and Phase IV of the Granite Construction Company's reclamation plan.

17. The success or failure of reclamation to agriculture has not been demonstrated. According to County staff, the only pit currently reclaimed to agriculture is the Solano

Pit that was referred to in the letter. The yield table referred to was not provided with the letter. However, the table was subsequently requested and reviewed. The cropping pattern on the yield table seems to indicate the land is not being farmed as the Class I soil it previously was. Over the eleven years indicated on your table, wheat was planted six years and not double cropped. This year, wheat was again planted on the reclaimed land and the adjacent lands to the south and west. However, Sudan grass was planted on the unmined Class II and IV portions of the parcel. Tomatoes were planted on the adjacent lands to the southeast and sunflowers adjacent to that. The Teichert Meadows Pit, now known as the Cache Creek Conservancy's wetlands project, is a pit previously reclaimed for agricultural use but subsequently abandoned. Areas of the pit remained wet throughout the growing season, precluding the use of agricultural equipment for soil preparation and harvesting.

The District has consistently encouraged County staff to carefully consider the impacts of higher groundwater when considering the best reclamation alternatives for gravel pits. As recharge occurs around Cache Creek, whether through natural recharge, the District's proposed recharge recovery project or in-lieu recharge, the water table will rise. Therefore, those pits close to the water table that have been reclaimed to agriculture may lose their viability over time.

The text will be modified to indicate that the degree of success or failure to reclaim land to agricultural production has not been proven, will vary from site to site, may require time to determine at each site, and that the opportunity still exists for the Yolo County Board of Supervisors to revisit the reclamation plans to determine whether recharge and/ or environmental restoration may be more practical than reclaiming to agriculture.

18. The Draft will indicate that the County has stated that the Cache Creek Recharge/Recovery Project is compatible with the CCRMP.

19. Reference to the County permits will be included.

20. Again, the difference between the Plan and implementing the Plan needs to be understood. Implementing Action F will accomplish items addressed in this comment.

21. The County should be a cooperating entity in implementing and funding Actions D and E to be sure the constituents for which it is concerned are addressed. The discussion of TMDL's should be addressed in implementing Action D.

22. The data referred to as provided with your letter were not enclosed. Please provide them. The District is on the technical committee for the Putah-Cache Creek Ecotoxicity Study, and has that data available to it.

    Available data will be reviewed and incorporated into implementing Action E, as appropriate.

23. The methods for substantially reducing water quality problems should be formulated after the "problems" are more fully identified. Implementing Actions D and E certainly should lead to identifying other Actions to further manage water supplies in Yolo County. The progression from implementing Actions in the Plan to formulating and implementing new Actions is a healthy process that certainly requires more and stronger cooperative efforts.

24. Again, the difference between the Plan, implementing the Plan, and subsequently implementing projects, needs to be understood.

    The budgets within the Plan are for implementing the Actions. The budgets for implementing projects and programs developed from the respective Actions must be developed as a product of the Action item. For example, to assign a budget to implement a groundwater quality monitoring program without knowing the number of monitoring sites, the locations, the constituents to monitor, and the frequency, would be purely academic and serve no useful purpose at this time. More complete cost estimates will be developed as part of implementing the Action Programs.

25. Your comment is noted. More complete cost estimates will be developed as part of implementing the Action Program.

26. Please see the response to comment No. 10. Again, the detail requested is beyond the scope of the District's plan and would be developed at the project level. It should be noted this is something that would not be included within an AB 3030 plan.

27. The caption on the photograph opposite page 3 is correct. The caption on the photograph opposite page 4 was corrected.

28. Zone No. 4 of the District represented the Zone-of-Benefit for financing the construction of Indian Valley Dam and Reservoir. All landowners within Zone No. 4, urban and rural, played an important role in improving the water supply within the District.

29. Within the context of the Draft Plan, the comparison is not water levels for the Spring 1986 with 1990. Instead, the discussion attempts to put a dimension on the magnitude of water extracted from groundwater storage during the respective period. To put the groundwater depletion of 460,000 acre-feet in perspective, the gross storage capacity of Indian Valley Reservoir is 300,000 acre-feet.

    The 700,000 acre-feet is the estimated magnitude of groundwater storage between the Spring 1986 and Fall 1977 groundwater levels. This puts a dimension on the size of the reservoir used historically. Lowering the groundwater levels below the Fall 1977 level could induce additional subsidence in some areas or water quality deterioration.

    This will be clarified in the text.

30. Based upon information reported by Scott and Scalmanini in 1976, subsurface inflow into the District from the west is small (5,400 fpy). The groundwater gradient along the District's eastern boundary in the spring is flat or slightly to the east. Once groundwater pumping commences for agriculture and the cities begin increasing pumping more to meet summer water demands, the gradients are reversed (i.e., groundwater flows from east to west).

    A groundwater model is required to better establish groundwater movement and general magnitudes of inflow and outflow. However, the information in Table 3, albeit estimates, does put the respective sources of recharge into perspective. For example, when

considering the impact on the aquifer, substantially increasing irrigation efficiencies may be desirable when using pumped groundwater, but may not when using surface water supplies.

31. The use of 1989 land use data is not viewed as a weakness of the Draft Plan. It clearly substantiates the point made in response to comment No. 5. The Agricultural Commissioner's annual crop reports are informative, but provide no information relative to sources of supply (surface and/or groundwater) or location of use. Hopefully, other agencies will cooperate with the District in developing a program to obtain these data on a regular basis.

32. If these areas are important, it seems that they would be delineated and quantified on the County's GIS maps. Since the GIS maps were not made available to the District's consultant in preparing the Draft Plan, this could not be determined.

    Hopefully the County and other agencies will participate in Action C to prepare the scope of a land use surveillance program. It is not appropriate for the District alone to expend resources in compiling such information.

33. Urban water use as indicated on the Draft Plan's table is not the same as municipal/industrial and domestic water use as indicated on the Water Plan Update's table. The latter includes water for people living outside the urban areas.

34. The activity discussed in this comment fits more in Action D than in Action C. In any case, it is this type of interagency participation that can result in a meaningful program. Hopefully, the involved parties will come together to implement Action D, as well as other Actions. Please note UC Davis has a contract to purchase all spill water at the end of the Willow Canal before it reaches Putah Creek.

35. The District does <u>not</u> represent itself as the spokesperson for the County on any issue. Surely, in a democracy, it is desirable to have more than one voice on issues of general interest. When affected agencies desire to have a specific position communicated by a single representative, they may agree to do so. They should not be prevented from expressing a position that is different from another agency's position, however.

It should be noted, however, that the District's water rights and supply are impacted by actions outside the District, and therefore cause the District to take an active interest in those activities. For example, the District adopted its Water Transfer Guidelines in October 1994, and subsequently assisted the County in drafting its Groundwater Transfer Ordinance, which was adopted in November 1996.

The text will be modified to reflect the District is speaking for and on behalf of itself and its water users.

36. The finding regarding the Dunnigan Hills is presented not as an existing water supply and use issue, but to call attention to what role the Dunnigan Hills will play in the future of District water. Past requests in the area for annexation to the District suggests that attention be given to planning for the area.

    A finding will be added: "The District's present water supply is not adequate to consistently meet existing demand and will be further depleted by additional demand." Analysis of water supply and demand will not be included in the Findings section. That section is comprised of Findings only, not supporting detail. However, analysis of supplies and demand will be helpful and included in the Draft Plan, not so much from the standpoint of substantiating the Action program outlined in the Draft Plan, but more to evaluate when and how shortages should be handled when they occur.

37. The suggested discussion items are already included in "water use and on-farm irrigation/system efficiency," and "enhanced/reduced runoff opportunities."

