CALFED

BAY-DELTA

PROGRAM

ANNUAL REPORT

2001

CALIFORNIA WATER

CALFED AGENCIES

CALIFORNIA

The Resources Agency
- Department of Water Resources
- Department of Fish and Game
- The Reclamation Board
- Delta Protection Commission
- Department of Conservation
- San Francisco Bay Conservation and Development Commission

California Environmental Protection Agency
- State Water Resources Control Board

California Department of Health Services

California Department of Food and Agriculture

FEDERAL

Department of the Interior
- Bureau of Reclamation
- Fish and Wildlife Service
- Geological Survey
- Bureau of Land Management

Environmental Protection Agency

Army Corps of Engineers

Department of Agriculture
- Natural Resources Conservation Service
- Forest Service

Department of Commerce
- National Marine Fisheries Service

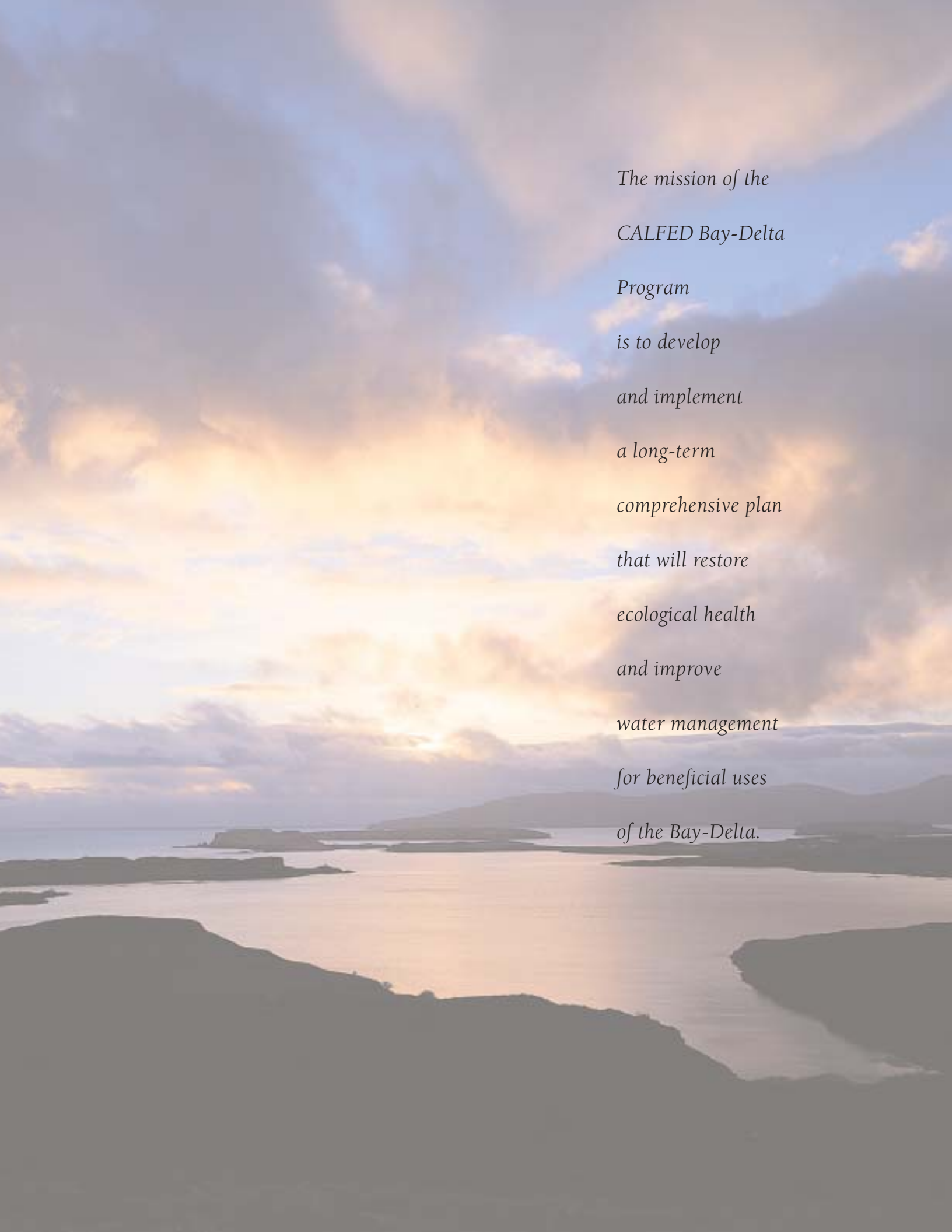
Western Area Power Administration

CALFED BAY-DELTA PROGRAM

The CALFED Bay-Delta Program is a collaborative effort among 23 state and federal agencies (CALFED agencies) to improve water supplies in California and the health of the San Francisco Bay-Sacramento-San Joaquin River Delta Watershed. Under the current governance structure, the CALFED agencies cooperatively implement the Program through their respective agency program authorities, e.g., Federal Central Valley Project Improvement Act, State Proposition 13, State Senate Bill 34, etc., and pertinent funding mechanisms.

In their totality, the individual actions of the CALFED agencies represent the projects and accomplishments shown throughout this report. Additionally, the report's accomplishments are in some instances cumulative in that actions and projects undertaken by CALFED agencies have been ongoing and often pre-date the formation of the CALFED Program.

A fundamental premise of the program is that the agencies can best meet their individual responsibilities by sharing information and cooperating with each other. The CALFED Program is not itself an agency and exercises no authority over the agencies. The program relies on the continuous cooperation of each participating agency, exercising its own legal authority.



The mission of the CALFED Bay-Delta Program is to develop and implement a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta.

TABLE OF CONTENTS

CALFED BAY-DELTA PROGRAM ANNUAL REPORT 2001

EXECUTIVE SUMMARY

Director's Message 1
Accomplishments in 2001 2
Program Highlights 4
Summary of Progress and Balance 12

INTRODUCTION

We All Depend on the Bay-Delta 14
Defining the Conflict 15
Resolving the Conflict 16
An Unprecedented Scope and Vision 17
Timeline 18
Shaping the Solution Through Partnerships 19

REGIONAL VIEW

The Sacramento Region 22
The Delta Region 24
