

The **Sacramento Valley**
Water Management Agreement

Short-term Workplan



October 2001



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October 29, 2001

164944.ST.04

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Mr. Timothy Quinn
Vice President
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1121 L Street, Suite 900
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Subject: Short-term Workplan
Sacramento Valley Water Management Agreement

Dear Messrs. Guy and Quinn:

On behalf of the Workplan Development Team for the Sacramento Valley Water Management Agreement, I am pleased to transmit to you for distribution to your associates the Short-term Workplan Summary Report. In April of this year, more than 100 organizations reached an unprecedented agreement to manage water in a way that meets water supply, water quality, and environmental needs in the Sacramento Valley and throughout California. The development of this Short-term Workplan is the first step towards achieving the goals and objectives of this historical agreement.

Working together with the water districts of northern California, the Workplan Development Team has formulated this Short-term Workplan. The projects defined in this workplan provide opportunities to meet the Agreement Benefits, which include:

Increased supplies for all uses	Environmental restoration
Sustainable solutions	Meeting water quality standards
Timely resolution	Maintaining consistency with other water management activities

The technical team looks forward to working with you as we collectively implement those opportunities that achieve the goals of the Agreement.

Sincerely,

CH2M HILL

A handwritten signature in black ink, appearing to read "Gary Nuss".

Gary Nuss, P.E.
Program Manager

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**Sacramento Valley Water
Management Agreement
Short-term Workplan
Executive Summary**



October 2001

Sacramento Valley Water Management Agreement Short-term Workplan Executive Summary

Background

As an alternative to participating in the adversarial State Water Resources Control Board (SWRCB) Phase 8 Bay-Delta Water Rights Hearings, California Department of Water Resources (DWR), U.S. Bureau of Reclamation (USBR), Sacramento Valley water interests, and export water users entered into the Sacramento Valley Water Management Agreement (Agreement) in April 2001. This unprecedented Agreement establishes a process by which the parties are collaborating in the development and implementation of a variety of water management projects that will increase the availability of Sacramento Valley water resources. The Agreement provides that increased supplies resulting from the projects would be used first to fully meet inbasin needs, but would also be made available to help meet the requirements of the 1995 Water Quality Control Plan (WQCP), as well as additional export needs. The Agreement relies on a regional strategy to ensure that local water needs are met while providing a peaceful and timely resolution of the dispute over responsibility for meeting the WQCP requirements.

In response to the Agreement, on April 26, 2001, the SWRCB issued an order to postpone and possibly dismiss Phase 8 of its Bay-Delta water rights proceedings and allow implementation of the Agreement. A key element of the Agreement is the development of a short-term workplan for investigating projects to meet the goals of the Agreement. Short-term projects were defined as projects that could potentially be

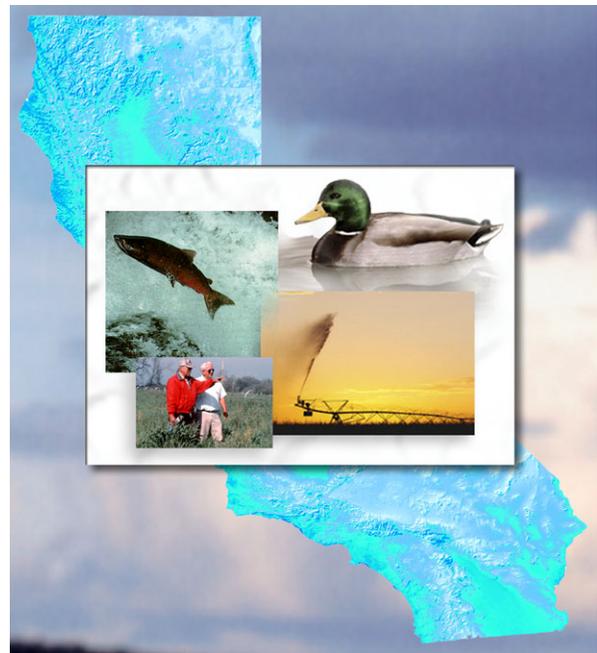
implemented and provide benefits by the 2002 and 2003 water years.

This document summarizes the results of the Short-term Workplan effort. As required by the Agreement, this workplan was completed on October 29, 2001.

Process

The Short-term Workplan was prepared by the Workplan Development Team (WDT), which was formed to provide the technical expertise needed to evaluate the projects to be included in the workplans. A Management Team (MT) was formed to oversee the efforts of the WDT and provide policy-related input.

The WDT included water district, agency, and consultant staff representing both northern California and south-of-Delta export interests with expertise in the areas of



project development, engineering, and benefit/impact assessment. The MT consisted of representatives from all signatory parties for the Settlement Agreement. Numerous meetings and conference calls were held to ensure agreement on approach and content, and to maintain the schedule.

The primary objective of the Short-term Workplan was to evaluate the technical feasibility and potential benefits and costs of projects submitted by willing participants. Project benefits include potential water supply, environmental benefits, and water quality improvements. This “bottom up” approach (i.e., focusing on projects proposed by willing participants) was considered key to the success of any project and the Agreement as a whole.

Solicitation and Identification of Project Proposals

The Northern California Water Association solicited proposals for potential projects throughout the Sacramento Valley on May 7, 2001. The solicitation included a questionnaire requesting a project description, potential supply and other benefits, likely beneficiaries, estimated cost, and schedule. Numerous responses were received from up and down the valley, from as far north as Redding to south of Sacramento. Additional projects were identified through discussions with DWR and review of projects submitted for funding available under various state programs (e.g., AB 303).

Detailed technical evaluations were prepared for each project, and approximately 45 projects were eventually included in the Short-term Workplan. As shown on Figure 1, the proposed projects are spread geographically across the Sacramento Valley. These projects were then grouped into following four major categories (the total number of projects in each category is shown in parentheses):

- *Surface/Groundwater Planning* (12)–monitoring, areawide inventory, or assessment
- *System Improvement* (13)–canal lining, tailwater recovery, or improved operations
- *Water Management* (14)–facilities/programs to use and monitor surface water and groundwater
- *Institutional* (6)–transfers or regulatory hurdles

Approach

The foundation of the Short-term Workplan is represented by the project evaluation technical studies conducted for each of the proposed projects. Short-term projects were defined as those that could be implemented in the next 1 to 2 years and, therefore, included activities and potential supply quantities that were believed to be technically and institutionally feasible. The following set of initial screening criteria were developed to guide the selection and evaluation of projects:

- Projects will assist in meeting the following goals:
 - Provide water to meet upstream demands
 - Improve water quality and export supplies
 - Provide environmental benefits
 - Provide operational flexibility
- Will result in a minimum of adverse environmental impacts
- Appear to be institutionally feasible
- Appear to be technically feasible
- Could be implemented in water year 2002-03

- No evident environmental permitting fatal flaws according to current knowledge/expert opinion

Relationship of Projects and Sub-basins

The relationship among projects was identified early in the process as key to the successful development of the Short-term Workplan. The goal was to develop a mix of projects within each sub-basin that maximize

potential benefits and minimize potential impacts. Evaluating projects within sub-basins is the approach historically taken and proven successful by DWR and used in the development of the Sacramento River Basinwide Water Management Plan (BWMP); therefore, it was determined best to assess the interaction of projects in the context of sub-basins. As shown on Figure 1, these sub-basins generally represent hydrologic and groundwater aquifer boundaries.

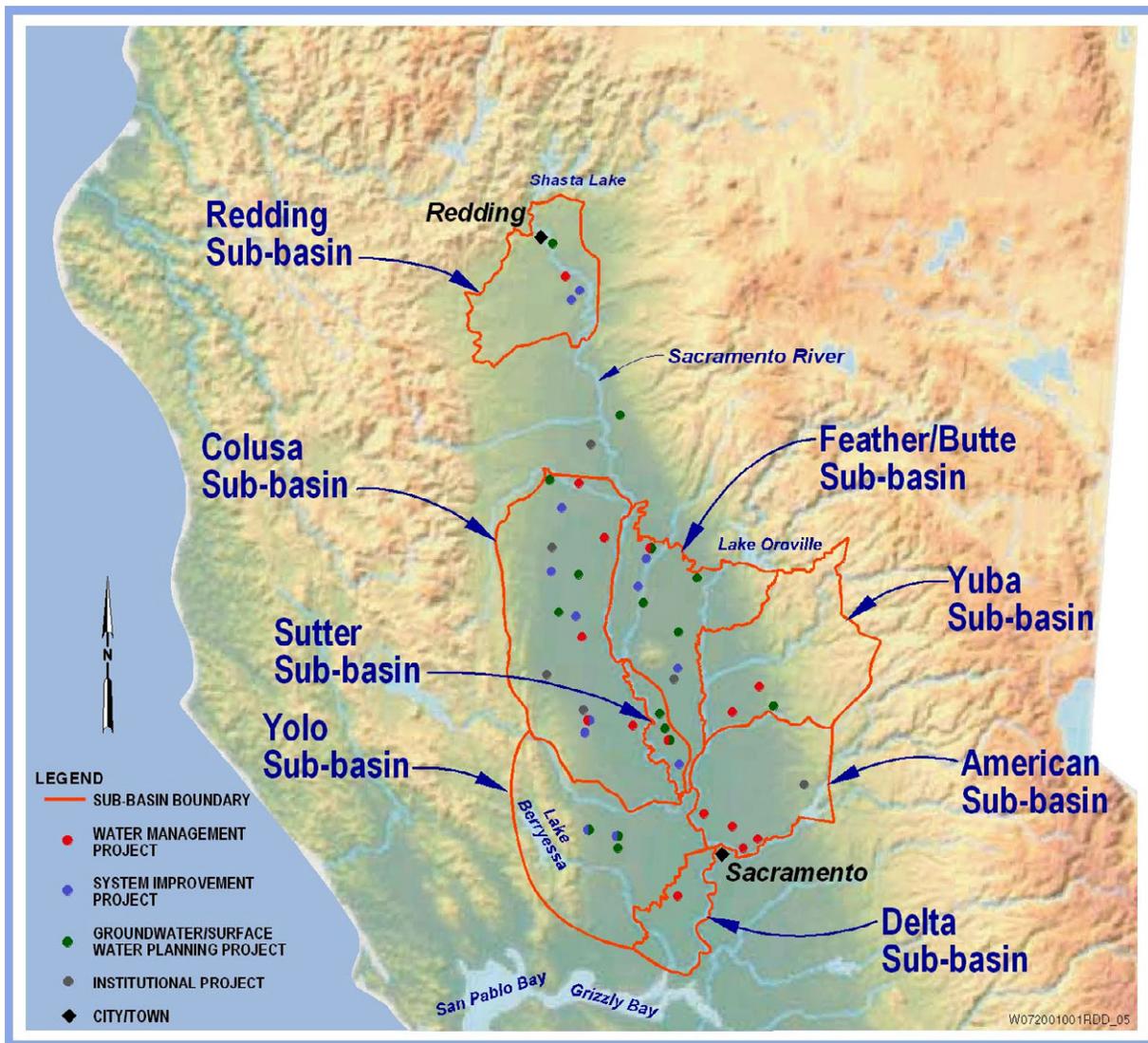
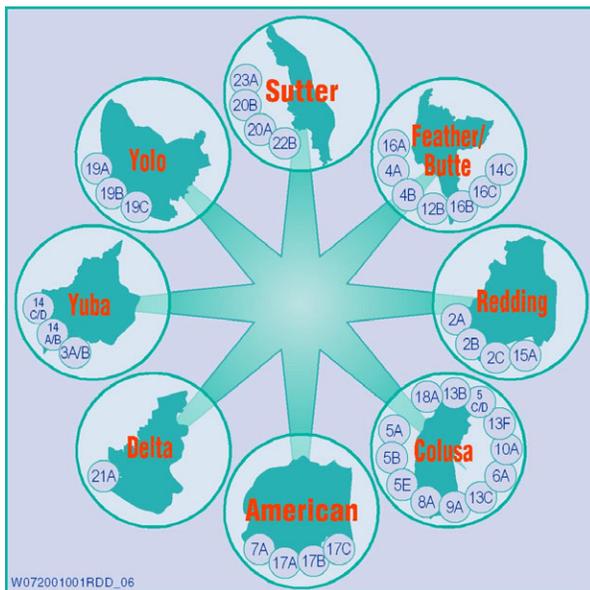


Figure 1
Proposed Projects across Sacramento Valley and Northern California

The following eight sub-basins were used to characterize potential benefits:

- Redding
- Feather/Butte
- Yuba
- Yolo
- Colusa
- Sutter
- American
- Delta

Sub-basin-level evaluations were also determined to be useful to identify the projected future water needs within the sub-basins where data were available. Future sub-basin water requirements were identified for normal and critical years using DWR-projected land use and water data, as well as current contract provisions and historical maximum curtailments for the four sub-basins evaluated in the BWMP. Potential order-of-magnitude estimates and qualitative use discussions were developed for the other four sub-basins. █



Gaming and Modeling

The WDT and MT are evaluating the gaming tools used in the preparation of the BWMP to explore the potential benefits of the proposed projects under various operational scenarios.