    The term "inter-district water transfers" was correct. The aspect of inter-district water transfers relates to selling surplus water to other water districts within Yolo County. e.g., the Yolo-Zamora Water District.

    In order to make it more clear, the term will be changed to "inter-agency water transfer."

38. The problem associated with land use data as noted previously relates to the uncertainty in DWR's program. The data and information provided by DWR are very useful. However, the frequency is uncertain. The District suggests that it and other agencies in

Yolo County work with DWR to develop a program that is: (1) implemented on a regular basis, and (2) incorporates specific information desired locally, if not already included, e.g., a refinement that incorporates areas of significant riparian habitat.

Yes, estimates of water use are important for water management to be effective, and detailed land use data make water use calculations more representative

39. Please be advised that, after repeated requests, Yolo County's GIS maps were not made available to the District's consultant in April 1999, or subsequently for use in preparing the Draft Plan. The District is pleased to learn that the County's GIS maps are now available to the District. The maps should be useful in implementing the Plan.

40. This would be true near Cache Creek. However, as can be seen on Map 8, some of the highlighted area is a few miles from Cache Creek. It is more appropriate to show it as it is, and deal with the influence of Cache Creek in the formulation of any project aimed at increasing groundwater levels.

    Map 2 depicts only the portion of the Cache Creek watershed to the District's Capay Diversion Dam. It will be relabeled to specify it as such.

41. Please review the Purpose and Scope of the Plan on page 2 of this letter. The District is hopeful that its Plan can be used as a catalyst to promote interagency participation to implement the Actions outlined.

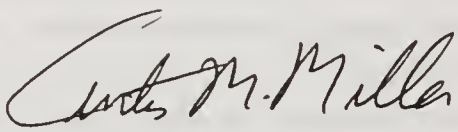
42. Your comment is noted and will be taken into consideration.

It is clear from a number of comments that there is a lack of understanding between implementing the Water Plan's Actions, and implementing the projects outlined in the Plan. An essential portion of the Water Plan as previously stated is to set forth actions for the District to plan for the management of its existing water supplies and for development of supplemental supplies to meet beneficial needs within the District. For example, Action F - Cache Creek Recharge/Recovery Project - states its purpose is to assess the magnitude of the additional supply, the physical and operational elements of a project, groundwater recharge/recovery along Cache Creek, and to design a project for implementation. The action

item does not include implementation of the project itself. After the project has been designed, reviewed and accepted, including the CEQA review and determination of any mitigation measures, the costs of the proposed project can be estimated. Implementation of the Plan Actions should help identify feasible projects. Implementation of the feasible projects will be determined by the District Board's priorities and available funding sources.

The District is deeply appreciative of the Board of Supervisors' abiding interest in the Draft Water Management Plan. The District Board welcomes your comments and, should any individual Supervisors be interested, would be happy to meet and discuss the plan in greater detail. Obviously, cooperation and collaboration are what characterize any successful partnership. The District applauds the Board of Supervisors' commitment to water policy and planning in Yolo County. We look forward to working with the Board of Supervisors and County staff more closely in the future.

Sincerely yours,



Curtis M. Miller, Chairman
Board of Directors

c: City of Davis
City of West Sacramento
City of Winters
City of Woodland
UC Davis
Water Resources Association
Scoping Committee Members

TAB 1

County of Yolo

625 Court Street, Room 204 Woodland, California 95695 (530) 666-8195 FAX (530) 666-8193

May 16, 2000

Curtis Miller, Chair,
Board of Directors
Yolo County Flood Control and Water Conservation District
34274 State Highway 16
Woodland, CA. 95695

Subject: Draft Water Management Plan

Dear Mr. Miller,

1 Thank you for the opportunity to comment on the Draft Water Management Plan. Water management is one of the most crucial issues facing Yolo County and deserves our utmost efforts to provide for its long-term conservation and beneficial use. This Draft Plan is a valuable step toward improved management of local water resources and the efforts of the District in developing this document are appreciated.

2 Nevertheless, the Board of Supervisors has numerous concerns with the current version of the Draft Plan. In general, the document does not meet the needs and/or expectations of the County. On July 27, 1999, the Board of Supervisors approved Minute Order No. 99-293, which outlined the minimum requirements for the development of a Yolo County Surface and Ground Water Management Plan, as follows:

- Affirmed the commitment to the development of a Yolo County Surface and Groundwater Management Plan as outlined in the Yolo County Water Plan of 1992.

- Stated the intention to have the plan be comprehensive in scope and cover the major groundwater basins in Yolo County.

- Stated the desire that any plan developed should include consultation with the cities, agricultural and environmental interests, landowners, reclamation and water districts adjacent to or within the basin area and should include proposals for conjunctive or other ground/surface water projects.

- Any plan developed should meet the requirements of AB 3030 including the provisions for public hearings and review by all affected Yolo communities.

- Requested the Water Resources Association to ensure that the separate 3030 Plans (or other plans) currently being developed or already developed in the county are coordinated and combined into one overall Yolo County Plan.

3 Although the Draft Plan partially accomplishes some of these goals, it does not meet the broad-based vision previously established by the Board. Consequently, we strongly urge the District to substantively deal with these issues and to coordinate with its partners in the Water Resources Association to develop a County-wide plan that represents the comprehensive range of interests expressed by all the parties involved. A detailed discussion of specific issues and concerns is provided below.

Interagency Coordination

4 Page 63 of the Draft Plan states that: "The District cannot rely on the good intentions of other agencies to provide the basic data and information required to adequately monitor and manage water resources within and available to the District." This suggests that interagency efforts have been less than successful. The Draft Plan gives the impression that the District would like other agencies to support and help implement the District's plan. This is a very different approach than cooperatively developing and implementing a joint plan.

5 Instead, the Draft Plan remains focused solely on the management efforts of the District and fails to take into account those areas and issues that lie outside of the District's authorization. The Draft Plan does not discuss a number of water-related issues, such as land use planning, well construction and abandonment, and groundwater contamination, where the District does not have authority. Nor does the Draft Plan address the water management efforts of other local purveyors, such as the cities, the North Delta Water Agency, the Yolo-Zamora Water District, the Dunnigan Water District, or the Reclamation Districts. The County's goal is to combine the various and separate water management plans being developed into one document. This would provide a comprehensive framework of water management programs that would allow for individual jurisdictions to coordinate and maximize their efforts, while ensuring that interagency conflicts are minimized.

6 If there are structural, procedural, or other impediments in existing interagency relationships that prevent effective water resources management in Yolo County, then the plan should openly acknowledge the obstacles and include actions to correct the problem. Without a united plan to address regional water needs, it will be difficult to coordinate future interagency efforts or to lobby effectively for legislative and financial needs. The District has a long track record of cooperative water management projects with other local agencies. There is no compelling reason why this Plan should be an exception.

Flood Control

7 As stated on Page 1, the District seeks to formalize its mission statement through the adoption of the Draft Plan, as follows:

> To plan, develop, and manage the conjunctive use of its surface and groundwater resources to provide a safe and reliable water supply, at a reasonable cost, to sustain the socioeconomic and environmental well-being of Yolo County.

8 The goals of the District, as described in the proposed mission statement, are commendable. However, there is no mention of the role that the District intends to play with respect to future flood control. This seems odd, given the information provided on page 4 of the Draft Plan, which describes the Flood Control division of the District and lists the "control and disposition of storm and flood waters" as one of the specific authorities of the District. In fact, remarkably little is said about flood control throughout the Draft Plan. Other than a mention of providing information to the County Office of Emergency Services during heavy stream flows, the Draft Plan does not discuss other ongoing efforts by the District to provide flood control. The Draft Plan should be revised to include descriptions of the District's coordination with the County on such items as the realignment of Lamb Valley Slough, the Fremont Street bridge, Madison flood protection, the West Plainfield study, flood control for the City of Woodland, and other shared efforts.