Bay Area Region 26
San Joaquin Valley Region 28
Southern California Region 30

PROGRAM ELEMENTS

A Balanced Approach 32
Science 34
Water Management 37
Storage 40
Conveyance 43
Water Use Efficiency 45
Water Transfers 47
Ecosystem Restoration Program 49
Environmental Water Account 51
Watershed Management 53
Drinking Water Quality 55
Levee System Integrity 57

PROGRAM MANAGEMENT

Program Tracking and Accountability 59
Legislative Actions for 2001 61
Litigation Update 63
Fiscal Information 64
Grants and Loans Project List 69

REFERENCE DOCUMENTS 74

When the CALFED Bay-Delta Program concluded its five-year planning phase last year, many wondered if it could make the transition to a full-scale, cutting edge program capable of resolving ecosystem and water supply reliability problems in California.

As it completes its first full year of implementation, the CALFED Program is building a strong track record in several key areas. More than $500 million has been allocated for water supply, water quality, ecosystem restoration, and levee stability projects throughout California. CALFED's innovative Environmental Water Account provided nearly 300,000 acre-feet of water for environmental needs without reducing deliveries to cities and farms. And through state and federal dry year programs, nearly 300,000 acre-feet was made available to areas suffering from water shortages.

Regional strategies are also beginning to emerge. From the Sacramento Valley Water Management Agreement to water quality exchange programs in the Bay area and Southern California, local groups are developing collaborative, multiple purpose projects to meet their most pressing water needs. These strategies (described on pages 22-32) represent the future of CALFED—funding collaborative, locally-based initiatives to meet the Program's goals.

And perhaps most significant, the Science Program, led by Chief Scientist Sam Luoma, firmly established itself through a series of studies, workshops and panels as an independent, highly credible force for improving the scientific basis of all major projects and programs.

At the same time, however, a number of important program elements are behind schedule—primarily due to a lack of funding. Key projects to increase storage and improve water conveyance through the Bay-Delta system are behind, and the water use efficiency, water quality, watersheds, levee integrity, and science programs are underfunded.

The CALFED Program's commitment to a balanced and integrated approach is what sets this effort apart from any other large-scale restoration or water management program in the nation. It is what keeps diverse stakeholders engaged in the process; it is also what makes it so challenging at times to move ahead.