Evaluations and Results

As discussed above, a summary technical evaluation was prepared for approximately 45 projects evaluated by the WDT and MT. The evaluations include the following information:

- Project description
- Estimated expected net and secondary benefits (including environmental)
- Preliminary estimate of quantity of water or nature of other water management benefits
- Preliminary order-of-magnitude construction cost estimates and determination of expected annual costs (operation and maintenance)
- Major environmental issues and benefits
- Project implementation plan, including the requirements of any monitoring necessary to evaluate the performance of the project
- Potential timetable for implementing the project

Table 1, located at the end of this executive summary, lists the projected costs and benefits of all of the projects detailed in the Short-term Workplan.

Results

As shown on Figure 1, a generally even distribution of project types was proposed across northern California, with the majority of projects being proposed in the Colusa Sub-basin. Figure 2 summarizes the potential benefits from the water management and system improvement projects. It is estimated that the water management projects collectively could yield as much as 185,000 acre-feet of potentially “new” water supplies. The system improvement projects are estimated to provide 100,000 acre-feet in benefits, although most of this amount will occur in

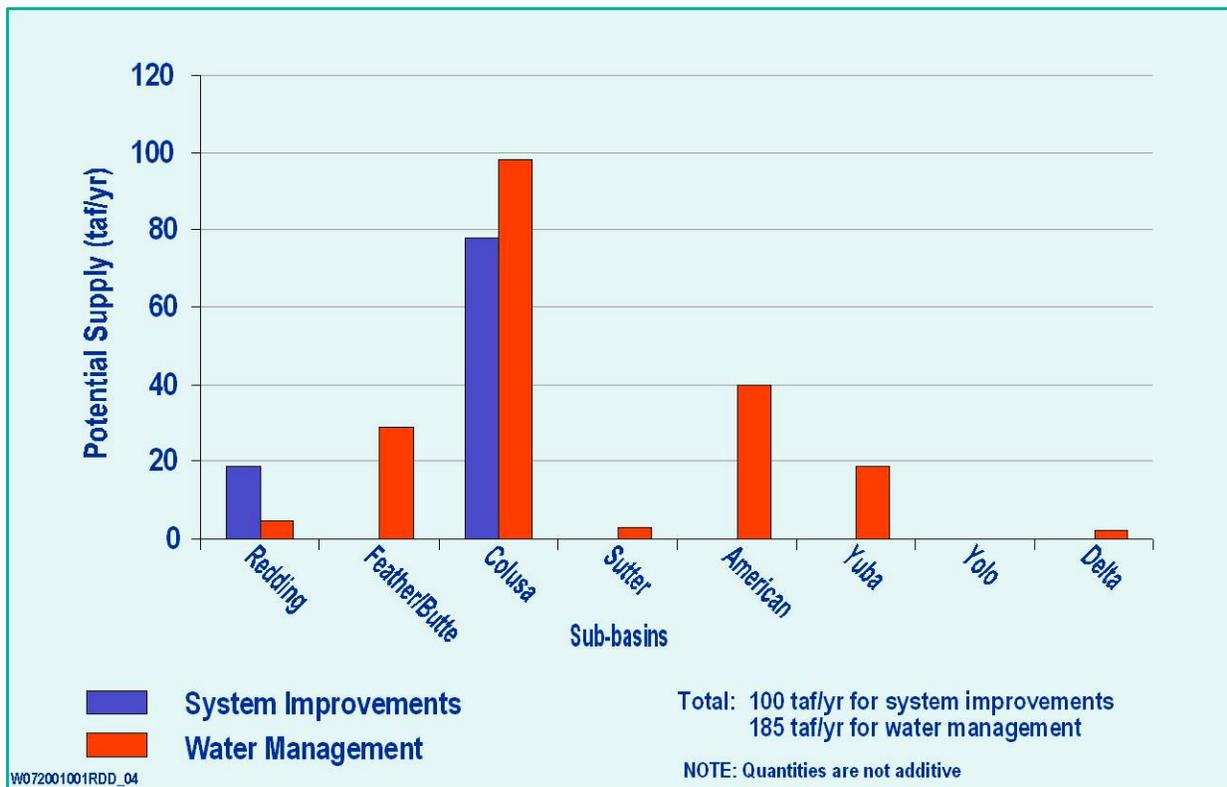


Figure 2
Preliminary Estimate of Short-term Maximum Benefit by Sub-basin

the form of re-routed flows and, therefore, is not generally considered a new water supply. Accordingly, these supplies are not additive. In addition, many of the projects will provide the following qualitative benefits:

- Additional water supply
- Changes in timing/availability of supplies
- Improved water quality
- Improved knowledge of groundwater/surface water interaction
- Improved understanding of groundwater resources and aquifer characteristics
- Identification of regulatory/policy constraints and development of mutual solutions (for institutional projects)

Review of each of the projects revealed that differing operations of any given project could conceivably result in differing poten-

tial benefits. For example, a proposed project within the Redding Sub-basin could be operated to assist in meeting municipal user needs in particular years, or water could instead be transferred out of the sub-basin to meet other needs. Similarly, a project in the Feather/Butte Sub-basin could be operated to maximize local environmental benefits (e.g., supplement stream flows or support riparian vegetation) or to transfer water to assist in meeting Bay-Delta water quality requirements. Figure 2 illustrates potential benefits for each sub-basin.

Figure 3 summarizes the potential cost of the projects by sub-basin. The total estimated cost is \$87 million, broken down as follows:

- Water Management-\$40 million
- System Improvement-\$31 million
- Planning-\$16 million

The majority of potential supply benefits were identified in the Colusa Sub-basin, in large part because Colusa Sub-basin had the

greatest number of projects being proposed of any sub-basin. Some areas, such as the Sutter Sub-basin, contained very few proposed projects because little data exist regarding Sutter’s groundwater and surface water resources or constraints (e.g., water quality limitations).

Implementation Issues

While none of the short-term projects appears to have insurmountable institutional

obstacles, many of the projects do have issues that will need to be addressed for successful implementation. For example, some of the system improvement projects could reduce adjacent wildlife habitat (e.g., canal lining) and/or existing downstream water supply benefits. Success of the water management projects will depend on satisfactory provision for assessing potential impacts on adjacent surface water and groundwater resources. Table 2 summarizes some of the key implementation issues within each of the sub-basins.

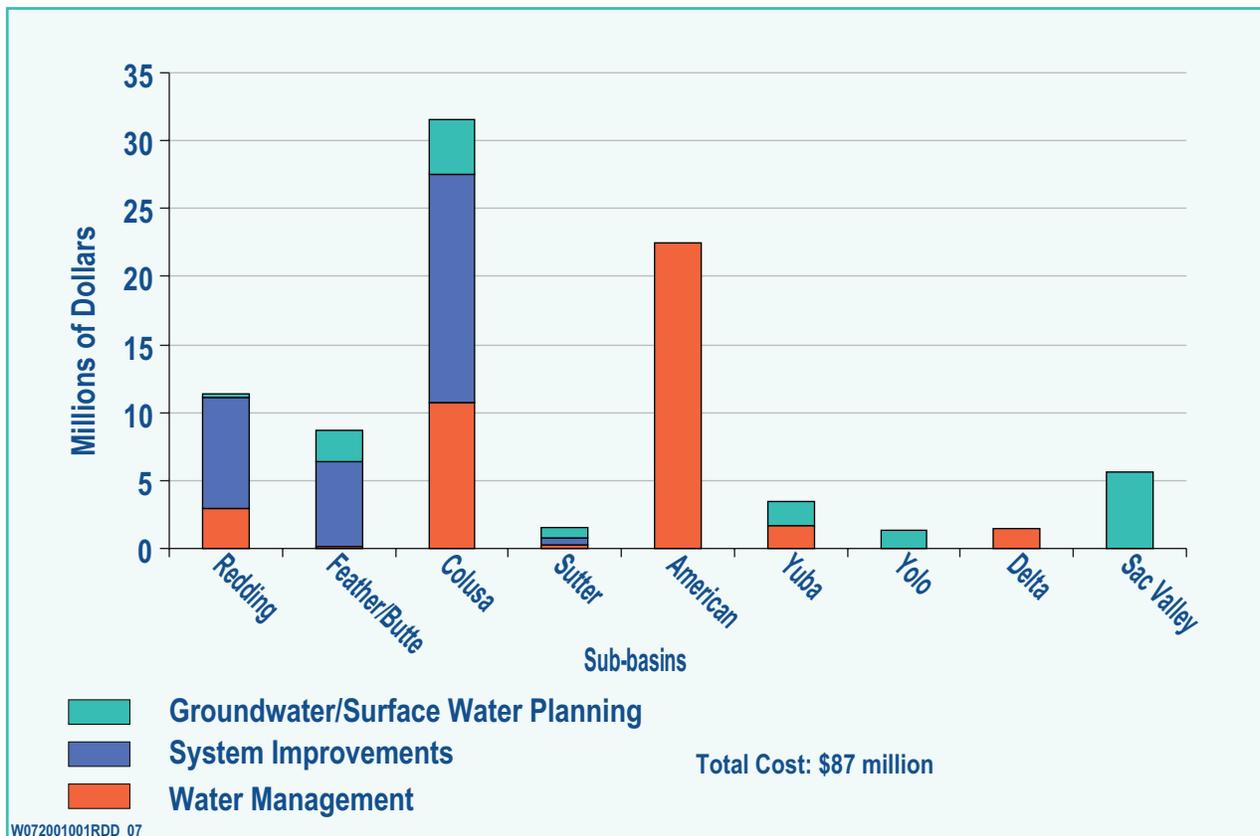


Figure 3
Total Short-term Costs by Sub-basin

TABLE 2
Summary of Implementation Issues by Sub-basin

Sub-basin	Implementation Issues
Redding	<ul style="list-style-type: none"> • Existing forum (Redding Area Water Council) and plan underway <ul style="list-style-type: none"> – Growing municipal and industrial needs and resultant potential impacts to groundwater levels – Some users (Central Valley Project [CVP] municipal water service contractors, e.g., Bella Vista) experience shortages even in normal years • All supply projects proposed by Anderson-Cottonwood Irrigation District (ACID) <ul style="list-style-type: none"> – Opportunities for transfers in normal years (and dry years when ACID contract amounts are not reduced) – River/aquifer relationship may make transfers difficult (ACID could not participate in Forbearance Agreement) – In-basin concerns related to transfers at the expense of meeting in-basin current and future needs • Surface water and groundwater not available to all users (including municipal CVP water service contractors) because of location/lack of infrastructure
Colusa	<ul style="list-style-type: none"> • Proponents range from Glenn-Colusa Irrigation District (GCID), Tehama-Colusa Canal Authority (TCCA), Orland Unit Water Users' Association (OUWUA), Orland-Artois Water District (OAWD), Glenn County to Reclamation District No. 108 (RD 108) • Primary shortages associated with TCCA member districts – institutional and structural projects proposed • No existing sub-basin forum; however, GCID, OUWUA, and OAWD working with DWR on Stony Creek Fan program • Local groundwater-level impact concerns related to proposed increase in pumping • Proposed GCID and OUWUA projects need to be coordinated • Opportunities for transfers in normal and dry years
Feather/Butte	<ul style="list-style-type: none"> • Sub-basin users are primarily State Water Project (SWP) contractors • Groundwater resources are substantial, but not currently available to all in-basin users (shortages in dry years) • Butte County proposing actions to improve existing groundwater modeling capability/expand existing monitoring to determine if water management is in county's interest • Western Canal Water District (WCWD) needs to coordinate water management programs with county • Operation of New Bullards Bar and Yuba County Water Agency (YCWA) management program should be coordinated with operation of the SWP and/or CVP to maximize water supply benefits for county and others