9 Many people in Yolo County are unclear about the authority and responsibility of the District to manage storm water and flooding. The lack of public understanding regarding this issue has been particularly apparent in the attempt to provide flood protection for the Community of Madison. The Draft Plan would be an appropriate document for explaining this issue by clearly delineating the areas of accountability in controlling floods between the District, the County, the cities, and state and federal agencies. If the historical division of responsibilities needs to be modified, the Draft Plan would also be an appropriate vehicle for negotiating and implementing these changes.

Public Process

10 The Draft Plan incorrectly concludes that because it includes some provisions authorized for inclusion in AB 3030 and AB 3616 plans, the plan therefore meets the requirements of the legislation. The Draft Plan does not include the procedural elements related to public hearings and protests that are required for AB 3030 plans. Sections 10753.2 through 10753.5 of the California Water Code provides specific requirements for public hearings and noticing both before and following completion of a groundwater management plan. Section 10753.6 provides that if the groundwater management plan is opposed by landowners representing more than fifty percent of the assessed land value within the plan area, then the plan is defeated and cannot be brought back for one year. Procedures for the District to follow for compliance with the AB 3030 provisions should be clearly defined and outlined in Appendix B.

Natural Resources

11 While the Plan addresses the management of water for agricultural and urban users, it does not discuss the management of water for wildlife enhancement. Various organizations are working to increase the extent of habitat along Putah Creek. The Plan should include a discussion of how opportunities for improving riparian resources along Putah Creek can be developed through partnerships with the agencies and organizations that are already working to improve habitat values in the area. Similarly, the District should provide specific strategies for working with the Natural Resource Conservation Service and Resource Conservation District to implement the Willow Slough Watershed Management Plan. One of the issues that has been raised recently in regards to the North Delta Wildlife Refuge is the disposition of water rights in the Yolo Bypass, when land is purchased by the Federal government. The plan should address these uses as the interest in State and Federal habitat acquisition continues to increase in Yolo County. Finally, the Plan should provide definitive measures for cooperating with the County to increase the benefits to riparian resources associated with implementation of the Cache Creek Area Plan.

Conjunctive Use

12 In general, the District's proposed conjunctive use and in-lieu recharge project implicitly assume that groundwater and surface water are freely interchangeable for agricultural uses. In many areas, there are significant cost and/or water quality differences between surface water and groundwater supplies, and these factors affect the willingness of farmers to switch freely between the two sources. The Draft Plan should specifically address any interchangeability issues for particular groups of users. The District should also expand the discussion of on-farm water use efficiency in the Draft Plan, because this topic is central to the success of conjunctive use management.

13 Page 87 describes the proposed operational strategy for groundwater recharge and recovery, consisting of the short-term storage of recharged groundwater and higher storage levels in Indian Valley Reservoir for long-term storage. This appears to conflict with the in-lieu recharge strategy presently being implemented in which Indian Valley storage is maintained at a relatively low level to capture flood runoff more completely (see page 21 second paragraph and page 22 Table 1). The plan should address the integration of these two strategies.

14 The assumed need to recover recharged water quickly may reflect the subsurface hydrogeology along Cache Creek. Most of the soils permeable enough for successful percolation operations are located near Cache Creek. Upstream of the Dunnigan Hills Anticline (Road 94b), recharged water will tend to seep fairly quickly back into the Creek and consequently would not constitute a reliable supply during a prolonged drought. In contrast, water recharged downstream of the anticline would not flow rapidly back into the creek and could be stored for long periods of time. From the standpoints of water supply and hydrogeology, this is the best area for developing an artificial recharge program. However, the District should also

consider whether artificial recharge near Cache Creek downstream of the Dunnigan Hills Anticline would be redundant if the Woodland In-lieu Groundwater Recharge Program (Action E) were implemented.

15 On page 14, the Draft Plan describes the District's application to appropriate up to 95,000 acre-feet of additional water from Cache Creek for the purposes of groundwater recharge/recovery. Although the Board supported the District's proposal in concept, there were several concerns by the County regarding the specific implementation of the groundwater recharge program, especially with regards to potential impacts on agriculture, the environment, and public health and safety. Consequently, in May of 1996, the Board of Supervisors filed a protest with the State Water Resources Control Board regarding the proposed application. No mention is made in the Draft Plan about the current status of the Cache Creek application. Please revise the Draft Plan to elaborate on the District's intentions and future actions regarding this issue, so that the feasibility of groundwater recharge along Cache Creek can be further explored by all of the affected parties. The County particularly encourages the District to look closely at new state and federal funding opportunities, such as the Integrated Storage Investigations program, to provide additional money for planning and implementing conjunctive use projects.

16 The Draft Plan goes on to state that groundwater recharge projects were not incorporated into any of the current long-term, off-channel mining and reclamation plans. Please note that the Teichert Aggregates and Yolo County are nearing completion of the Rodgers Recharge facility, located two miles northwest of Woodland. Note also that the County has spoken with Mr. Eagan concerning the need for an agreement to allow the District to manage the Rodgers in the future. Similarly, Phase IV of the Granite Construction (Capay) reclamation plan includes features suitable for groundwater recharge that were extensively discussed with District staff prior to approval.

17 The issue of compatibility is also raised on pages 60-61 and again on page 90 of the Draft Plan, where it states that there is little opportunity for groundwater recharge/recovery in the mining and reclamation plans adopted by the County. The Draft Plan further declares that since the reclamation of gravel excavations to agricultural use has not been successful, "the opportunity exists for the Yolo County Board of Supervisors to revisit the reclamation plans to determine if recharge facilities may be more practical." The statement that agricultural reclamation has not been successful is unsubstantiated and should be removed from the document. As shown in the attached table, the reclamation by Solano Concrete of mined land to agriculture has resulted in yields that have regularly exceeded expectations and have frequently outproduced adjoining unmined fields. Agricultural reclamation by Teichert of the Haller site is nearly complete and the first harvest is expected within the next year.

18 More importantly, groundwater recharge is consistent with the County's adopted mining and reclamation plans. The agreement of the two programs is later acknowledged on page 87 of the Draft Plan, where it states that the District's Cache Creek Recharge/Recovery Project can be integrated with the County's CCRMP. Goal 3.2-2 of the Cache Creek Resources Management Plan (CCRMP)

states: "Promote the conjunctive use of surface and groundwater to maximize the availability of water for a range of uses, including habitat, recreation, agriculture, water storage, flood control, and urban development." In addition, Objective 3.3-1 of the CCRMP states: "Encourage the development of a groundwater recharge program, where appropriate, within the Cache Creek basin. The program may specify use of reclaimed mining pits and open lakes to the greatest extent feasible, while maintaining consistency with the other goals, objectives, actions, and standards of both the CCRMP and OCMP." The Draft Plan should be made consistent throughout the document to state that the Cache Creek Recharge/ Recovery Project and the CCRMP are compatible.

19 Please note also that page 90 of the Draft Plan describes the various permits and approvals needed to implement the Recovery/Recharge Project. In addition to those listed, the District may also be required to obtain the following from the County: a Use Permit, a Floodplain Development Permit, a Floodway Permit, and various Building and Grading Permits.