As we look forward to the year ahead, the CALFED agencies will seek to build upon the collaborative efforts that are well under way, and secure balanced funding from our state, federal, and local partners.

Patrick Wright
Director, CALFED Bay-Delta Program

CALFED BAY-DELTA PROGRAM ACCOMPLISHMENTS

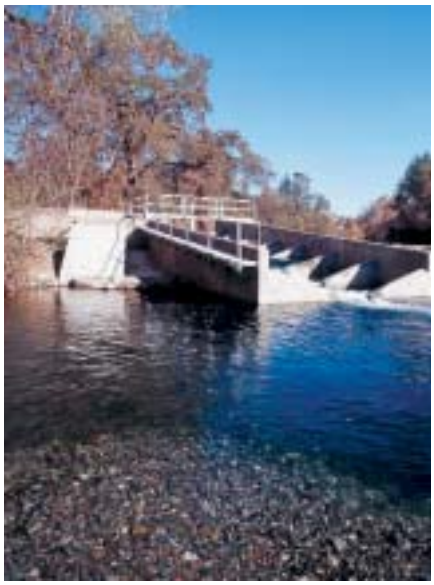
Six years after the signing of the Bay-Delta Accord and subsequent planning and public input, the Bay-Delta Program has met its first year implementation goals and objectives. Major Program accomplishments are listed below for Year 1, grouped by the four program objectives, science and overall program management:

WATER SUPPLY RELIABILITY

- Allocated approximately $200 million from Proposition 13 and other sources to local agencies for water supply, water quality and water use efficiency projects throughout the state
- Initiated or continued planning studies of 5 surface storage projects: Shasta enlargement; Sites Reservoir; In-Delta Storage; Los Vaqueros Expansion; and Upper San Joaquin Storage. Completed Memoranda of Understanding (MOU) with local partners for Sites Reservoir and Los Vaqueros Expansion planning studies
- Completed 16 Memoranda of Understanding or Letters of Intent with 30 local agencies throughout the state to study groundwater storage improvements
- Supported the Governor's Advisory Drought Planning Panel in developing a *Critical Water Shortage Contingency Plan*. Implemented state and federal dry year programs that provided nearly 300,000 acre-feet to areas suffering from water shortages
- Developed and implemented a comprehensive operations plan to coordinate actions and improve water supply reliability

ECOSYSTEM RESTORATION AND WATERSHEDS

- Since 1995, CALFED agencies and stakeholders have funded 326 ecosystem projects for $336 million including projects funded through the Anadromous Fish Restoration Program of the CVPIA. In 2001, $195 million was spent on activities including ecosystem water quality, ecosystem science, strategy planning, and 74 individual ecosystem restoration projects selected through a public solicitation process. Specific highlights include:
  - Began fish passage improvements along 182 river miles
  - Installed 64 fish screens at critical diversion points
  - Conducted 23 studies at $26.5 million for various effects on the Bay-Delta system
- Continued integration of the “single blueprint” for better coordination of ecosystem restoration activities between state and federal agencies
- Funded over 50 locally based watershed projects for $19 million, as well as provided funds in coordination with the Ecosystem Restoration Program to support projects in more than 50 watersheds
- Launched an innovative Environment Water Account that made available 287,000 acre-feet of water in the last year for fish without reducing allocations to farms and cities


Butte Creek Fish Passage

WATER QUALITY

- Developed grant programs for local agencies to address drinking water quality and watershed protection projects throughout the state
- Implemented seven projects in 2001 totaling $26 million for drinking water quality including salinity/selenium treatment and blending and exchanging source waters
- Developed solicitation and selection process for an additional $10 million in drinking water quality projects
- Implemented an ecosystem water quality project in 2001 in the Stockton Deep Water Ship Channel

LEVEE SYSTEM INTEGRITY

- Awarded more than $18 million in year 1 to improve levees on 50 Delta islands while $14.6 million was invested in special projects like ecosystem and levee restoration for water quality and flood protection