TABLE 2
Summary of Implementation Issues by Sub-basin

Sub-basin	Implementation Issues
Sutter	<ul style="list-style-type: none"> • Poor groundwater quality has historically limited groundwater use and opportunities for water management and reuse • Sutter Mutual Water Company (SMWC) and Sutter County proposing joint studies to evaluate extent of groundwater limitations • Sutter County proposing to evaluate countywide water resources • SMWC system improvement would increase reuse capability
Yuba	<ul style="list-style-type: none"> • Majority of sub-basin water requirements met through Yuba River and groundwater • Recent SWRCB decision resulted in increased fishery flows with corresponding potential decrease in water available to Yuba County users (potentially more frequent shortages) • YCWA key entity: <ul style="list-style-type: none"> – Primary proposals are water management program and coordinated re-operation of New Bullards Bar to maximize the management potential – Local concerns, extensive DWR/USBR/California Department of Fish and Game coordination required for re-operation • Brown's Valley Irrigation District (BVID) management and system improvement projects smaller scale but beneficial
American	<ul style="list-style-type: none"> • Existing forum (Sacramento-Area Water Forum) in place • All proposals are water management (Sacramento Groundwater Authority (SGA)/Natomas Central Mutual Water Company [Natomas]) <ul style="list-style-type: none"> – SGA projects anticipated to be covered by Water Forum Environmental Impact Report – SGA project with Placer County will require extensive coordination given significant infrastructure • Natomas project should be coordinated with SGA program
Yolo	<ul style="list-style-type: none"> • Proposed conversion to increased surface water use by agriculture in wet years to promote water management concerns related to Yolo-Zamora Water District (Y-ZWD) (recent subsidence) – project could provide benefits • Potential for out-of-basin transfers limited (Y-ZWD area did not participate in Bay-Delta Hearings because of lack of hydraulic connection) • Substantial surface water and groundwater resources believed to be available in North Delta area
Delta	<ul style="list-style-type: none"> • Firm surface water supply available through Delta channels and contract with DWR; substantial groundwater resources believed to be available • Proposed construction and use of groundwater wells to test groundwater capability and surface water interaction • Potential benefit of reduced surface water diversions from Delta channels through groundwater exchange

Funding

Approximately \$87 million will be required for the capital costs of the short-term projects. Some of these projects have already received partial funding through programs such as Proposition 13, AB 303, and the CALFED Water Use Efficiency program; but the vast majority of the projects have received little to no funding to date. Project funding and potential cost sharing among beneficiaries is currently a topic of discussion between the WDT and MT. Funding availability and the distribution of potential benefits will drive ultimate project funding decisions.

Relationship with the CALFED Program

As the August 28, 2000 CALFED Programmatic Record of Decision acknowledges, successful implementation of the CALFED program will depend partly upon regional strategies and initiatives. The Agreement will be implemented in a manner compatible with CALFED's goals. This Short-term Workplan embodies the type of regional effort desired by CALFED:

- The proposed system improvement projects represent the desired outcome of the CALFED Agricultural Water Use Efficiency Program
- The water management projects are consistent with groundwater programs called for by CALFED
- The water transfer agreements that will result from these projects are consistent with CALFED's Water Transfer Program

Many of CALFED's environmental restoration, water quality, and water supply goals will be met by implementation of these projects. It is assumed, therefore, that CALFED will provide at least some of the public funding for these projects, although such funding decisions will necessarily be made by CALFED on a case-by-case basis.

Depending on project type and operation, specific potential environmental benefits include:

- Increased flows and/or changes in timing to assist in meeting the WQCP requirements, with resultant aquatic habitat benefits
- Reduced diversions during critical fishery life stage periods
- Augmented stream flows to assist in providing improved fishery habitat
- Increased availability of supplies to support Environmental Water Account goals and needs

To the extent that CALFED agencies participate in the implementation and/or funding of these projects, their environmental documentation will need to be coordinated and consistent with existing and future environmental planning and documentation by CALFED.

Environmental Documentation

Projects included in the Short-term Workplan will fully comply with NEPA or CEQA. The MT has recommended that an Environmental Impact Report/Environmental Impact Statement (EIR/EIS) document be prepared to address the benefits and potential impacts associated with implementing the program. The document will reference the recent CALFED programmatic document. DWR and USBR will be the lead California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) agencies, respectively, with project proponents acting as responsible (or potentially co-lead) agencies.

Outreach

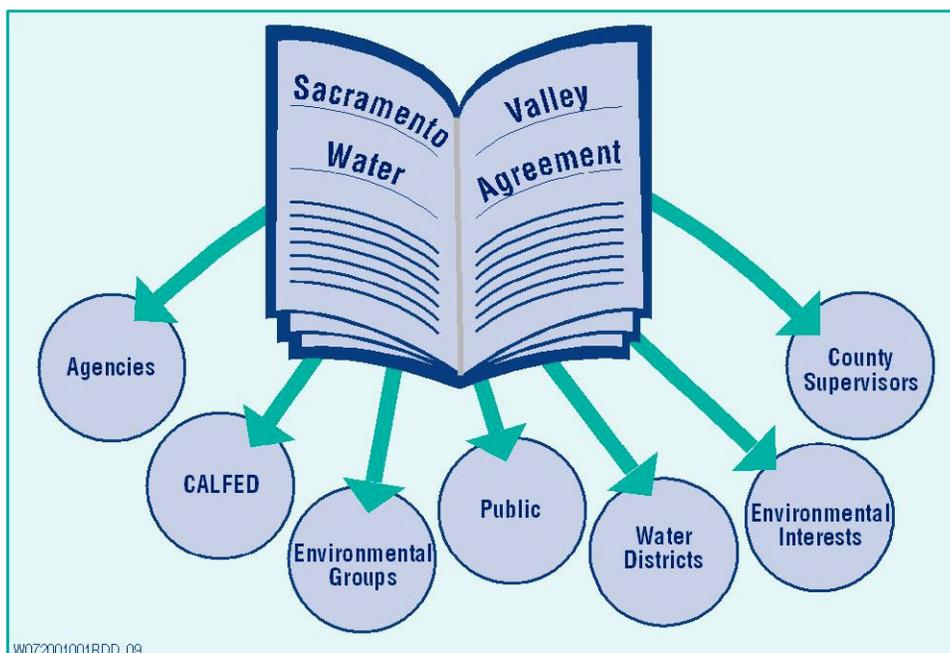
The project team has continued an outreach program to inform agencies, environmental interests, and the public of the Agreement and the results of the Short-term Workplan efforts. Numerous presentations and briefings have been or are soon to be made to the CALFED Management Team and associated staff, as well as to county supervisors (and respective farm bureaus), water districts, and environmental groups including:

- SWRCB
- Glenn County
- Butte County
- Shasta County
- Yuba County
- Sacramento County
- Project Proponents
- Trust for Public Lands
- Natural Heritage Institute
- Plumas County
- Colusa County
- Tehama County
- Sutter County
- Yolo County
- The Bay Institute
- The Nature Conservancy
- U.S. Fish and Wildlife Service

Additional meetings will occur with these entities and others to continue providing updates and gain an understanding of agency and public perspectives. The State Water Board order also calls for public workshops to be conducted every 6 months to provide public participation in the process.

Implementation

The Agreement calls for the workplans to include a provision for allocating the costs and benefits of the projects included in the workplans. The WDT has been and will continue to research funding opportunities for sharing the costs of the projects. Principles of agreement specifying an overall approach to these issues were adopted by the parties on December 14, 2001, and will be further refined in a more detailed agreement to be completed by Spring 2002. Implementation of each of the projects will depend, however, upon the initiative of the individual district proposing the project. Each district will be tasked with solicitation of funds and execution of individual agreements with the project and export interests as to how water produced from each project will be allocated and paid for.



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TABLE 1
Project Summary

Project Number	Project Name	Type	Proponent	Location	Beneficiaries ^a	Current Funding	Short-term (Completion by 2003)				
							Description	Potential Supply (ac-ft/yr) ^b	Capital Cost	Annual O&M Cost	Funding Required (in addition to current funding)
REDDING SUB-BASIN											
2B	ACID Conjunctive Use Program	<i>Conjunctive Water Management</i>	ACID	Shasta/Tehama County	ACID	CALFED \$300,000	Construct six groundwater extraction wells	5,000	\$3,000,000	\$150,000	\$2,700,000
2A	ACID Churn Creek Lateral Improvements ^c	<i>System Improvement</i>	ACID	Redding/ Anderson, California-Shasta County	ACID, Redding Basin	\$100,000	Eliminate seepage and spills with pipeline to replace leaky canal lateral in the reach east of the Sacramento River	9,000	\$5,400,000	\$54,000	\$5,300,000
2C	ACID Main Canal Modernization Project	<i>System Improvement</i>	ACID	Shasta County	Redding Basin CVP, water control, automation, measurements	\$100,000	Reduce diversions, eliminate spills	10,000	\$2,700,000	\$27,000	\$2,600,000
15A	Shasta County Water Agency Redding Basin Water Resources Management Plan ^c	<i>Groundwater/ Surface Water Planning</i>	Shasta County Water Agency (SCWA)	Redding Basin, Shasta County	Redding Basin Water Resources Master Plan, Sacramento River control, local water users including municipalities and agriculture	AB 303 grant for \$130,000	Complete Phase 2C - Water Supply and Management Alternatives, part of multi-step planning process	0	\$250,000	Not applicable	\$120,000
Conjunctive Water Management Totals						\$300,000		5,000	\$3,000,000	\$150,000	\$2,700,000
System Improvements Totals						\$200,000		19,000	\$8,100,000	\$81,000	\$7,900,000
Groundwater/ Surface Water Planning Totals						\$130,000		0	\$250,000	\$0	\$120,000
Totals						\$630,000		Not applicable^d	\$11,350,000	\$231,000	\$10,720,000
FEATHER/BUTTE SUB-BASIN											
16A	Western Canal Water District Groundwater Monitoring Project	<i>Conjunctive Water Management and Groundwater/ Surface Water Planning</i>	Western Canal Water District	Butte County	Butte County, Western Canal	None	Additional monitoring wells and monitoring groundwater response to pumping	29,000	\$323,000	\$870,000	\$323,000
12B	Sutter Extension Water District Sutter-Butte Main Canal Lining Project ^c	<i>System Improvement</i>	Sutter Extension Water District, Butte Water District, Gridley Water District, Richvale Irrigation District	Butte and Sutter counties	Gray Lodge Wildlife Refuge, water districts, Oroville Lake storage	None	Conduct field study, obtain environmental permits, develop final construction drawings	0	\$5,900,000	Not applicable	\$5,900,000
16B	Western Canal Water District Tailwater Recovery System Feasibility Study ^c	<i>System Improvement</i>	Western Canal Water District	Butte County	Western Canal	\$125,000 from Prop. 13 funds	Feasibility analysis of a tailwater recovery system	0	\$125,000	Not applicable	\$0
16C	Western Canal Water District Water Use Efficiency Project	<i>System Improvement</i>	Western Canal Water District	Butte County	Downstream water quality, Feather River diversions, environment	None	Purchase of water management software and recorders, reconstruction of meter calibration station	0	\$266,000	\$13,300	\$266,000
4A	Butte County Integrated Watershed and Resource Conservation Program	<i>Groundwater/ Surface Water Planning</i>	Butte County	Butte County	Paradise Ridge area, Butte County agriculture	\$950,000 from State Water Resources Control Board, Department of Water Resources (DWR)	Integrated watershed and resource conservation, groundwater monitoring and modeling, forecast water use	0	\$1,200,000	Not applicable	\$250,000