Water Quality

20 The Draft Plan points out that the District does not have authority over groundwater contamination and describes the need for a systematic program of water quality monitoring and management. Implementation Action E is a commitment to fill this void. With respect to surface water monitoring, however, Action D mentions that the Regional Water Quality Control Board monitors water quality in Cache Creek, but provides no details. Is monitoring also performed in Willow Slough? Does the monitoring include all of the constituents of concern to both direct users of Cache Creek, as well as to urban/rural residential users whose water supply is largely derived from Cache Creek percolation? Are the constituents, sampling procedures and locations, and detection limits compatible with those proposed for the groundwater quality monitoring program in Action E? The Draft Plan should be revised to present an evaluation of the existing surface water quality monitoring programs to determine (1) if they are compatible with the proposed new groundwater monitoring program and (2) if they meet the information needs of current agricultural and urban water users.

21 At a minimum, the County recommends that key groundwater quality constituents to monitor should include electrical conductivity, nitrate, boron, mercury, total dissolved solids, coliform, and selenium. Occasional or targeted sampling for organic contaminants (e.g. herbicides and pesticides) may also be appropriate as an early warning system for municipal supply wells. Also, the plan should include a detailed discussion of Total Maximum Daily Loads (TMDLs) which will greatly affect future use of surface water within Yolo County. These regulations are being developed now and will establish maximum levels of contamination for individual dischargers regarding specific constituents, including mercury.

22 The County has several existing data sources regarding water quality that can be provided to the District for use in the Water Management Plan. These include results from the 106 domestic water systems that operate within Yolo County, the

groundwater monitoring data provided by gravel mining companies as required under the Off-Channel Mining Plan, and surface water quality testing performed through the Cache Creek Resources Management Plan. Results from the latter two sources are attached. Information can also be obtained from the Putah Creek - Cache Creek Ecotoxicity Program, as well as the various mercury studies being conducted by UC Davis, the State Water Resources Control Board, and the California Department of Fish and Game.

23 As stated earlier, the District does not have any authority with regards to water quality. However, the County, cities, state, and federal agencies all have a wide range of tools for managing water quality, including such things as land use planning (e.g. wellhead protection areas), standards for well construction and destruction, wastewater management, discharge regulations, and non-point source pollution controls. Although monitoring is critical to determine the extent of water contamination within the County, it is only half of the question. The Draft Plan should significantly expand its discussion of methods for substantially reducing identified water quality problems.

Financing

24 Several categories of activities within the plan require ongoing staff time and management, including a Public Relations Program (Action A), Agricultural Workshops (Action B), the Land/Water Use Survey (Action C), Sacramento River Water Diversion (Action G), Drought Preparedness (Action K), and the Water Management and Operations Report (Action L). Budget estimates are provided for some of these proposals (although there is no indication of whether these costs are one-time or annual), while others are not provided. Moreover, several Actions do not include permitting and CEQA compliance costs. These costs can be significant and should be factored into all implementation budgets.

25 In addition, the section on Groundwater Monitoring (Action E) states that the estimated $40,000 to $60,000 cost is for preparing the program. It would be informative to include an anticipated cost for annual implementation of the groundwater monitoring program. Similar information would be appreciated regarding estimated annual operation and maintenance costs for the various capital improvement projects, such as Surface Water Monitoring (Action D), Cache Creek Recharge/Recovery (Action F), Woodland In-Lieu Recharge (Action H), Yolo-Zamora Recharge (Action I), and Dunnigan Hills Water (Action J).

26 Since adoption of the Draft Plan as an AB 3030 document would allow the District to assess fees to pay for groundwater management activities (subject to approval in a majority-vote election), it is important that the full costs of implementation are provided. Without a detailed and long-term budget, it will be difficult to gather the public support necessary to adequately fund the plan.

Clarifications and Corrections

27 The photograph opposite page 3 shows Cache Creek east of Interstate Highway

505, not west as is stated in the accompanying caption. The Yolo Bypass and the City of Woodland are clearly visible at the top of the photo.

28 Page 6 discusses the construction of Indian Valley Dam and Reservoir, including the early retirement of the debt incurred to build the dam. Although the text refers to the voters in District 4, a special mention should be made that the majority of assessments used to finance the dam and reservoir were paid by the residents of Woodland and Davis. The cities played an important role in improving the water supply for the District and should be acknowledged.

29 On Page 30, the Draft Plan compares Spring 1986 with Fall 1990 water levels, which exaggerates the effects of drought because it includes normal seasonal differences between fall and spring water levels in addition to the cumulative drawdown caused by a multi-year drought. The Draft Plan should also show the reference year and season for calculating the storage depletion in Fall 1977.

30 The assumption in Table 3 on Page 33 that subsurface inflow equals outflow does not appear to be consistent with the water level contours in Map 4, which show southeasterly gradients across Putah Creek near Winters and generally easterly gradients across the entire eastern boundary of the District. The only boundaries where gradients suggest inflow are along the edges of the basin, where the adjoining geologic formations are relatively consolidated or fine-grained and probably yield little subsurface inflow (e.g. Dunnigan Hills, edges of Capay Valley, western boundary of District).

31 Recent DWR land use maps are generally available in hard copy while they are being digitized. The use of fairly old (1989) crop data on page 36 is a weakness of the Draft Plan, but the relatively large effort that would be required to independently digitize and subtotal the areas of every category of agricultural field in the District may not be justified. As an interim source of information, the annual crop reports prepared by the Yolo County agricultural commissioner could be reviewed for trends relevant to water resources management.

32 There are relatively small but significant areas of riparian vegetation along Cache Creek, Putah Creek, and the various branches and tributaries of Willow Slough. These have been mapped and quantified in the Lower Putah Creek Resource Management Plan (U. S. Fish and Wildlife Service 1992), the Cache Creek Resources Management Plan (Yolo County, 1996), the Yolo County Draft Habitat Conservation Plan (EIP Associates, Inc. 1995), and the Willow Slough Watershed Integrated Resources Management Plan (Jones & Stokes Associates 1996). These areas should be included in Tables 4 and 5 on pages 37 and 38.

33 In Table 12 on page 45 of the Draft Plan, the amount of urban water use listed in 1996 is less than the amount of urban use in 1989 reported in the 1992 Yolo County Water Plan Update (page 14, Table 2) and even less than the projected amounts of use for 1996. Were different sources of data used, or have water conservation efforts been more successful than anticipated?

34 On page 46, it is stated that water diverted into the District discharges as

subsurface flow under Putah Creek into Solano County. Surface water diverted into the District also discharges as a surface spill from Willow Canal into Putah Creek above Pedrick Road. Parties involved in resolving disputes over instream flows in Putah Creek are developing a program for monitoring and accounting of riparian water in lower Putah Creek that will require metering of spills from Willow Canal. This objective is consistent with Action C of the Draft Plan.

35 On page 56, the plan states that the District provides input to various legislators regarding bills and actions that could adversely impact Yolo County. The District's concern regarding issues affecting the Countywide water supply is appreciated. However, as the Draft Water Management Plan notes on several occasions, the District's authorization and geographical area are limited. Yolo County is the only local agency who has responsibilities regarding the general water supply, as evidenced by its adoption of the Groundwater Transfer Ordinance. As such, the Plan should be revised to indicate that the Board of Supervisors remains the primary representative in speaking for Countywide water interests.

36 The findings detailed on page 63 include no statement regarding the present or predicted future long-term balance between water supply and demand. However, five of the actions in the Action Program (Actions F-J) assume that increased supplies are needed. The findings section needs to include an analysis of water supply/demand balance, based on the information presented in Chapters IV and V. The finding regarding Dunnigan Hills water needs and the associated Action J are examples of conclusions that do not obviously follow the information presented earlier on water supply and use.

37 The scope of the agricultural water users workshops discussed on page 72 should be expanded to include discussion of tailwater ponds, and the relationships between tillage practices, stormwater management, and groundwater recharge. In addition, there is a reference among the topics for discussion of "Incentives for inter-District water transfers." It is unclear where this is an error and should read "intra-District" transfers, or whether there is an intent to transfer water out of the District to other water agencies. Please clarify.