SCIENCE

- Conducted $2.5 million in Delta Cross Channel studies to evaluate fishery, water quality and water supply reliability issues
- Hosted the first CALFED Science Conference to engage the scientific community and the public and co-sponsored and participated in the October '01 State of the Estuary Conference
- Convened expert panel and conducted first annual review for the Environmental Water Account, as well as several scientific workshops and program reviews
- Supported and integrated the activities of the independent ecosystem science board, interagency ecological program, EWA science advisors and other independent peer review efforts
- Led the effort to develop an interagency Science Consortium to support common efforts to investigate and share information

PROGRAM MANAGEMENT

- Convened four public workshops throughout the state on Environmental Justice issues in an effort to identify any adverse impacts the Program may have on disadvantaged communities
- Developed new partnership with the Governor's Office for Innovation in Government to address streamlining traditional government business practices
- Established the Bay-Delta Public Advisory Committee, a new 28-member citizens group to advise state and federal agencies on Program implementation

2000-2001 CALFED WATER SUPPLY RELIABILITY HIGHLIGHTS

STRATEGY HIGHLIGHTS

Groundwater Grants & Loans
$23.5 million for 53 projects
(Prop. 13, Chapter 8 Article 4 and Chapter 9 Article 2 , and AB 303)

Groundwater MOUs
16 agreements with counties and local water management agencies

Water Use Efficiency Grants & Loans
$13.4 million for 66 projects

Interim Water Supply Grants
$72 million
(Prop. 13, Chapter 9 Article 4 includes groundwater, water use effciency and conveyance projects)

An on-line water market information and resource for water users

1. *Shasta Storage Evaluations*
2. *Sites Storage Memorandum of Understanding (MOU)*
3. *Delta Storage & Conveyance Evaluations*
4. *Environmental Water Account provided 287,000 acre-feet in transfers for fish without reducing allocations to farms and cities*
5. *Los Vaqueros Expansion Memorandum of Understanding*
6. *• Upper San Joaquin River Storage Evaluations*
   • MWDSC - Friant Water Quality Exchange Partnership
7. *LA urban runoff/groundwater study augmentation*
8. *State and federal dry year programs provided 298,000 acre-feet to water short areas*

New Construction Development

WATER SUPPLY RELIABILITY

PURPOSE

- Water Supply Reliability encompasses an array of projects and approaches to expand water supplies and ensure efficient use of the resource

GOALS

- Working with local and regional agencies, the Program has identified actions that could increase California water supplies by nearly 3 million acre-feet over the next 10 years—enough water to meet the needs of 6 million families annually

ACCOMPLISHMENTS

The CALFED Program made significant progress in the first year to improve California's water supply reliability by providing grants and loans totaling about $200 million which will improve statewide operational flexibility and increase water supply reliability and improve water quality

- **Storage**
  - Initiated or continued planning studies of 5 surface storage projects: Shasta enlargement; Sites Reservoir; In-Delta Storage; Los Vaqueros Expansion and Upper San Joaquin Storage. Completed Memoranda of Understanding with local partners for Sites Reservoir and Los Vaqueros Expansion planning studies
  - Completed 16 Memoranda of Understanding or Letters of Intent with 30 local agencies throughout the state to study groundwater storage improvements
  - Allocated $74 million in loans and grants to local agencies for planning and implementation of groundwater storage improvements
- **Conveyance**
  - Continued design of the Tracy Fish Test Facility to provide critical data on the effectiveness of screening state and federal water project facilities in the South Delta
  - Continued planning and design of permanent fish barriers to Clifton Court Forebay operable tidal and fish barriers in an effort to increase periodic pumping to 10,300 cubic feet per second
- **Transfers**
  - Provided public information and disclosure throughout the year for the "ON TAP" web site, an on-line water market information resource for water users
  - Oversaw development of a standardized method to establish transferable water
  - Continued meetings of interested stakeholders to address and resolve water transfer issues and explore changes to existing law
- **Water Use Efficiency**
  - Awarded $13.3 million for 65 projects—including 37 urban and 28 agricultural
  - Moving forward in defining "appropriate measurement" of water usage and certification of urban Best Management Practices
  - Continued refinement of quantifiable objectives regarding oversight and coordination for agricultural water use

ECOSYSTEM RESTORATION AND WATERSHED MANAGEMENT HIGHLIGHTS

ECOSYSTEM RESTORATION & WATERSHED HIGHLIGHTS

Ecosystem Restoration Grants to date
326 Projects for $336 million

- '97 Approved Projects
- '98 Approved Projects
- '99 Approved Projects
- '00 Approved Projects
- '01 Approved Projects