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4B	Butte County Groundwater Monitoring Program	Groundwater/ Surface Water Planning	Butte County	Butte County	Paradise Ridge area, Butte County agriculture	None	Additional monitoring wells and extensometer installation, monitoring	0	\$616,000	Not applicable	\$616,000
4C	Butte County Groundwater Modeling Program	Groundwater/ Surface Water Planning	Butte County	Butte County	Paradise Ridge area, Butte County agriculture, groundwater quality	None	Model calibration, scenario modeling, annual updates	0	\$275,000	Not applicable	\$275,000
	Sutter Extension Water District Efficient Use and Management of Return Flows	Institutional	Sutter Extension Water District		Sutter Extension Water District						
Conjunctive Water Management Totals						\$0		29,000	\$161,000	\$870,000	\$161,000
System Improvements Totals						\$125,000		0	\$6,291,000	\$13,300	\$6,166,000
Groundwater/Surface Water Planning Totals						\$950,000		0	\$2,253,000	\$0	\$1,303,000
Totals						\$1,075,000		Not applicable^d	\$8,705,000	\$883,300	\$7,630,000
COLUSA SUB-BASIN											
5B	Glenn-Colusa Irrigation District (GCID) Development of Conjunctive Water Management Facilities ^c	Conjunctive Water Management	GCID	Glenn and Colusa counties	Groundwater users in Stony Creek Fan	None	Full utilization of private landowner wells	50,000 to 60,000	\$300,000 (for short-term landowner project); \$2,600,000 (for pilot study/wells in support of long-term project)	\$1,800,000	\$2,900,000
6A	Maxwell Irrigation District (MID) Conjunctive Use Project	Conjunctive Water Management	MID	Colusa County	MID, Colusa County	\$75,000 (District cost-share)	Test-hole drilling, evaluation and production well construction and testing, groundwater monitoring	8,000 to 13,000	\$2,000,000	\$390,000	\$1,925,000
8A	Stony Creek Fan Conjunctive Water Management Program	Conjunctive Water Management	Orland-Artois Water District (OAWD), Orland Unit Water Users' Association (OUWUA), GCID	Glenn County and the Stony Creek Fan	- OAWD (water supply reliability in all years) - OUWUA (improved management of surface water; infrastructure improvements) - GCID (improved reliability and increased operational flexibility)	\$530,000 (DWR ISI)	The program consists of five elements: (1) Feasibility study (2) Groundwater production investigation (3) Groundwater monitoring program (4) Integrated groundwater/surface water model (5) Outreach plan Pilot scale projects would test direct and in lieu recharge using existing facilities and privately owned wells through contractual agreements with well owners. Monitoring would be conducted to measure performance and basin response.	5,000 (potential minimum supply from pilot study)	\$2,100,000 to \$2,500,000	\$100,000 to \$150,000	\$1,970,000

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10A	Reclamation District No. 108 (RD 108) Pilot Well Development/Conjunctive Management Project ^c	<i>Conjunctive Water Management</i>	RD 108	Yolo and Colusa counties	RD 108, Yolo-Zamora Water District (Y-ZWD), CCWD, DWD, RD 787, Colusa Drain Mutual Water Company	None	Development of five production wells and analysis of basin response	15,000 to 20,000	\$1,300,000	\$525,000	\$1,300,000
13F	TCCA Tehama-Colusa (TC) Canal Extension	<i>Conjunctive Water Management / System Improvement</i>	Tehama-Colusa Canal Authority (TCCA), Y-ZWD	Yolo County	Y-ZWD, City of Woodland, Yolo County Flood Control and Water Conservation District	None	Hydrologic and concept reports, begin initial California Environmental Quality Act/National Environmental Policy Act (CEQA/NEPA) and preliminary design	0	\$3,000,000 to \$4,000,000	Not applicable	\$4,000,000
5C/5D	GCID Flow Measurement Devices in Main Canal, Lateral System, and Drain Outflow Points/GCID Existing Automation Program ^c	<i>System Improvement</i>	GCID	Glenn and Colusa counties	GCID	None	Permitting, design, and construction of 12 flow measurement devices at previously identified system outflow points/permitting, design, and construction of 5 Main Canal check structures	40,000	\$8,700,000	\$106,000	\$8,700,000
9A	OOUWUA and TCCA Regional Water Use Efficiency Project ^c	<i>System Improvement</i>	OOUWUA, TCCA	Glenn and Colusa counties	- OAWD (water supply reliability in all years) - OOUWUA (improved management of surface water; infrastructure improvements) - GCID (improved reliability and increased operational flexibility)	WUE grant for \$200,000	Feasibility study for modernization, regional pipeline, conjunctive water management	0	\$300,000 (feasibility study); \$5,000,000 (pilot projects)	Not applicable	\$5,100,000
13B	TCCA T-C Canal Conveyance of Water to Sites Reservoir ^c	<i>System Improvement</i>	TCCA	Glenn and Colusa counties	All valley water users	None	Feasibility study, review ability of TC Canal to convey potential water to a Sites Reservoir	0	\$400,000	Not applicable	\$400,000
13C	TCCA Development of Conveyance Alternatives for TCCA Emergency Water Supplies ^c	<i>System Improvement</i>	TCCA	Glenn, Colusa, and Yolo counties	TCCA, other users if district's requirements are met	None	Feasibility study for Stony Creek conveyance options; investigate an interim solution to operate a constant head orifice (CHO); agency coordination and permit planning	0 to 38,000 (if interim solution implemented)	\$100,000	Not applicable	\$100,000
5A	GCID Feasibility Study Regulatory Reservoirs and Off-canal Storage ^c	<i>Groundwater/Surface Water Planning</i>	GCID	Glenn and Colusa counties	GCID, users of Colusa Basin Drain Water, TCCA	Yes, WUE grant for \$100,000	Feasibility study	0	\$750,000	Not applicable	\$650,000

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Project Number	Project Name	Type	Proponent	Location	Beneficiaries ^a	Current Funding	Short-term (Completion by 2003)				
							Description	Potential Supply (ac-ft/yr) ^b	Capital Cost	Annual O&M Cost	Funding Required (in addition to current funding)
5E	GCID Glenn County Groundwater Monitoring Program and Model Development ^c	Groundwater/ Surface Water Planning	GCID	Glenn County and the Stony Creek Fan	Glenn County and groundwater users that draw from the Stony Creek Fan	AB 303 grant for \$250,000	Develop groundwater data clearinghouse, analyze existing data, design monitoring program, install new monitoring wells, develop groundwater model	0	\$2,700,000	Not applicable	\$2,450,000
18A	Tehama County Water Inventory and Analysis	Groundwater/ Surface Water Planning	Tehama County	Tehama County	Tehama County, TCCA	AB 303 grant for \$190,000	Information gathering process and analysis	0	\$330,000	Not applicable	\$140,000
	TCCA Preferred Alternative Coordination	Institutional	TCCA		TCCA, fisheries						
	Water Transfer Clearinghouse	Institutional	TCCA		TCCA						
	TCCA Transportation of CVP/non-CVP Water	Institutional	TCCA								
Conjunctive Water Management Totals						\$605,000		78,000 to 98,000	\$10,700,000	\$2,865,000	\$10,095,000
System Improvements Totals						\$200,000		40,000 to 78,000	\$16,500,000	\$87,000	\$16,300,000
Groundwater/Surface Water Planning Totals						\$540,000		0	\$3,780,000	\$0	\$3,240,000
Totals						\$1,345,000		Not applicable^d	\$30,980,000	\$2,952,000	\$29,635,000
YUBA SUB-BASIN											
14A/B	Yuba County Water Agency Conjunctive Use Project (Long-term Project)	Conjunctive Water Management	Yuba County Water Agency (YCWA)	Yuba County	YCWA, Yuba County	Short-term: fully funded (Prop. 13) Long-term: \$200,000 (Prop. 13)	Installation of extraction wells	15,000	\$1,300,000	\$450,000	\$0
3A/B	Brown's Valley Irrigation District Conjunctive Use and Water Management Project	Conjunctive Water Management	Brown's Valley Irrigation District	Yuba County	Brown's Valley Irrigation District, Yuba County	None	Development of four groundwater production wells in lower portion of district and a lift pump and conveyance pipe to supply water to upper end of district	3,600	\$350,000	\$108,000	\$350,000
14C/D	Yuba County Water Agency Coordinated Operations Project	Groundwater/ Surface Water Planning	YCWA	Yuba County	YCWA, Yuba County	None	Feasibility investigation of water supply benefits for out-of-county use, environmental and Endangered Species Act (ESA) assessment, and potential increased flood control benefits	0	\$1,750,000	Not applicable	\$1,750,000
Conjunctive Water Management Totals						\$1,500,000		18,600	\$1,650,000	\$558,000	\$350,000
System Improvements Totals						\$0		0	\$0	\$0	\$0
Groundwater/Surface Water Planning Totals						\$0		0	\$1,750,000	\$0	\$1,750,000
Totals						\$1,500,000		Not applicable^d	\$3,400,000	\$558,000	\$2,100,000

TABLE 1

Project Summary

Project Number	Project Name	Type	Proponent	Location	Beneficiaries ^a	Current Funding	Short-term (Completion by 2003)				
							Description	Potential Supply (ac-ft/yr) ^b	Capital Cost	Annual O&M Cost	Funding Required (in addition to current funding)
SUTTER SUB-BASIN											
23A	RD 1500 Sutter Basin Groundwater Monitoring Well ^c	<i>Conjunctive Water Management/ Groundwater/ Surface Water Planning</i>	RD 1500, SMWC	Sutter Basin, Sutter County	All local water users	None	Additional monitoring well, monitoring and data collection	1,500 to 2,500	\$550,000	\$75,000	\$550,000
22B	Sutter Mutual Water Company Irrigation Recycle Project ^c	<i>System Improvement</i>	Sutter Mutual Water Company (SMWC), Reclamation District No. 1500 (RD 1500)	Sutter Basin, Sutter County	SMWC	None	Feasibility analysis of a tailwater recovery system	0	\$500,000	Not applicable	\$500,000
20A	Sutter County Groundwater Management Plan	<i>Groundwater/ Surface Water Planning</i>	Sutter County	Sutter County	Sutter County	None	Information gathering process and analysis	0	\$360,000	Not applicable	\$360,000
20B	Sutter County Watershed Assessment and Monitoring Program	<i>Groundwater/ Surface Water Planning</i>	Sutter County	Sutter County	All local water users	None	Information gathering process and analysis	0	\$86,000	Not applicable	\$86,000
22A	<i>Sutter Mutual Water Company Conveyance System Modernization (combined with 11A - Basinwide Water Management Plan [BWMP] Sub-basin Measurement)</i>	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Conjunctive Water Management Totals						\$0		1,500 to 2,500	\$275,000	\$75,000	\$275,000
System Improvements Totals						\$0		0	\$500,000	\$0	\$500,000
Groundwater/Surface Water Planning Totals						\$0		0	\$721,000	\$0	\$721,000
Totals						\$0		Not applicable^d	\$1,496,000	\$75,000	\$1,496,000
AMERICAN SUB-BASIN											
7A	Natomas Central Mutual Water Company (NCMWC) Conjunctive Use Project	<i>Conjunctive Water Management</i>	NCMWC	Sacramento and Sutter counties	Natomas, northeast Sacramento County	None	Pump existing wells, monitoring and analyzing results after one season	15,000	\$1,500,000	\$450,000	\$1,500,000
17A	Sacramento Groundwater Authority Conjunctive Use Program - San Juan Family/North Central Group Project	<i>Conjunctive Water Management</i>	Sacramento Groundwater Authority (SGA)	Placer and Sacramento counties	SGA, Placer and Sacramento counties	None	Utilize existing facilities with construction of two wells (Fair Oaks WD-1, Citrus Heights WD-1) and extension of Walerga Pipeline	12,500	\$8,300,000	\$375,000	\$8,300,000
17B	Sacramento Groundwater Authority Conjunctive Use Program City of Sacramento/Arcade Water District Area "D" Project ^c	<i>Conjunctive Water Management</i>	SGA	Placer and Sacramento counties	SGA, Placer and Sacramento counties	None	Utilize existing facilities with construction of Howe Avenue Pipeline and inter-tie at Enterprise Pump Station and construction of Enterprise/Northrop Reservoir and Booster Pump Station	12,500	\$12,700,000	\$375,000	\$12,700,000