38 It is not clear why the District considers existing land and water use data inadequate, as described on page 74. The problems with existing data should be described more specifically, and the action should be designed to efficiently address those problems without duplicating other existing or planned monitoring programs. Estimates of available water supplies and current rates of use are critical issues that must be quantified and understood if water management is to be effective.

39 Page 75 of the Draft Plan notes that information regarding land use patterns and the locations of agricultural and domestic wells can be incorporated into the County's GIS mapping data base, if it is determined that the County will make the maps available for use by other agencies. Please note that the County's GIS maps are always available for use by both the public and other governmental agencies and we welcome the opportunity to work with the District in improving future monitoring efforts.

Map 2 only shows the watershed boundary above Capay Dam. It should be revised to include the watershed boundaries below the dam as well.

40 The depth to water data for Cache and Putah Creeks shown on Map 8 would provide a more useful indicator of available groundwater storage capacity if they were expressed as depth below the creek thalweg elevation. The creek beds are 20-30 feet lower than the surrounding valley floor elevation in some places, so much of the storage capacity that appears to be vacant on Map 8 could not be filled without inducing increase groundwater outflow to the creeks.

Conclusion

41 Despite its gaps, the Draft Plan contains many excellent ideas that deserve rapid implementation. Use of the District's water conveyance facilities to redistribute groundwater pumping stresses during a prolonged drought, the development of in-lieu recharge programs to benefit water supply quantity and reliability, workshops to better inform the public about water issues, improved streamflow monitoring on Willow Slough, and the coordination of water quality data are exciting examples of the many opportunities that could result from the Water Management Plan. The County strongly supports this effort and offers its views in the spirit of strengthening the document so that it will provide the greatest level of benefits for all concerned.

42 We look forward to working with the District and other interested parties in preparing the Final Water Management Plan. Once the final document has been completed and is available for public review, a series of public forums should be held to acquaint landowners and residents with the provisions of the plan. In addition, the Board of Supervisors would appreciate a workshop with the District to review the Final Water Management Plan, prior to its adoption before the Board of Directors.

If there are any questions regarding the issues discussed in this letter, please contact David Morrison, Assistant Planning and Public Works Director, at (530) 666-8041 or by e-mail at david.morrison@ccm.yolocounty.org. The opportunity to comment has been greatly appreciated.

Sincerely,

Lois Wolk, Chair
Yolo County Board of Supervisors

cc: City of Davis
City of West Sacramento
City of Winters
City of Woodland
UC-Davis
Water Resources Association

TAB 2

CALIFORNIA CODES
WATER CODE
SECTION 10750-10750.10

10750. The Legislature finds and declares that groundwater is a valuable natural resource in California, and should be managed to ensure both its safe production and its quality. It is the intent of the Legislature to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions.

10750.2. (a) Subject to subdivision (b), this part applies to all groundwater basins in the state.

(b) This part does not apply to any portion of a groundwater basin that is subject to groundwater management by a local agency or a watermaster pursuant to other provisions of law or a court order, judgment, or decree, unless the local agency or watermaster agrees to the application of this part.

10750.4. Nothing in this part requires a local agency overlying a groundwater basin to adopt or implement a groundwater management plan or groundwater management program pursuant to this part.

10750.6. Nothing in this part affects the authority of a local agency or a watermaster to manage groundwater pursuant to other provisions of law or a court order, judgment, or decree.

10750.7. (a) A local agency may not manage groundwater pursuant to this part within the service area of another local agency, a water corporation regulated by the Public Utilities Commission, or a mutual water company without the agreement of that other entity.

(b) This section applies only to groundwater basins that are not critically overdrafted.

10750.8. (a) A local agency may not manage groundwater pursuant to this part within the service area of another local agency without the agreement of that other entity.

(b) This section applies only to groundwater basins that are critically overdrafted.

10750.9. (a) A local agency that commences procedures, prior to January 1, 1993, to adopt an ordinance or resolution to establish a program for the management of groundwater pursuant to Part 2.75 (commencing with Section 10750), as added by Chapter 903 of the

Statutes of 1991, may proceed to adopt the ordinance or resolution pursuant to Part 2.75, and the completion of those procedures is deemed to meet the requirements of this part.

(b) A local agency that has adopted an ordinance or resolution pursuant to Part 2.75 (commencing with Section 10750), as added by Chapter 903 of the Statutes of 1991, may amend its groundwater management program by ordinance or resolution of the governing body of the local agency to include any of the plan components set forth in Section 10753.7.

10750.10. This part is in addition to, and not a limitation on, the authority granted to a local agency pursuant to other provisions of law.

CALIFORNIA CODES
WATER CODE
SECTION 10752

10752. Unless the context otherwise requires, the following definitions govern the construction of this part:

(a) "Groundwater" means all water beneath the surface of the earth within the zone below the water table in which the soil is completely saturated with water, but does not include water which flows in known and definite channels.

(b) "Groundwater basin" means any basin identified in the department's Bulletin No. 118, dated September 1975, and any amendments to that bulletin, but does not include a basin in which the average well yield, excluding domestic wells that supply water to a single-unit dwelling, is less than 100 gallons per minute.

(c) "Groundwater extraction facility" means any device or method for the extraction of groundwater within a groundwater basin.

(d) "Groundwater management plan" or "plan" means a document that describes the activities intended to be included in a groundwater management program.

(e) "Groundwater management program" or "program" means a coordinated and ongoing activity undertaken for the benefit of a groundwater basin, or a portion of a groundwater basin, pursuant to a groundwater management plan adopted pursuant to this part.

(f) "Groundwater recharge" means the augmentation of groundwater, by natural or artificial means, with surface water or recycled water.

(g) "Local agency" means any local public agency that provides water service to all or a portion of its service area, and includes a joint powers authority formed by local public agencies that provide water service.

(h) "Recharge area" means the area that supplies water to an aquifer in a groundwater basin and includes multiple wellhead protection areas.

(i) "Watermaster" means a watermaster appointed by a court or pursuant to other provisions of law.

(j) "Wellhead protection area" means the surface and subsurface area surrounding a water well or well field that supplies a public water system through which contaminants are reasonably likely to migrate toward the water well or well field.

CALIFORNIA CODES
WATER CODE
SECTION 10753-10753.9

10753. (a) Any local agency, whose service area includes a groundwater basin, or a portion of a groundwater basin, that is not subject to groundwater management pursuant to other provisions of law or a court order, judgment, or decree, may, by ordinance, or by resolution if the local agency is not authorized to act by ordinance, adopt and implement a groundwater management plan pursuant to this part within all or a portion of its service area.

(b) Notwithstanding subdivision (a), a local public agency, other than an agency defined in subdivision (g) of Section 10752, that provides flood control, groundwater management, or groundwater replenishment, or a local agency formed pursuant to this code for the principal purpose of providing water service that has not yet provided that service, may exercise the authority of this part within a groundwater basin that is located within its boundaries within areas that are either of the following:

(1) Not served by a local agency.

(2) Served by a local agency whose governing body, by a majority vote, declines to exercise the authority of this part and enters into an agreement with the local public agency pursuant to Section 10750.7 or 10750.8.

10753.2. (a) Prior to adopting a resolution of intention to draft a groundwater management plan, a local agency shall hold a hearing, after publication of notice pursuant to Section 6066 of the Government Code, on whether or not to adopt a resolution of intention to draft a groundwater management plan pursuant to this part for the purposes of implementing the plan and establishing a groundwater management program.

(b) At the conclusion of the hearing, the local agency may draft a resolution of intention to adopt a groundwater management plan pursuant to this part for the purposes of implementing the plan and establishing a groundwater management program.

10753.3. (a) After the conclusion of the hearing, and if the local agency adopts a resolution of intention, the local agency shall publish the resolution of intention in the same manner that notice for the hearing held under Section 10753.2 was published.

(b) Upon written request, the local agency shall provide any interested person with a copy of the resolution of intention.

10753.4. The local agency shall prepare a groundwater management plan within two years of the date of the adoption of the resolution of intention. If the plan is not adopted within two years, the resolution of intention expires, and no plan may be adopted except pursuant to a new resolution of intention adopted in accordance with this chapter.

10753.5. (a) After a groundwater management plan is prepared, the local agency shall hold a second hearing to determine whether to adopt the plan. Notice of the hearing shall be given pursuant to Section 6066 of the Government Code. The notice shall include a summary of the plan and shall state that copies of the plan may be obtained for the cost of reproduction at the office of the local agency.

(b) At the second hearing, the local agency shall consider protests to the adoption of the plan. At any time prior to the conclusion of the second hearing, any landowner within the local agency may file a written protest or withdraw a protest previously filed.

10753.6. (a) A written protest filed by a landowner shall include the landowner's signature and a description of the land owned sufficient to identify the land. A public agency owning land is deemed to be a landowner for the purpose of making a written protest.

(b) The secretary of the local agency shall compare the names and property descriptions on the protest against the property ownership records of the county assessors.

(c) (1) A majority protest shall be determined to exist if the governing board of the local agency finds that the protests filed and not withdrawn prior to the conclusion of the second hearing represent more than 50 percent of the assessed value of the land within the local agency subject to groundwater management pursuant to this part.

(2) If the local agency determines that a majority protest exists, the groundwater plan may not be adopted and the local agency shall not consider adopting a plan for the area proposed to be included within the program for a period of one year after the date of the second hearing.

(3) If a majority protest has not been filed, the local agency, within 35 days after the conclusion of the second hearing, may adopt the groundwater management plan.

10753.7. A groundwater management plan may include components relating to all of the following:

(a) The control of saline water intrusion.

(b) Identification and management of wellhead protection areas and recharge areas.

(c) Regulation of the migration of contaminated groundwater.

(d) The administration of a well abandonment and well destruction program.

(e) Mitigation of conditions of overdraft.

(f) Replenishment of groundwater extracted by water producers.

(g) Monitoring of groundwater levels and storage.

(h) Facilitating conjunctive use operations.

(i) Identification of well construction policies.

(j) The construction and operation by the local agency of groundwater contamination cleanup, recharge, storage, conservation, water recycling, and extraction projects.

(k) The development of relationships with state and federal

regulatory agencies.

(l) The review of land use plans and coordination with land use planning agencies to assess activities which create a reasonable risk of groundwater contamination.

10753.8. (a) A local agency shall adopt rules and regulations to implement and enforce a groundwater management plan adopted pursuant to this part.

(b) Nothing in this part shall be construed as authorizing the local agency to make a binding determination of the water rights of any person or entity.

(c) Nothing in this part shall be construed as authorizing the local agency to limit or suspend extractions unless the local agency has determined through study and investigation that groundwater replenishment programs or other alternative sources of water supply have proved insufficient or infeasible to lessen the demand for groundwater.

10753.9. In adopting rules and regulations pursuant to Section 10753.8, the local agency shall consider the potential impact of those rules and regulations on business activities, including agricultural operations, and to the extent practicable and consistent with the protection of the groundwater resources, minimize any adverse impacts on those business activities.

CALIFORNIA CODES
WATER CODE
SECTION 10754-10754.3

10754. For purposes of groundwater management, a local agency that adopts a groundwater management plan pursuant to this part has the authority of a water replenishment district pursuant to Part 4 (commencing with Section 60220) of Division 18 and may fix and collect fees and assessments for groundwater management in accordance with Part 6 (commencing with Section 60300) of Division 18.

10754.2. (a) Subject to Section 10754.3, except as specified in subdivision (b), a local agency that adopts a groundwater management plan pursuant to this part, may impose equitable annual fees and assessments for groundwater management based on the amount of groundwater extracted from the groundwater basin within the area included in the groundwater management plan to pay for costs incurred by the local agency for groundwater management, including, but not limited to, the costs associated with the acquisition of replenishment water, administrative and operating costs, and costs of construction of capital facilities necessary to implement the groundwater management plan.

(b) The local agency may not impose fees or assessments on the extraction and replacement of groundwater pursuant to a groundwater remediation program required by other provisions of law or a groundwater storage contract with the local agency.

10754.3. Before a local agency may levy a water management assessment pursuant to Section 10754.2 or otherwise fix and collect fees for the replenishment or extraction of groundwater pursuant to this part, the local agency shall hold an election on the proposition of whether or not the local agency shall be authorized to levy a groundwater management assessment or fix and collect fees for the replenishment or extraction of groundwater. The local agency shall be so authorized if a majority of the votes cast at the election is in favor of the proposition. The election shall be conducted in the manner prescribed by the laws applicable to the local agency or, if there are no laws so applicable, then as prescribed by laws relating to local elections. The election shall be conducted only within the portion of the jurisdiction of the local agency subject to groundwater management pursuant to this part.

10755. (a) If a local agency annexes land subject to a groundwater management plan adopted pursuant to this part, the local agency annexing the land shall comply with the groundwater management plan for the annexed property.

(b) If a local agency subject to a groundwater management plan adopted pursuant to this part annexes land not subject to a groundwater management plan adopted pursuant to this part at the time of annexation, the annexed territory shall be subject to the groundwater management plan of the local agency annexing the land.

10755.2. (a) It is the intent of the Legislature to encourage local agencies, within the same groundwater basin, that are authorized to adopt groundwater management plans pursuant to this part, to adopt and implement a coordinated groundwater management plan.

(b) For the purpose of adopting and implementing a coordinated groundwater management program pursuant to this part, a local agency may enter into a joint powers agreement pursuant to Chapter 5 (commencing with Section 6500) of Division 7 of Title 1 of the Government Code with public agencies, or a memorandum of understanding with public or private entities providing water service.

(c) A local agency may enter into agreements with public entities or private parties for the purpose of implementing a coordinated groundwater management plan.

10755.3. Local agencies within the same groundwater basin that conduct groundwater management programs within that basin pursuant to this part, and cities and counties that either manage groundwater pursuant to this part or have ordinances relating to groundwater within that basin, shall, at least annually, meet to coordinate those programs.

10755.4. Except in those groundwater basins that are subject to critical conditions of groundwater overdraft, as identified in the department's Bulletin 118-80, revised on December 24, 1982, the requirements of a groundwater management plan that is implemented pursuant to this part do not apply to the extraction of groundwater by means of a groundwater extraction facility that is used to provide water for domestic purposes to a single-unit residence and, if applicable, any dwelling unit authorized to be constructed pursuant to Section 65852.1 or 65852.2 of the Government Code.

10756. (a) On or before April 1, 1998, the department shall prepare and publish, in a bulletin of the department published pursuant to

Section 130, a report on the number of agencies that have adopted and implemented groundwater management plans, or that manage groundwater, pursuant to this part or pursuant to any of the following authorities:

(1) Part 2.75 (commencing with Section 10750) as added by Chapter 903 of the Statutes of 1991.

(2) Other statutory authority.

(3) Adjudication.

(4) Local ordinance.

(b) The report shall also include all of the following information:

(1) The number of agencies that do not overlie a groundwater basin or that overlie a basin with groundwater that is not usable.

(2) The number of agencies whose groundwater is managed by another agency.