TABLE 1
Project Summary

Project Number	Project Name	Type	Proponent	Location	Beneficiaries ^a	Current Funding	Short-term (Completion by 2003)				
							Description	Potential Supply (ac-ft/yr) ^b	Capital Cost	Annual O&M Cost	Funding Required (in addition to current funding)
17C	Sacramento Groundwater Authority Conjunctive Use Program Placer County Water Agency City of Sacramento Project	<i>Conjunctive Water Management</i>	SGA	Placer and Sacramento counties	SGA, Placer and Sacramento counties	None	Not applicable	Not applicable	Not applicable	Not applicable	\$0
	<i>Natomas Inter-basin Transfer Program</i>	<i>Institutional</i>	<i>NCMWC</i>		<i>NCMWC</i>						
Conjunctive Water Management Totals						\$0		40,000	\$22,500,000	\$1,200,000	\$22,500,000
System Improvements Totals						\$0		0	\$0	\$0	\$0
Groundwater/Surface Water Planning Totals						\$0		0	\$0	\$0	\$0
Totals						\$0		Not applicable^d	\$22,500,000	\$1,200,000	\$22,500,000
YOLO SUB-BASIN											
19A	Yolo County Flood Control and Water Conservation District Conjunctive Use Project Feasibility Study for Expanding YCFC & WCD Surface Water Supplies to the Yolo-Zamora Water District	<i>Groundwater/ Surface Water Planning/ System Improvement</i>	Yolo County Flood Control and Water Conservation District	Yolo County	Yolo County Flood Control and Water Conservation District, Yolo County	\$365,000	Feasibility study for expanding surface water supplies to Yolo Zamora	0	\$600,000	Not applicable	\$235,000
19B	Yolo County Flood Control and Water Conservation District Conjunctive Use Project Feasibility Study for Expanding YCFC & WCD Surface Water Supplies to Agricultural Water Users in Areas	<i>Groundwater/ Surface Water Planning/ System Improvement</i>	Yolo County Flood Control and Water Conservation District	Yolo County	Yolo County Flood Control and Water Conservation District, Yolo County	\$120,000	Feasibility study for expanding surface water supplies to agricultural areas northwest of Woodland	0	\$640,000	Not applicable	\$520,000
19C	Yolo County Flood Control and Water Conservation District Groundwater Quality Monitoring Program	<i>Groundwater/ Surface Water Planning</i>	Yolo County Flood Control and Water Conservation District	Yolo County	Yolo County Flood Control and Water Conservation District, Yolo County	None	Development of a groundwater quality monitoring program	0	\$250,000	Not applicable	\$250,000
Conjunctive Water Management Totals						\$0		0	\$0	\$0	\$0
System Improvements Totals						\$0		0	\$0	\$0	\$0
Groundwater/Surface Water Planning Totals						\$485,000		0	\$1,490,000	\$0	\$1,005,000
Totals						\$485,000		Not applicable^d	\$1,490,000	\$0	\$1,005,000
DELTA SUB-BASIN											
21A	Reclamation District No. 2068 (RD 2068) Conjunctive Use Proposal ^c	<i>Conjunctive Water Management</i>	RD 2068	Yolo County	RD 2068, DWR and USBR	None	Develop a single production well to determine conjunctive use potential	1,000 to 2,000	\$1,600,000	\$30,000 to \$60,000	\$1,600,000
Conjunctive Water Management Totals						\$0		1,000 to 2,000	\$1,600,000	\$60,000	\$1,600,000
System Improvements Totals						\$0		0	\$0	\$0	\$0
Groundwater/Surface Water Planning Totals						\$0		0	\$0	\$0	\$0
Totals						\$0		Not applicable^d	\$1,600,000	\$60,000	\$1,600,000

TABLE 1

Project Summary

Project Number	Project Name	Type	Proponent	Location	Beneficiaries ^a	Current Funding	Short-term (Completion by 2003)				
							Description	Potential Supply (ac-ft/yr) ^b	Capital Cost	Annual O&M Cost	Funding Required (in addition to current funding)
SACRAMENTO VALLEY											
11A	BWMP Sub-basin-level Water Measurement	Groundwater/ Surface Water Planning	BWMP participants	Sacramento Valley	Sacramento Valley water users	\$100,000	Feasibility study, design and construction of water measurement facilities	0	\$5,600,000	\$0	\$5,500,000
	<i>Sacramento River Water Transfer Program</i>	<i>Institutional</i>	<i>BWMP participants</i>		Sacramento Valley water users						
Conjunctive Water Management Totals						\$0		0	\$0	\$0	\$0
System Improvements Totals						\$0		0	\$0	\$0	\$0
Groundwater/Surface Water Planning Totals						\$100,000		0	\$5,600,000	\$0	\$5,500,000
Totals						\$100,000		Not applicable^d	\$5,600,000	\$0	\$5,500,000
SACRAMENTO VALLEY BASINWIDE SUMMARY											
Conjunctive Water Management Totals						\$2,205,000		168,100 to 195,100	\$39,886,000	\$5,778,000	\$37,481,000
System Improvements Totals						\$525,000		59,000 to 97,000	\$31,391,000	\$181,000	\$30,866,000
Groundwater/Surface Water Planning Totals						\$2,205,000		0	\$15,844,000	\$0	\$13,639,000
Basinwide Totals						\$4,935,000		Not applicable^d	\$87,121,000	\$5,959,000	\$82,186,000

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Introduction

Background

As part of Phase 8 of the State Water Resources Control Board (SWRCB) Bay-Delta Water Rights Hearings, the Sacramento Valley water users, the California Department of Water Resources (DWR), U.S. Bureau of Reclamation (USBR), and export water users developed the Sacramento Valley Water Management Agreement (Agreement). This Agreement establishes a framework to meet water supply, water quality, and environmental needs in the areas of origin and throughout California through a cooperative project development process. On April 26, 2001, the SWRCB issued an order to postpone and possibly dismiss Phase 8 of its Bay-Delta water rights proceedings and allow implementation of the Agreement, thus providing a collaborative way to resolve numerous potentially contentious issues. The Agreement provides the foundation for a regional strategy to ensure that local water needs are fully met while helping to improve water supplies throughout the state.

A key requirement of the Agreement is to develop both a “short-term” and “long-term” workplan for investigating projects to meet the goals of the agreement. Per the agreement, projects were divided into three categories:

- Short-term (projects that could potentially be implemented and provide benefits by the 2002 and 2003 water years)
- Medium-term (projects that could potentially be implemented and provide benefits by December 2005)
- Long-term (projects that could potentially be implemented and provide benefits by December 2010)

This document presents the results of the short-term workplan effort. The document comprises project evaluations under their respective sub-basins. Figures associated with each project are located at the end of the project evaluation. If the project required the completion of a California Environmental Quality Act (CEQA) environmental checklist, it is provided at the back of the corresponding evaluation. Refer to the Table of Contents for specific page numbers.

Relationship with CALFED Process

Several factors and concepts involved in the Agreement are similar to and compatible with CALFED. These factors include the use of basins, locally driven processes, and incentive type. As discussed further below, the process of identifying projects began by requesting ideas and concepts from Sacramento Valley water users to meet various goals. The evaluations were grouped into sub-basins similar to those in CALFED’s Agricultural Water Use Efficiency (AWUE) program. This was done to ensure that projects were coordinated and maximized benefits while minimizing adverse affects. In addition to grouping by sub-basins, it was also deemed necessary to group the various projects by type. An additional factor or concept that provides compatibility between CALFED and the Agreement is that of

incentive based progress. All parties have incentives to successfully implement the Agreement, because failure implies resumption of the SWRCB's Phase 8 hearing process. The incentives may include water quality improvement, system flexibility, increased water supplies, or financial gain. The incentives and associated benefits are at the root of the current negotiations among the parties.

CALFED's AWUE component has developed a list of targeted benefits (TB) that represent the goals of various stakeholder groups. The quantifiable objectives represent the best estimate of the practical and cost-effective contribution agriculture can make toward achieving the targeted benefit. CALFED believes that incentive-driven local water use efficiency actions are an appropriate investment of public funds to achieve these TBs. The AWUE effort divided the Central Valley into sub-regions. Within each sub-region, a list of TBs was developed. Several of the TBs are common to all or many of the sub-basins; they differ only in specific location. These TBs are as follows:

- Provide flow to improve aquatic ecosystem conditions (TB # 6, 13, 20, 30, 37, 38, 39, 50, 55, 56, 57, 74, and 75)
- Decrease nonproductive evapotranspiration (ET) to increase water supply for beneficial uses (TB # 7, 18, 25, 33, 46, 53, 63, and 88)
- Provide long-term diversion flexibility to increase the water supply for beneficial uses (TB # 8, 19, 26, 27, 28, 29, 34, 35, 36, 47, 48, 49, 51, 54, 64, 65, 89, 90, 91)
- Reduce salinity to enhance and maintain beneficial uses of water (TB # 24, 42, 60, and 84)

The above list of TBs represents over half of the entire list of targeted benefits of the AWUE effort for the Sacramento Valley. Each of the proposed improvement projects discussed in this short-term workplan provide benefits toward achieving at least one of these four TBs. Proponents of many system improvement projects discussed in this short-term workplan applied for and received partial funding under the AWUE program.

CALFED does not consider or evaluate conjunctive use projects and associated funding under the AWUE program. Nevertheless, conjunctive use projects have the potential to directly affect the above targeted benefits. In addition, the groundwater planning projects provide the baseline knowledge and data to implement additional conjunctive use projects that may help to provide the TBs.

Process

Development of the short-term workplan was guided by the formation of two oversight committees. A Workplan Development Team (WDT) was formed to provide the technical expertise for developing the format and content in preparing the workplans. This group included water district, agency, and consultant staff representing both northern California and south-of-Delta export interests with expertise in the areas of project development, engineering, and benefit/impact assessment. A Management Team (MT) was also formed to oversee the efforts of the WDT and to provide policy-related input. The management group consists of representatives from all signatory parties for the Settlement Agreement. Numerous meetings and conference calls were held to ensure agreement on approach and

content, and to maintain the overall program schedule. Table 1 lists the members of both teams.

Table 1
Contact List

Organization	Name
Phase 8 Management Team	
Yuba County Water Agency	Curt Aikens
Northern California Water Association	David Guy
Reclamation District No. 108	Luther Hintz
J.G. Boswell Co.	Tom Hurlbutt
Orland-Artois Water District	Sue King
Western Canal Water District	Matt Colwel
San Luis & Delta-Mendota Water Authority	Dan Nelson
U.S. Bureau of Reclamation	Lowell Ploss
Metropolitan Water District	Tim Quinn
Department of Water Resources	Steve Macaulay
Glenn-Colusa Irrigation District	Van Tenney
Phase 8 Workplan Development Team	
Department of Water Resources	Naser Bateni
Metropolitan Water District	Byron Buck
State Water Contractors	Terry Erlewine
MBK Engineers	Tom Hickman
State Water Contractors	Laura King Moon
CH2M HILL	Gary Nuss
CH2M HILL	Mark Oliver
Montgomery Watson-Harza	Roger Putty
Surface Water Resources, Inc.	Dave Schuster
Westlands Water District	Jim Snow
MBK Engineers	Marc Van Camp
U.S. Bureau of Reclamation	Dan Keppen
Department of Water Resources	Jerry Johns
Metropolitan Water District	Randall Neudeck

The primary objective of short-term workplan development was to identify the potential benefits (including potential water supply, environmental benefits, and water quality improvements) and associated projected costs of projects submitted by willing participants. This “bottom up” approach was considered key to the success of any project and the Agreement as a whole.

Solicitation and Identification of Project Proposals

The Northern California Water Association (NCWA) solicited proposals for potential projects across northern California on May 7, 2001 (a copy of the request and questionnaire is included at the back of this section). The solicitation included a questionnaire requesting a project description, potential supply and other benefits, likely beneficiaries, and estimated cost, and schedule. Numerous responses were received from across the Sacramento Valley, from Redding to south of Sacramento. Additional projects were identified through discussions with the DWR and review of projects submitted for funding available under various state programs (e.g., AB 303).

Approximately 45 projects were eventually included into the short-term plan. These projects were then grouped into four major categories (total number in parentheses):

- *Surface/Groundwater Planning* (12) –monitoring, areawide inventory or assessment
- *System Improvement* (13) –canal lining, tailwater recovery, improved operations
- *Conjunctive Water Management* (14) – facilities/programs to conjunctively use and monitor surface and groundwater
- *Institutional* (6) –transfers, regulatory hurdles

Approach

The foundation of the short-term workplan is represented by the project evaluation technical studies for each of the proposed projects. Short-term projects were defined as those that could be implemented in the next 1 to 2 years and, therefore, included activities and potential supply quantities that were believed to be acceptable to all stakeholders (i.e., they do not require substantial environmental documentation and/or generate substantial stakeholder opposition). The WDT and MT developed the following set of initial screening criteria to guide the selection and evaluation of projects:

1. Individual projects or actions will meet one or more of the overarching program goals with the full suite of recommended projects meeting all goals:
 - Provide water to meet upstream demands
 - Improve water quality and export supplies
 - Provide environmental benefits
 - Provide operational flexibility, spatially or temporally
2. Will result in a minimum of adverse environmental impacts
3. Appears to be institutionally feasible
4. Appears to be technically feasible
5. Can be implemented in water year 2002-03 (projects failing to satisfy this criterion move to medium/long-term plan)
6. No evident environmental permitting fatal flaws according to current knowledge/expert opinion

After this initial screening, the WDT prepared a brief two-page initial project description and conceptual evaluation of project benefits from information presented by the project sponsors. The WDT and MT originally envisioned that approximately 20 projects would be evaluated in detail for their short-term potential benefits and costs. However, as the WDT reviewed each project and both its short- and long-term benefits, it was decided to evaluate all 45 proposals, because each of the proposals potentially met the screening criteria. Each of these proposals was then evaluated for its ability to potentially provide supply benefits by 2002/2003, or identification of an initial phase of a long- or medium-term project that could be completed by 2002/2003 (e.g., feasibility study). This was considered particularly important, recognizing that the long-term projects would generally provide the greatest benefits within or outside the basin.