(3) The number of agencies that have expressed no interest in initiating groundwater management.

(c) The report may include any of the following information, if determined by the department to be available:

(1) The volume or percentage of extracted groundwater that is managed in accordance with a groundwater management plan or other authority described in subdivision (a).

(2) The extent of basinwide coordination.

(3) The number of interstate basins for which a groundwater management plan has been adopted.

(4) Any other information determined by the department to be relevant.

(d) The department shall update the report periodically, as needed.

TAB 3

YOLO COUNTY

FLOOD CONTROL & WATER CONSERVATION DISTRICT

September 7, 1999

Mr. Mike McGowan, Chairman
Yolo Co. Board of Supervisors
625 Court Street
Woodland, CA 95695

RE: Yolo County Minute Order 99-293

Honorable Board of Supervisors:

Thank you for providing a copy of the above referenced minute order and recommendation to the District. The District assumes the copies were provided for informational purposes only, to let the District know how the County intends to address water management within water agencies that the County staffs. The District is pleased with the County's continued acknowledgment of the vital role that water plays in Yolo County.

The District feels it is important to provide comment on the minute order for your consideration.

The District plans to make available for public review and comment in the near future its draft Water Management Plan, which sets forth a comprehensive plan for managing groundwater and surface water supplies within the District. The District's draft plan includes many of the elements to be included in the County's proposed groundwater management program, as set forth in the 1992 update of the County Water Plan.

The Water Resources Association of Yolo County (WRA) represents only about 25% of the number of individual water entities and purveyors in Yolo County. At least two nonmember agencies have already adopted water management plans, and the District's draft plan will soon be available for public review and comment. The WRA does not have the authority to "ensure that

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General Manager
James F. Eagan

separate 3030 (or other plans) ...are coordinated", nor does the WRA have the funding necessary to provide that service or to "ensure" that all plans are "combined into one overall Yolo County Plan." The WRA can be a vehicle for assuring that its members receive information on the development of groundwater management plans and for coordinating meetings of affected agencies.

As the County is aware, the District has been working on developing a District Water Management Plan for a couple of years using powers provided through the District's enabling legislation, the District Act. Due to the fact that the District is not dependant upon the narrow scope and powers provided within AB 3030, the District can and is developing a more comprehensive plan, addressing both groundwater and surface water and their interdependent relationship. Enclosed is the introduction to the District's draft Plan, which includes a discussion of the relationship of the District's Plan to more limited plans prepared under AB 3030. Also enclosed is a copy of a letter from the District's attorney that concludes that the District's water management authority is broader under the District Act than under AB 3030.

The District's draft plan will soon be provided to its Scoping Committee for review and comment. Invited participants to the Scoping Committee were Yolo County, the four incorporated cities of Yolo County, the University of California at Davis, urban and agricultural business people from within the District, and water agencies within or adjacent to the District. After receiving comments from the Scoping Committee, the District's Board will modify the draft as deemed appropriate and provide the new draft to agencies and the public for review and comment.

This has been a slower process than the District had planned, but frankly, once the plan development began it became more complex than originally envisioned. The District's plan will be more comprehensive than either an AB 3030 or an AB 3616 plan. The District's plan will provide a comparison of itself to the parameters of the other two plans. The District's plan has been developed

to allow it to be adopted under the provisions of AB 3030 and/or AB 3616, if it ever determines it is advantageous to do so.

In summary, the District is preparing a comprehensive water management plan that addresses both surface and groundwater pursuant to authority in the District Act. AB 3030 was intended to provide authority to adopt groundwater (not surface water) management plans for agencies that otherwise lacked that authority. Numerous groundwater management plans have been adopted in California without utilizing the authority provided in AB 3030. The perception that a plan that has not been adopted under AB 3030 is deficient in some respect is simply incorrect. In fact, the scope under an AB 3030 plan would be much more limited than a plan adopted under the District Act.

The District looks forward to working with the Scoping Committee, including the County's representative to review and comment on the draft water management plan. The product of the time and the effort put into this project will exceed any template put forth by the legislature for generic water management planning. The District's plan will be a comprehensive document representing historic information, the current situation, and future strategic planning and implementation activities. One element of the District's Plan will be to work cooperatively with other public agencies in the implementation and potential expansion of the Plan.

Sincerely yours,

Donald A. Rominger

Donald A. Rominger
Chairman

Enclosures

c: Board of Directors

I. INTRODUCTION

The Yolo County Flood Control & Water Conservation District (District), was formed by the California Legislature in 1951, to control, manage, and distribute water resources for beneficial use within the District's boundaries (Stats. 1951, Chapter 1657, Page 3772, "District Act"). In adopting this Water Management Plan, the District will formalize its mission:

> *"To plan, develop, and manage the conjunctive use of its surface and groundwater resources to provide a safe and reliable water supply, at a reasonable cost, to sustain the socioeconomic and environmental well-being of Yolo County."*

To further its mission, the District has acquired water rights and manages extensive facilities, while developing plans to obtain supplemental water supplies to meet future needs within the District. The County of Yolo, in adopting the "Yolo County Water Plan - 1984" and the "Water Plan Update - 1992," recognized the District's role in helping to provide water supplies for current and future needs within the County.

The District has determined it would be useful, to further its mission, to prepare a document (this "Water Management Plan") to: (1) provide information about the District's water rights, facilities, and distribution system, (2) provide information about the District's historic management activities in the conjunctive use of surface water and groundwater supplies, and (3) set forth actions for the District to plan for the management of its existing water supplies and develop supplemental supplies to meet beneficial needs within the District.

Two recent legislative enactments (AB 3616, the Agricultural Water Suppliers Efficient Water Management Act, 1990, Water Code Section 10903; and AB 3030, the Groundwater Management Act, 1992, Water Code Section 10700), set forth provisions to include within a district's water conservation plan and groundwater management plan, respectively. The District has chosen to prepare a comprehensive water resources management plan instead of separate plans to deal with water conservation and groundwater management.

The District's Water Management Plan (Plan) includes provisions that are authorized for inclusion within AB 3616 and AB 3030. The Plan would therefore satisfy the requirements of an AB 3616 plan and an AB 3030 plan. The District's Plan, however, reflects the District's groundwater management activities authorized by the District Act, which are far more extensive than those authorized under AB 3030. For that reason, at this time the District's Plan relies on the groundwater and surface water management authority that are already granted to the District under the District Act.

The District's Plan does not extend beyond the existing boundaries of the District because the District's authority to implement the Plan outside its boundaries is limited. The District Act authorizes the District to enter into contracts, joint powers agreements, and other cooperative arrangements with the County, cities, other public agencies, and water companies. Therefore, part of the Plan will be to investigate cooperative arrangements with other public agencies within Yolo County regarding implementation of the District's Plan.

The District, in preparing this Plan, received guidance from a Scoping Committee comprised of individuals representing urban and agricultural interests within and outside the District. Meetings of the Scoping Committee have been open to the public. The District expresses its appreciation to the members of the Scoping Committee for their invaluable participation in developing this Plan.

The formulation of this Plan represents the District's effort to continue its leadership role in developing and managing water supplies to meet the current and future beneficial needs of the District into the next millennium for the long-term benefit of Yolo County.

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ÚL M. BARTKIEWICZ
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1650-146

May 14, 1999

VIA FAX AND MAIL

Mr. James F. Eagan
General Manager
Yolo County Flood Control
& Water Conservation District
34274 State Highway 16
Woodland CA 95695

Re: Groundwater Management

Dear Jim:

This letter discusses whether Yolo County Flood Control and Water Conservation District must adopt a groundwater management plan under Assembly Bill 3030 (Water Code section 10750, et seq.) in order to engage in the kind of groundwater management activities that are authorized under Assembly Bill 3030. For the reasons stated in this letter, I conclude that (1) the District has properly been carrying out groundwater management activities that have been authorized under the District Act for decades before the passage of Assembly Bill 3030, and (2) it is not necessary for the District to adopt a groundwater management plan under Assembly Bill 3030 in order to continue to carry out groundwater management activities.

Assembly Bill 3030 (which was adopted in 1992) authorizes public agencies to adopt "groundwater management plans". An A.B. 3030 plan may include components relating to any the following:

(a) the control of saline water intrusion;

(b) identification and management of wellhead protection areas and recharge areas;

(c) regulation of the migration of contaminated groundwater;

(d) the administration of a well abandonment and well destruction program;

(e) mitigation of conditions of overdraft;

(f) replenishment of groundwater extracted by water producers;

(g) monitoring of groundwater levels and storage;

(h) facilitating conjunctive use operations;

(i) identification of well construction policies;

(j) the construction and operation by the local agency of groundwater contamination cleanup, recharge, storage, conservation, water recycling and extraction projects;

(k) the development of relationships with state and federal regulatory agencies; and

(l) the review of land use plans and coordination with land use planning agencies to assess activities that create a reasonable risk of groundwater contamination.

An A.B. 3030 plan is not required to include all of the above-listed components.

The legislation under which the District was formed (Stats. 1951, ch. 1657, p. 3772,"District Act") authorizes the District to carry out each of the activities that could be included within an A.B. 3030 plan. For example, section 3 of the District Act authorizes the District "to do any and every lawful act necessary to be done that sufficient water may be available for any present or future beneficial use or uses of the lands or inhabitants within the District"; "to conserve such water by storage in surface reservoirs, to divert and transport such waters for beneficial uses within the District, to release such waters from surface reservoirs to replenish and augment the supply of waters in natural underground reservoirs"; to construct works and acquire water rights useful or necessary to make use of water for any purposes authorized by the District Act; to cooperate with and enter into contracts with the United States, the State of California, any political subdivision, County, municipality, district or agency of the State and with any person, association or entity; and to commence or participate in litigation "to prevent interference with or diminution of the natural flow of any stream or surface or subterranean supply of waters used or useful for any purpose of the District or of common benefits to the lands within the District or to its inhabitants", and "to prevent unlawful exportation of water from the District, to prevent contamination, pollution or otherwise rendering unfit for beneficial use the surface or subsurface water used in the District".

In addition, section 4 of the District Act sets forth procedures for the District to require registration of groundwater producing facilities, to levy groundwater pumping charges, to enter onto any property in the District to make tests and measurements concerning groundwater conditions and for preparing an annual engineer's report on groundwater conditions within the District.

For many years the District has been carrying out the types of groundwater management activities that are authorized under A.B. 3030, as well as far more comprehensive groundwater management activities, all as authorized by the District Act. For all of these reasons, I conclude that it is not necessary for the District to adopt a groundwater management plan under A.B. 3030 in order

to carry out groundwater management activities, including the activities proposed in the District's draft Water Management Program.

Finally, I should point out that groundwater management activities are carried out in many parts of California under authority other than A.B. 3030. For example, entities (including three cities) in Sacramento County recently formed the Sacramento North Area Groundwater Management Authority utilizing police power authority. Cities in Yolo County could also exercise their police power to administer a groundwater management program without relying on A.B. 3030.

I hope you find this information helpful. Please call if you have questions.

Sincerely,

PAUL M. BARTKIEWICZ

PMB:nsp

TAB 4

Groundwater Management in California

A Report to the Legislature Pursuant to Senate Bill 1245 (1997)

1999

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

Summary of Groundwater Management

Groundwater Management Plans	Number
AB 255	7
AB 3030	156
Other statutory authority	75
Adjudication	39
Adjudicated groundwater basins	16
Groundwater managed by another agency	29
Coordinated plans *(includes some of the agencies listed above)*	15

No Groundwater Management Plans	Number
Groundwater unavailable and/or unusable	1
Do not overlie a groundwater basin	37
No interest in AB 3030	24

Groundwater Management Ordinances	Number
Ordinances	10

Chapter 1

Authority for Development, Adoption, and Implementation of Groundwater Management Plans

In California, there is no mandatory State groundwater management statute. Through time, six methods of groundwater management have evolved. In this chapter, those six methods are summarized in the approximate order in which they became available for use by local agencies.

1—Overlying Property Rights

Overlying property rights allow anyone in California to build a well and extract their correlative share of groundwater, which is not defined until a basin is adjudicated. The availability and use of groundwater has increased local prosperity in some areas. In other areas, industries dependent on groundwater have provided enough money to construct a water project that can convey surface water into the local area. Even though the management of groundwater under this method may not have been closely coordinated, it has been called a form of "management."

2—Local Agencies

Twenty-three types of districts, local agencies, or entities are identified in the California Water Code with specific statutory provisions to manage surface water. Some of these agencies have statutory authority to develop some forms of groundwater management. Some of these agencies have done so; others have not. These types of districts, local agencies, and entities that may have statutory authority to manage groundwater are listed below.

Types of Agencies with Statutory Authority to Manage Groundwater

- California Water District
- Community Services District
- County Sanitation District
- County Service Area
- County Water District
- County Water Works District
- Flood Control and Water Conservation District
- Harbor and Port District
- Irrigation District
- Joint Exercise of Powers Entity
- Metropolitan Water District
- Municipal Improvement District
- Municipal Utility District
- Municipal Water District
- Public Utility District
- Reclamation District
- Recreation and Park District
- Sewer and Sewer Maintenance Entity
- Water Agency or Authority
- Water Conservation District
- Water Replenishment District
- Water Storage District
- Water Maintenance District

3—Adjudicated Basins

In basins where a suit is brought to adjudicate the basin (e.g., Alhambra vs. Pasadena) the groundwater rights of all the overliers and appropriators are determined by the court. The court also decides:

(1) who the extractors are;

(2) how much groundwater those well owners can extract; and

(3) who the watermaster will be to ensure that the basin is managed in accordance with the court's decree.

The watermaster must report periodically to the court. There are 16 adjudicated groundwater basins in California; their names and locations are shown on the map on page 5 (Figure 1).

4—Special Legislation Districts

In some parts of California, special legislation has been enacted to form groundwater management districts or water management agencies. The legislation allows these districts or agencies to enact ordinances to limit or regulate extraction. There are nine of these groundwater management districts or agencies in California and three agencies that acquired similar authority through amendments to the Water Code. The water management districts or agencies names and locations are shown on the map on page 6 (Figure 2).

5—AB 3030

Sections 10750-10756 of the California Water Code (AB 3030, Chapter 947, Statutes of 1992 and amendments) provide a systematic procedure for an existing local agency to develop a groundwater management plan. These sections of the Water Code provide such an agency with the powers of a water replenishment district to raise revenue to pay for facilities to manage the basin (extraction, recharge, conveyance. and quality). One hundred and forty-nine agencies have adopted groundwater management plans in accordance with AB 3030. Other agencies have begun the process.

6—City and County Ordinances

In 1995, the California Supreme Court declined to review a lower court decision (Baldwin vs. Tehama County) that holds that State law does not occupy the field of groundwater management and does not prevent cities and counties from adopting ordinances to manage groundwater. Butte, Glenn, Imperial, Inyo, Kern, Sacramento, San Benito, San Diego, San Joaquin, Shasta, Tehama, and Yolo Counties now have groundwater management ordinances. Kern County's ordinance applies only to that portion of the County east of the Sierra Nevada. The nature and extent of the police power of cities and counties to regulate groundwater is presently uncertain.

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