It was also agreed that this overall approach would provide a “jump-start” to the long-term workplan, as the initial (short-term) components of a long-term project would be reviewed through the preparation of the short-term workplan. The early identification of potential long-term project supply and costs was also agreed to be helpful to allow the MT to begin to consider long-term scenarios. *It is important to note that because long-term assessments were conducted primarily to support the identification of initial phases that could be implemented in the short-term, the review of potential long-term benefits and costs should be viewed as very preliminary.*

Relationship of Projects and Sub-basins

The relationship among projects, both in terms of potentially maximizing benefits and minimizing potential impacts, was identified early in the process as a key issue. Using the approach taken historically by DWR and in the development of the Sacramento River Basin-wide Water Management Plan, it was determined best to assess the interaction of projects in the context of sub-basins. As shown on Figure 1, these sub-basin generally represent hydrologic and groundwater aquifer boundaries. The following eight sub-basins were used to characterize potential benefits (four taken directly from the BWMP [Redding, Colusa, Sutter, and American] and four additionally identified):

- Redding
- Feather/Butte
- Yuba
- Yolo
- Colusa
- Sutter
- American
- Delta

Sub-basin-level evaluations were also determined to be useful to identify the projected (where data was available) future water needs within that sub-basin. Future sub-basin water requirements were identified for normal and critical years (using DWR projected land use and water data, as well current contract provisions and historical maximum curtailments) for the four sub-basins evaluated in the BWMP. Potential order-of-magnitude estimates and qualitative use discussions were developed for the other four sub-basins. As described in “Water Demands and Supply,” a preliminary scope for an assessment similar to that conducted for the BWMP is proposed for the four sub-basins not evaluated in the BWMP.

Gaming and Modeling

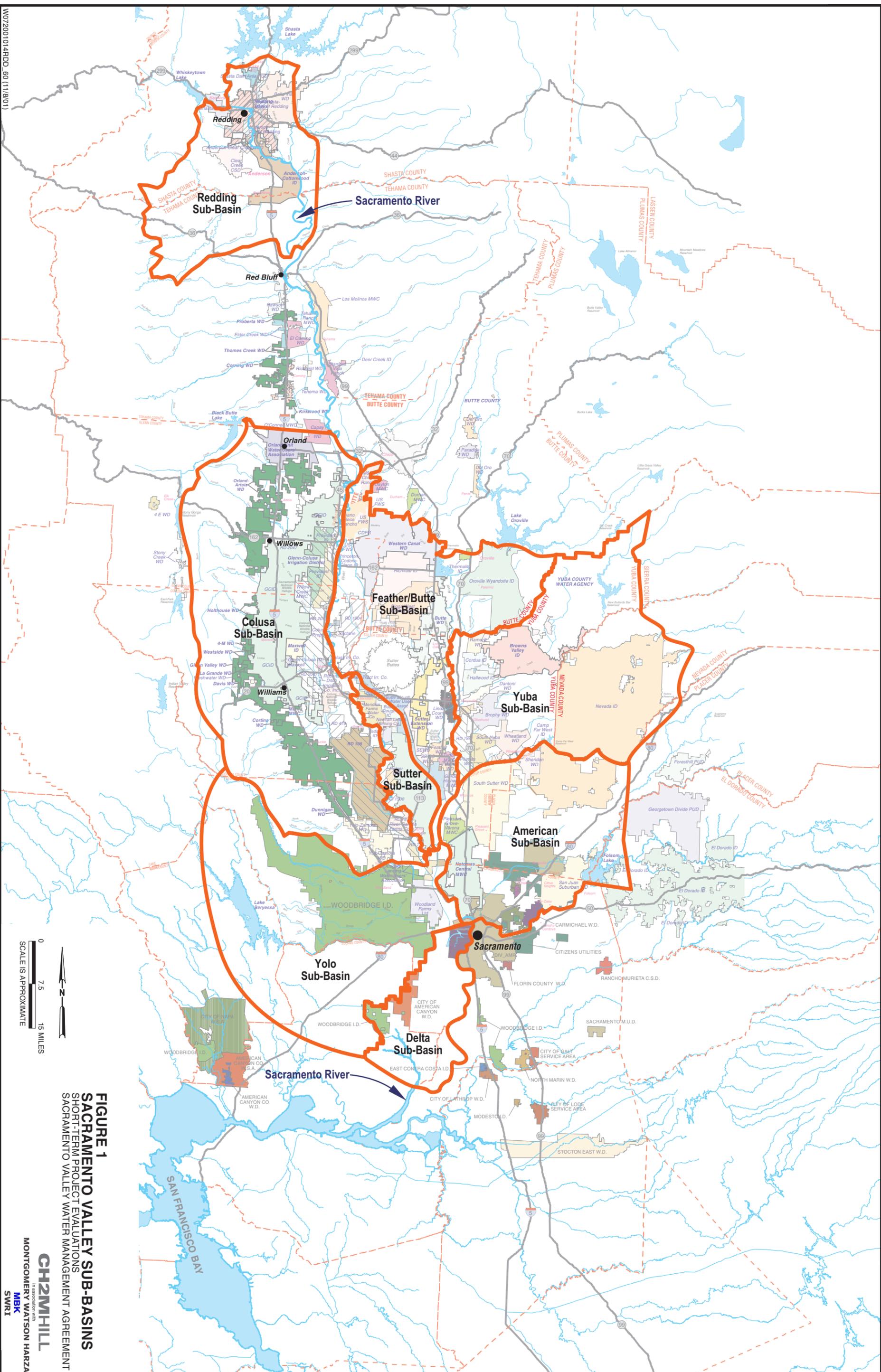
The WDT and MT also evaluated the potential use of existing gaming tools used in the preparation of the BWMP to explore the potential benefits of the proposed projects under various operational scenarios. The use of these tools is still under evaluation and is proposed to review long-term projects, as well as likely short-term project benefits, as part of the development of the long-term plan.

Project-specific Evaluation Content

As discussed above, a summary technical memorandum evaluation was prepared for each of the 45 projects evaluated by the WDT and MT. The evaluations include the following information:

1. Project description, including summary graphics to show the location of the project and key project features.
2. Estimated expected net and secondary benefits, including environmental benefits.
3. Preliminary estimate of quantity of water or nature of other water management benefits that can be realized by implementing the project in the short and long-term (determined in conjunction with project proponent, attempting to account for political and environmental concerns and constraints for short-term projects).
4. Preliminary order-of-magnitude (+50 to -30 percent) construction cost estimates and a determination of the expected annual costs (operation and maintenance) associated with each project, in addition to preliminary reconnaissance-level estimate of long-term project costs.
5. Identification of any major environmental issues and benefits associated with the project. An Initial Study Checklist was prepared for each construction-related project to assess the potential for environmental impacts and the potential for needed environmental documentation.
6. Project implementation plan, including the necessary design of project facilities, project permitting, environmental documentation, and institutional requirements. Project activities associated with operation and monitoring of the short-term projects were identified, including the requirements of any monitoring necessary to evaluate the performance of the project.
7. Potential timetable for implementing the project, including identification of intermediate milestones and related costs, where possible.

Standardized per unit costs were used for all evaluations to the extent possible to ensure consistency.



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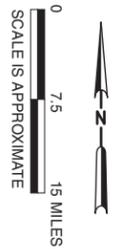


FIGURE 1
SACRAMENTO VALLEY SUB-BASINS
 SHORT-TERM PROJECT EVALUATIONS
 SACRAMENTO VALLEY WATER MANAGEMENT AGREEMENT

Ranking Criteria

The WDT and MT envisioned that each of the proposed projects would be ranked according to the evaluation criteria established by the project team. The following criteria were developed to assist in the ranking process:

1. Provides operational flexibility (extent to which resources can be managed in realtime and/or ramped rapidly up or down)
2. Is cost-effective (minimizes program costs overall for benefits received)
3. Has minimal environmental effects
4. Will provide geographic diversity with respect to other projects
5. Will provide diversity with respect to sources of benefits (groundwater, conservation, dry year fallowing, storage reoperation, etc.)
6. Will serve as a component of and/or provide information to implement the regional water management plan

Subsequent review of each of the projects revealed that differing operations of any given project could conceivably result in differing potential benefits. Therefore, it was determined best not to rank projects, but rather let them proceed on their own merits. It is recognized by the WDT and MT that most of the long-term projects could face substantial implementation issues (as could some of the short-term projects) related to the magnitude and distribution of potential benefits.

Public Outreach

The project team has continued an outreach program to inform agencies, environmental interests, and the public of the Agreement and results of the short-term workplan efforts. Numerous presentations and briefings have been or are soon to be made to the CALFED Management Team and associated staff, as well as to county supervisors, water districts, and environmental groups including:

- SWRCB
- Glenn County
- Butte County
- Shasta County
- Sutter County
- Trust for Public Lands
- The Bay Institute
- U.S. Fish and Wildlife Service
- Colusa County
- Tehama County
- Plumas County
- Natural Heritage Institute
- The Nature Conservancy
- Project proponents

Additional meetings are proposed with these entities and others to continue providing updates and gain an understanding of agency and public perspectives.

Environmental Documentation

As discussed above, projects identified in the short-term workplan have, by definition, been conceived to require a minimum level of environmental documentation (i.e., exemptions or limited initial study/negative declaration). Proponents are anticipated to be the lead agency under CEQA; most projects are not likely to require a National Environmental Policy Act (NEPA) document unless federal funding is provided or a federal permit is required.

Environmental compliance related to the long-term projects is anticipated to require a programmatic document that may or may not be tiered from the recent CALFED programmatic document. Depending on which approach is selected, the DWR would likely be the lead CEQA agency, with project proponents acting as responsible (or potentially co-lead) agencies. This issue has not yet been resolved and will be addressed as part of the formulation of the long-term workplan.

Funding

As shown in the Project Summary Table under the “Project Summary Table” tab, estimates of capital and O&M-related costs have been made for each of the short-term projects. Approximately \$75 million will be required for the capital costs of the short-term projects. Some of these projects have received funding through programs and grants, including Proposition 13, AB 303, and DWR’s Water Use Efficiency program, but the vast majority of the projects have received very little to no funding to date. The funding of these projects by these same programs in addition to others is currently a topic of discussion among the WDT and MT, including the appropriateness of cost-sharing. It is anticipated that this issue will continue to be driven by funding availability and the ultimate distribution of potential benefits.

To:	Northern California Water Users	From:	David J. Guy
Re:	Sacramento River Agreement	Date:	May 7, 2001

The State Water Resources Control Board (SWRCB) on April 26th adopted an order to stay Phase 8 of the Bay-Delta water rights proceedings. This order gives rise to the Sacramento Valley Water Management Agreement (Agreement), under which we now have a short time to develop the short term work-plans. To begin this process, we need your help.

As you recall, this Agreement resolves a potential lengthy and expensive hearing and litigation proceeding and now provides a prime opportunity for water users in the Sacramento Valley to improve their water supply reliability and to increase water supply opportunities for all areas of the state. The sustainability of the agreement is dependent upon the development of two work plans that outline projects to meet the goals of the agreement. It is understood throughout the development and negotiation of the agreement that local interests must propose the projects. It is possible that if water users in Northern California do not take the initiative to propose and implement projects that meet various goals, objectives and intent of the numerous parties to the agreement, the agreement could be terminated and we would end up back in a SWRCB hearing process. For this reason, it is critical for us to develop a list of projects proposed by local interest that will demonstrate our willingness, with assurances to protect our existing and future water needs, to propose projects that have the potential to optimize the water supply for use in both the north state and potentially future use throughout the state for other purposes.

Under the agreement, the projects will be categorized into short, medium and long-term projects. Short-term projects are those that can be implemented and provide benefits during the 2002 and 2003 water years. Medium-term projects are those that can be implemented by December 31, 2005 while long-term projects are those that can be implemented by December 31, 2010. The agreement provides funding for the initial development and reconnaissance-level research for projects that are selected by the management group. We all realize how difficult it is and expensive to obtain the necessary information to request funding to implement a project of the size and magnitude to obtain any significant benefits.

To provide the necessary information to the technical and management groups for selecting the various projects to be funded through the agreement, certain information is necessary for any projects you have a desire to pursue. Please make as many copies of the

Northern California Water Users
May 3, 2001
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attached questionnaire as necessary in order to provide a questionnaire for each project. We ask that you provide responses (at least estimates) to the questionnaire for all projects as the goals and objectives of the agreement are very broad and all encompassing. These include:

- Improved water management (i.e., increased efficiency, decreased diversions, or more operational flexibility).
- Increased water supplies for project proponent use and/or environmental benefits.
- Potential increased water supply for future benefit to areas outside of project proponent area.

Providing a response to the questionnaire gives the project proponent the potential opportunity to obtain funds to research and complete preliminary reconnaissance-level analysis to further its project implementation. These funds will be provided to the project proponent for its use in providing greater details to the agreement's management committee. The management committee will then select a list of projects that will be categorized into the short, medium and long-term projects and prioritized for additional implementation funding. Please return your questionnaire to the listed numbers no later than **May 30, 2001**. Thanks for your assistance.

Facsimile

To:	Marc Van Camp (916) 456-0253/ David Guy (916) 442-4035	From:	
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Proposed Project Questionnaire

WORKPLANS FOR SACRAMENTO VALLEY WATER MANAGEMENT AGREEMENT (SWRCB PHASE 8 SETTLEMENT)

1. Project Proponent:
 - A. Contact Person and Address:
 1. Phone Number:
 2. Email Address:
2. Project Title.
3. Project Description (Provide a brief description of the project, including whether the project is a study, pilot project, or full-scale project. Indicate whether the project is directed at improving management of existing water supplies or to seek new and additional supplies).

4. Describe/Quantify Potential Project Benefits.

A. Who/What are the direct project beneficiaries (i.e., district water users, environment or other)?

1. Quantify, if possible, direct benefits.

B. Who/What are secondary/incidental project beneficiaries?

1. Quantify or describe secondary/incidental benefits.

C. Are there potential water supply benefits for water users outside of your proposed project (subject to future negotiations and precautionary off-ramps to protect project proponent interests)?

1. Quantify, if possible, the order or magnitude of the water supply benefits.

5. Estimate Project Costs:

6. Have you already received any funding for this project? If so, how much and from where?

7. Identify any known major environmental issues (both impacts and benefits) associated with the project.

7. Identify parties foreseen to be directly involved in your proposed project.

8. Time Schedule.

A. If funded, estimate when (month/year) project could be completed.

B. If different than A above, estimate when (month/year) actual physical benefits of project would be realized.

9. Is there any other information you believe is important for us to know?

DRAFT PROJECT SUMMARY TABLE (Revised 10/26/01)

Project Number	Project Name	Type	Proponent	Location	Beneficiaries ^a	Current Funding	Short-term (Completion by 2003)				
							Description	Potential Supply (ac-ft/yr) ^b	Capital Cost	Annual O&M Cost	Funding Required (in addition to current funding)
REDDING SUB-BASIN											
2B	ACID Conjunctive Use Program	<i>Conjunctive Water Management</i>	ACID	Shasta/Tehama County	ACID	CALFED \$300,000	Construct six groundwater extraction wells	5,000	\$3,000,000	\$150,000	\$2,700,000
2A	ACID Churn Creek Lateral Improvements ^c	<i>System Improvement</i>	ACID	Redding/ Anderson, California-Shasta County	ACID, Redding Basin	\$100,000	Eliminate seepage and spills with pipeline to replace leaky canal lateral in the reach east of the Sacramento River	9,000	\$5,400,000	\$54,000	\$5,300,000
2C	ACID Main Canal Modernization Project	<i>System Improvement</i>	ACID	Shasta County	Redding Basin CVP, water control, automation, measurements	\$100,000	Reduce diversions, eliminate spills	10,000	\$2,700,000	\$27,000	\$2,600,000
15A	Shasta County Water Agency Redding Basin Water Resources Management Plan ^c	<i>Groundwater/ Surface Water Planning</i>	Shasta County Water Agency (SCWA)	Redding Basin, Shasta County	Redding Basin Water Resources Master Plan, Sacramento River control, local water users including municipalities and agriculture	AB 303 grant for \$130,000	Complete Phase 2C - Water Supply and Management Alternatives, part of multi-step planning process	0	\$250,000	Not applicable	\$120,000
Conjunctive Water Management Totals						\$300,000		5,000	\$3,000,000	\$150,000	\$2,700,000
System Improvements Totals						\$200,000		19,000	\$8,100,000	\$81,000	\$7,900,000
Groundwater/ Surface Water Planning Totals						\$130,000		0	\$250,000	\$0	\$120,000
Totals						\$630,000		Not applicable^d	\$11,350,000	\$231,000	\$10,720,000
FEATHER/BUTTE SUB-BASIN											
16A	Western Canal Water District Groundwater Monitoring Project	<i>Conjunctive Water Management and Groundwater/ Surface Water Planning</i>	Western Canal Water District	Butte County	Butte County, Western Canal	None	Additional monitoring wells and monitoring groundwater response to pumping	29,000	\$323,000	\$870,000	\$323,000
12B	Sutter Extension Water District Sutter-Butte Main Canal Lining Project ^c	<i>System Improvement</i>	Sutter Extension Water District, Gridley Water District, Richvale Irrigation District	Butte and Sutter counties	Gray Lodge Wildlife Refuge, water districts, Oroville Lake storage	None	Conduct field study, obtain environmental permits, develop final construction drawings	0	\$5,900,000	Not applicable	\$5,900,000
16B	Western Canal Water District Tailwater Recovery System Feasibility Study ^c	<i>System Improvement</i>	Western Canal Water District	Butte County	Western Canal	\$125,000 from Prop. 13 funds	Feasibility analysis of a tailwater recovery system	0	\$125,000	Not applicable	\$0

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16C	Western Canal Water District Water Use Efficiency Project	<i>System Improvement</i>	Western Canal Water District	Butte County	Downstream water quality, Feather River diversions, environment	None	Purchase of water management software and recorders, reconstruction of meter calibration station	0	\$266,000	\$13,300	\$266,000
4A	Butte County Integrated Watershed and Resource Conservation Program	<i>Groundwater/ Surface Water Planning</i>	Butte County	Butte County	Paradise Ridge area, Butte County agriculture	\$950,000 from State Water Resources Control Board, Department of Water Resources (DWR)	Integrated watershed and resource conservation, groundwater monitoring and modeling, forecast water use	0	\$1,200,000	Not applicable	\$250,000
4B	Butte County Groundwater Monitoring Program	<i>Groundwater/ Surface Water Planning</i>	Butte County	Butte County	Paradise Ridge area, Butte County agriculture	None	Additional monitoring wells and extensometer installation, monitoring	0	\$616,000	Not applicable	\$616,000
4C	Butte County Groundwater Modeling Program	<i>Groundwater/ Surface Water Planning</i>	Butte County	Butte County	Paradise Ridge area, Butte County agriculture, groundwater quality	None	Model calibration, scenario modeling, annual updates	0	\$275,000	Not applicable	\$275,000
	<i>Sutter Extension Water District Efficient Use and Management of Return Flows</i>	<i>Institutional</i>	<i>Sutter Extension Water District</i>		<i>Sutter Extension Water District</i>						
Conjunctive Water Management Totals						\$0		29,000	\$161,000	\$870,000	\$161,000
System Improvements Totals						\$125,000		0	\$6,291,000	\$13,300	\$6,166,000
Groundwater/ Surface Water Planning Totals						\$950,000		0	\$2,253,000	\$0	\$1,303,000
Totals						\$1,075,000		Not applicable^d	\$8,705,000	\$883,300	\$7,630,000
COLUSA SUB-BASIN											
5B	Glenn-Colusa Irrigation District (GCID) Development of Conjunctive Water Management Facilities ^e	<i>Conjunctive Water Management</i>	GCID	Glenn and Colusa counties	Groundwater users in Stony Creek Fan	None	Full utilization of private landowner wells	50,000 to 60,000	\$300,000 (for short-term landowner project); \$2,600,000 (for pilot study/wells in support of long-term project)	\$1,800,000	\$2,900,000
6A	Maxwell Irrigation District (MID) Conjunctive Use Project	<i>Conjunctive Water Management</i>	MID	Colusa County	MID, Colusa County	\$75,000 (District cost-share)	Test-hole drilling, evaluation and production well construction and testing, groundwater monitoring	8,000 to 13,000	\$2,000,000	\$390,000	\$1,925,000

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8A	Stony Creek Fan Conjunctive Water Management Program	Conjunctive Water Management	Orland-Artois Water District (OAWD), Orland Unit Water Users' Association (OUWUA), GCID	Glenn County and the Stony Creek Fan	- OAWD (water supply reliability in all years) - OUWUA (improved management of surface water; infrastructure improvements) - GCID (improved reliability and increased operational flexibility)	\$530,000 (DWR ISI)	The program consists of five elements: (1) Feasibility study (2) Groundwater production investigation (3) Groundwater monitoring program (4) Integrated groundwater/surface water model (5) Outreach plan Pilot scale projects would test direct and in-lieu recharge using existing facilities and privately owned wells through contractual agreements with well owners. Monitoring would be conducted to measure performance and basin response.	5,000 (potential minimum supply from pilot study)	\$2,100,000 to \$2,500,000	\$100,000 to \$150,000	\$1,970,000
10A	Reclamation District No. 108 (RD 108) Pilot Well Development/ Conjunctive Management Project ^c	Conjunctive Water Management	RD 108	Yolo and Colusa counties	RD 108, Yolo-Zamora Water District (Y-ZWD), CCWD, DWD, RD 787, Colusa Drain Mutual Water Company	None	Development of five production wells and analysis of basin response	15,000 to 20,000	\$1,300,000	\$525,000	\$1,300,000
13F	TCCA Tehama-Colusa (TC) Canal Extension	Conjunctive Water Management / System Improvement	Tehama-Colusa Canal Authority (TCCA), Y-ZWD	Yolo County	Y-ZWD, City of Woodland, Yolo County Flood Control and Water Conservation District	None	Hydrologic and concept reports, begin initial California Environmental Quality Act/National Environmental Policy Act (CEQA/NEPA) and preliminary design	0	\$3,000,000 to \$4,000,000	Not applicable	\$4,000,000
5C/5D	GCID Flow Measurement Devices in Main Canal, Lateral System, and Drain Outflow Points/GCID Existing Automation Program ^c	System Improvement	GCID	Glenn and Colusa counties	GCID	None	Permitting, design, and construction of 12 flow measurement devices at previously identified system outflow points/permitting, design, and construction of 5 Main Canal check structures	40,000	\$8,700,000	\$106,000	\$8,700,000

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							Description	Potential Supply (ac-ft/yr) ^b	Capital Cost	Annual O&M Cost	Funding Required (in addition to current funding)
9A	OUWUA and TCCA Regional Water Use Efficiency Project ^c	System Improvement	OUWUA, TCCA	Glenn and Colusa counties	- OAWD (water supply reliability in all years) - OUWUA (improved management of surface water; infrastructure improvements) - GCID (improved reliability and increased operational flexibility)	WUE grant for \$200,000	Feasibility study for modernization, regional pipeline, conjunctive water management	0	\$300,000 (feasibility study); \$5,000,000 (pilot projects)	Not applicable	\$5,100,000
13B	TCCA T-C Canal Conveyance of Water to Sites Reservoir ^c	System Improvement	TCCA	Glenn and Colusa counties	All valley water users	None	Feasibility study, review ability of TC Canal to convey potential water to a Sites Reservoir	0	\$400,000	Not applicable	\$400,000
13C	TCCA Development of Conveyance Alternatives for TCCA Emergency Water Supplies ^c	System Improvement	TCCA	Glenn, Colusa, and Yolo counties	TCCA, other users if district's requirements are met	None	Feasibility study for Stony Creek conveyance options; investigate an interim solution to operate a constant head orifice (CHO); agency coordination and permit planning	0 to 38,000 (if interim solution implemented)	\$100,000	Not applicable	\$100,000
5A	GCID Feasibility Study Regulatory Reservoirs and Off-canal Storage ^c	Groundwater/ Surface Water Planning	GCID	Glenn and Colusa counties	GCID, users of Colusa Basin Drain Water, TCCA	Yes, WUE grant for \$100,000	Feasibility study	0	\$750,000	Not applicable	\$650,000
5E	GCID Glenn County Groundwater Monitoring Program and Model Development ^c	Groundwater/ Surface Water Planning	GCID	Glenn County and the Stony Creek Fan	Glenn County and groundwater users that draw from the Stony Creek Fan	AB 303 grant for \$250,000	Develop groundwater data clearinghouse, analyze existing data, design monitoring program, install new monitoring wells, develop groundwater model	0	\$2,700,000	Not applicable	\$2,450,000
18A	Tehama County Water Inventory and Analysis	Groundwater/ Surface Water Planning	Tehama County	Tehama County	Tehama County, TCCA	AB 303 grant for \$190,000	Information gathering process and analysis	0	\$330,000	Not applicable	\$140,000
	TCCA Preferred Alternative Coordination	Institutional	TCCA		TCCA, fisheries						
	Water Transfer Clearinghouse	Institutional	TCCA		TCCA						
	TCCA Transportation of CVP/non-CVP Water	Institutional	TCCA								

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Conjunctive Water Management Totals						\$605,000		78,000 to 98,000	\$10,700,000	\$2,865,000	\$10,095,000
System Improvements Totals						\$200,000		40,000 to 78,000	\$16,500,000	\$87,000	\$16,300,000
Groundwater/ Surface Water Planning Totals						\$540,000		0	\$3,780,000	\$0	\$3,240,000
Totals						\$1,345,000		Not applicable^d	\$30,980,000	\$2,952,000	\$29,635,000
YUBA SUB-BASIN											
14A/B	Yuba County Water Agency Conjunctive Use Project (Long-term Project)	<i>Conjunctive Water Management</i>	Yuba County Water Agency (YCWA)	Yuba County	YCWA, Yuba County	Short-term: fully funded (Prop. 13) Long-term: \$200,000 (Prop. 13)	Installation of extraction wells	15,000	\$1,300,000	\$450,000	\$0
3A/B	Brown's Valley Irrigation District Conjunctive Use and Water Management Project	<i>Conjunctive Water Management</i>	Brown's Valley Irrigation District	Yuba County	Brown's Valley Irrigation District, Yuba County	None	Development of four groundwater production wells in lower portion of district and a lift pump and conveyance pipe to supply water to upper end of district	3,600	\$350,000	\$108,000	\$350,000
14C/D	Yuba County Water Agency Coordinated Operations Project	<i>Groundwater/ Surface Water Planning</i>	YCWA	Yuba County	YCWA, Yuba County	None	Feasibility investigation of water supply benefits for out-of-county use, environmental and Endangered Species Act (ESA) assessment, and potential increased flood control benefits	0	\$1,750,000	Not applicable	\$1,750,000
Conjunctive Water Management Totals						\$1,500,000		18,600	\$1,650,000	\$558,000	\$350,000
System Improvements Totals						\$0		0	\$0	\$0	\$0
Groundwater/ Surface Water Planning Totals						\$0		0	\$1,750,000	\$0	\$1,750,000
Totals						\$1,500,000		Not applicable^d	\$3,400,000	\$558,000	\$2,100,000
SUTTER SUB-BASIN											
23A	RD 1500 Sutter Basin Groundwater Monitoring Well ^c	<i>Conjunctive Water Management/ Groundwater/ Surface Water Planning</i>	RD 1500, SMWC	Sutter Basin, Sutter County	All local water users	None	Additional monitoring well, monitoring and data collection	1,500 to 2,500	\$550,000	\$75,000	\$550,000
22B	Sutter Mutual Water Company Irrigation Recycle Project ^c	<i>System Improvement</i>	Sutter Mutual Water Company (SMWC), Reclamation District No. 1500 (RD 1500)	Sutter Basin, Sutter County	SMWC	None	Feasibility analysis of a tailwater recovery system	0	\$500,000	Not applicable	\$500,000

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							Description	Potential Supply (ac-ft/yr) ^b	Capital Cost	Annual O&M Cost	Funding Required (in addition to current funding)
20A	Sutter County Groundwater Management Plan	Groundwater/ Surface Water Planning	Sutter County	Sutter County	Sutter County	None	Information gathering process and analysis	0	\$360,000	Not applicable	\$360,000
20B	Sutter County Watershed Assessment and Monitoring Program	Groundwater/ Surface Water Planning	Sutter County	Sutter County	All local water users	None	Information gathering process and analysis	0	\$86,000	Not applicable	\$86,000
22A	Sutter Mutual Water Company Conveyance System Modernization (combined with 11A - Basinwide Water Management Plan [BWWMP] Sub-basin Measurement)	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Conjunctive Water Management Totals						\$0		1,500 to 2,500	\$275,000	\$75,000	\$275,000
System Improvements Totals						\$0		0	\$500,000	\$0	\$500,000
Groundwater/ Surface Water Planning Totals						\$0		0	\$721,000	\$0	\$721,000
Totals						\$0		Not applicable^d	\$1,496,000	\$75,000	\$1,496,000
AMERICAN SUB-BASIN											
7A	Natomas Central Mutual Water Company (NCMWC) Conjunctive Use Project	Conjunctive Water Management	NCMWC	Sacramento and Sutter counties	Natomas, northeast Sacramento County	None	Pump existing wells, monitoring and analyzing results after one season	15,000	\$1,500,000	\$450,000	\$1,500,000
17A	Sacramento Groundwater Authority Conjunctive Use Program - San Juan Family/North Central Group Project	Conjunctive Water Management	Sacramento Groundwater Authority (SGA)	Placer and Sacramento counties	SGA, Placer and Sacramento counties	None	Utilize existing facilities with construction of two wells (Fair Oaks WD-1, Citrus Heights WD-1) and extension of Walerga Pipeline	12,500	\$8,300,000	\$375,000	\$8,300,000
17B	Sacramento Groundwater Authority Conjunctive Use Program City of Sacramento/Arcade Water District Area "D" Project ^c	Conjunctive Water Management	SGA	Placer and Sacramento counties	SGA, Placer and Sacramento counties	None	Utilize existing facilities with construction of Howe Avenue Pipeline and inter-tie at Enterprise Pump Station and construction of Enterprise/Northrop Reservoir and Booster Pump Station	12,500	\$12,700,000	\$375,000	\$12,700,000
17C	Sacramento Groundwater Authority Conjunctive Use Program Placer County Water Agency City of Sacramento Project	Conjunctive Water Management	SGA	Placer and Sacramento counties	SGA, Placer and Sacramento counties	None	Not applicable	Not applicable	Not applicable	Not applicable	\$0

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							Description	Potential Supply (ac-ft/yr) ^b	Capital Cost	Annual O&M Cost	Funding Required (in addition to current funding)
	<i>Natomas Inter-basin Transfer Program</i>	<i>Institutional</i>	<i>NCMWC</i>		<i>NCMWC</i>						
Conjunctive Water Management Totals						\$0		40,000	\$22,500,000	\$1,200,000	\$22,500,000
System Improvements Totals						\$0		0	\$0	\$0	\$0
Groundwater/ Surface Water Planning Totals						\$0		0	\$0	\$0	\$0
Totals						\$0		Not applicable^d	\$22,500,000	\$1,200,000	\$22,500,000
YOLO SUB-BASIN											
19A	Yolo County Flood Control and Water Conservation District Conjunctive Use Project Feasibility Study for Expanding YCFC & WCD Surface Water Supplies to the Yolo-Zamora Water District	<i>Groundwater/ Surface Water Planning/ System Improvement</i>	Yolo County Flood Control and Water Conservation District	Yolo County	Yolo County Flood Control and Water Conservation District, Yolo County	\$365,000	Feasibility study for expanding surface water supplies to Yolo Zamora	0	\$600,000	Not applicable	\$235,000
19B	Yolo County Flood Control and Water Conservation District Conjunctive Use Project Feasibility Study for Expanding YCFC & WCD Surface Water Supplies to Agricultural Water Users in Areas	<i>Groundwater/ Surface Water Planning/ System Improvement</i>	Yolo County Flood Control and Water Conservation District	Yolo County	Yolo County Flood Control and Water Conservation District, Yolo County	\$120,000	Feasibility study for expanding surface water supplies to agricultural areas northwest of Woodland	0	\$640,000	Not applicable	\$520,000
19C	Yolo County Flood Control and Water Conservation District Groundwater Quality Monitoring Program	<i>Groundwater/ Surface Water Planning</i>	Yolo County Flood Control and Water Conservation District	Yolo County	Yolo County Flood Control and Water Conservation District, Yolo County	None	Development of a groundwater quality monitoring program	0	\$250,000	Not applicable	\$250,000
Conjunctive Water Management Totals						\$0		0	\$0	\$0	\$0
System Improvements Totals						\$0		0	\$0	\$0	\$0
Groundwater/ Surface Water Planning Totals						\$485,000		0	\$1,490,000	\$0	\$1,005,000
Totals						\$485,000		Not applicable^d	\$1,490,000	\$0	\$1,005,000

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							Description	Potential Supply (ac-ft/yr) ^b	Capital Cost	Annual O&M Cost	Funding Required (in addition to current funding)
DELTA SUB-BASIN											
21A	Reclamation District No. 2068 (RD 2068) Conjunctive Use Proposal ^c	Conjunctive Water Management	RD 2068	Yolo County	RD 2068, DWR and USBR	None	Develop a single production well to determine conjunctive use potential	1,000 to 2,000	\$1,600,000	\$30,000 to \$60,000	\$1,600,000
Conjunctive Water Management Totals						\$0		1,000 to 2,000	\$1,600,000	\$60,000	\$1,600,000
System Improvements Totals						\$0		0	\$0	\$0	\$0
Groundwater/Surface Water Planning Totals						\$0		0	\$0	\$0	\$0
Totals						\$0		Not applicable ^d	\$1,600,000	\$60,000	\$1,600,000
SACRAMENTO VALLEY											
11A	BWMP Sub-basin-level Water Measurement	Groundwater/ Surface Water Planning	BWMP participants	Sacramento Valley	Sacramento Valley water users	\$100,000	Feasibility study, design and construction of water measurement facilities	0	\$5,600,000	\$0	\$5,500,000
	Sacramento River Water Transfer Program	Institutional	BWMP participants		Sacramento Valley water users						
Conjunctive Water Management Totals						\$0		0	\$0	\$0	\$0
System Improvements Totals						\$0		0	\$0	\$0	\$0
Groundwater/Surface Water Planning Totals						\$100,000		0	\$5,600,000	\$0	\$5,500,000
Totals						\$100,000		Not applicable ^d	\$5,600,000	\$0	\$5,500,000
SACRAMENTO VALLEY BASINWIDE SUMMARY											
Conjunctive Water Management Totals						\$2,205,000		168,100 to 195,100	\$39,886,000	\$5,778,000	\$37,481,000
System Improvements Totals						\$525,000		59,000 to 97,000	\$31,391,000	\$181,000	\$30,866,000
Groundwater/Surface Water Planning Totals						\$2,205,000		0	\$15,844,000	\$0	\$13,639,000
Basinwide Totals						\$4,935,000		Not applicable ^d	\$87,121,000	\$5,959,000	\$82,186,000

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							Description	Potential Supply (ac-ft/yr) ^b	Capital Cost	Annual O&M Cost

^aDepending on the implementation of any given project, potential project beneficiaries in terms of increased water supply and/or reliability and quality in addition to local users include all other agricultural, municipal and industrial, and managed environmental in-/out-of-basin water users (excluding those where transfers could not be accomplished), Central Valley Project (CVP) and State Water Project operations, and/or environmental resources (including in-stream, riparian, and upland habitat).

^bac-ft/yr = acre-feet per year.

^cTitle was revised October 9, 2001.

^dSupply totals are not additive because quantities of water obtained from system improvements are not considered to result in water supply benefits to the same degree as would be anticipated from a potential conjunctive water management project.