Watershed Management Grants
Over 50 projects approx. $19 million

- '01 Approved Projects

1. *Butte Creek*
2. *Battle Creek*
3. *Clear Creek*
4. *Sacramento River Conservation Area*
5. *Cosumnes River*
6. *Yolo Bypass*
7. *Tuolumne River*
8. *San Joaquin River*

Spring-Run Chinook Salmon in Butte Creek

ECOSYSTEM RESTORATION AND WATERSHED MANAGEMENT

PURPOSE

- Improving the health of the Bay-Delta system through restoring and protecting habitats and native species

GOALS

- **Ecosystem Restoration**
  - Recover at-risk species, rehabilitate natural hydrology processes to enhance ecosystem water quality, protect and restore functional habitats, reduce negative impacts of non-native species, and improve and maintain water sediment quality for a healthier ecosystem
- **Watershed Management**
  - Increase integration and collaboration of watershed programs with local leadership and continue to better coordinate local, state and federal watershed programs in order to achieve CALFED Program objectives

ACCOMPLISHMENTS

- **Ecosystem Restoration –** Since 1996, CALFED agencies have funded 326 ecosystem projects for $336 million including projects funded through the Anadromous Fish Restoration Program of the CVPIA. Of these projects, 74 were funded in 2001 for $115 million. Specific highlights include:
  - Began fish passage improvements along 182 river miles
  - Installed 64 fish screens at critical diversion points
  - Conducted 23 studies at $26.5 million for various effects on the Bay-Delta system
- **Watershed Management**
  - Funded over 50 locally based watershed projects for $19 million, as well as providing funds in coordination with the Ecosystem Restoration Program to support projects in more than 50 watersheds
  - Formed Interagency Watershed Advisory Team to provide assistance to local watershed groups

2000-2001 CALFED WATER QUALITY HIGHLIGHTS

ECOSYSTEM WATER SUPPLY GRANTS

Ecosystem Water Quality Grants
1 Project for $7 million

8. *Stockton Dissolved Oxygen Investigations*

DRINKING WATER QUALITY GRANTS

Drinking Water Quality Grants
7 Projects for $26 million

1. *Facilitate Water Quality Exchanges for So Cal*
2. *Desalination Research and Innovation Partnership (MWD)*
3. *Bay Area Blending/ Exchange*
4. *Veale-Byron Ag Drainage Reduction*
5. *Bay-Delta Evaluation of Water Quality*
6. *Real-Time Water Quality Monitoring*
7. *Salinity and Selenium Removal for Ag Drainage*

Water Treatment Plant

WATER QUALITY

PURPOSE

- Improve water quality from source to tap for the 22 million Californians whose drinking water supplies come from the Bay-Delta watershed

GOALS

- Collaborate and fund projects that seek to improve the quality of water at its source, seek advancements in treatment technology, research and perform monitoring of the Bay-Delta drinking water quality, continue to look for ways to better manage and deliver water

ACCOMPLISHMENTS

- Implemented seven projects in 2001 totaling $26 million for drinking water quality including salinity/selenium treatment and blending and exchanging source waters
- Developed solicitation and selection process for an additional $10 million in drinking water quality projects
- Worked with science program to facilitate studies and identify sources and solutions of low dissolved oxygen concentrations that hinder upstream migration of certain fish species and violate water quality standards in the Stockton Deep Water Ship Channel
- Implemented one project in 2001 to address ecosystem water quality in the Stockton Deep Water Ship Channel

2000-2001 CALFED DELTA LEVEE SYSTEM INTEGRITY

HIGHLIGHTS

- **CALFED Delta Levee Projects**

1. *McCormack-Williamson Tract (Reclamation District 2110)*
2. *Twitchell Island Levee Setback/Habitat Creation (Reclamation District 1601)*
3. *Decker Island Project*
4. *Franks Tract Channel Islands*

Widespread Flooding

LEVEE SYSTEM INTEGRITY

PURPOSE

- Improving Bay-Delta levees will provide flood protection, ecosystem benefits and protect water supplies needed for the environment, agriculture and urban users by reducing the threat of levee failure and seawater intrusion while lessening levee failures, damage to property and requests for emergency funds

GOALS

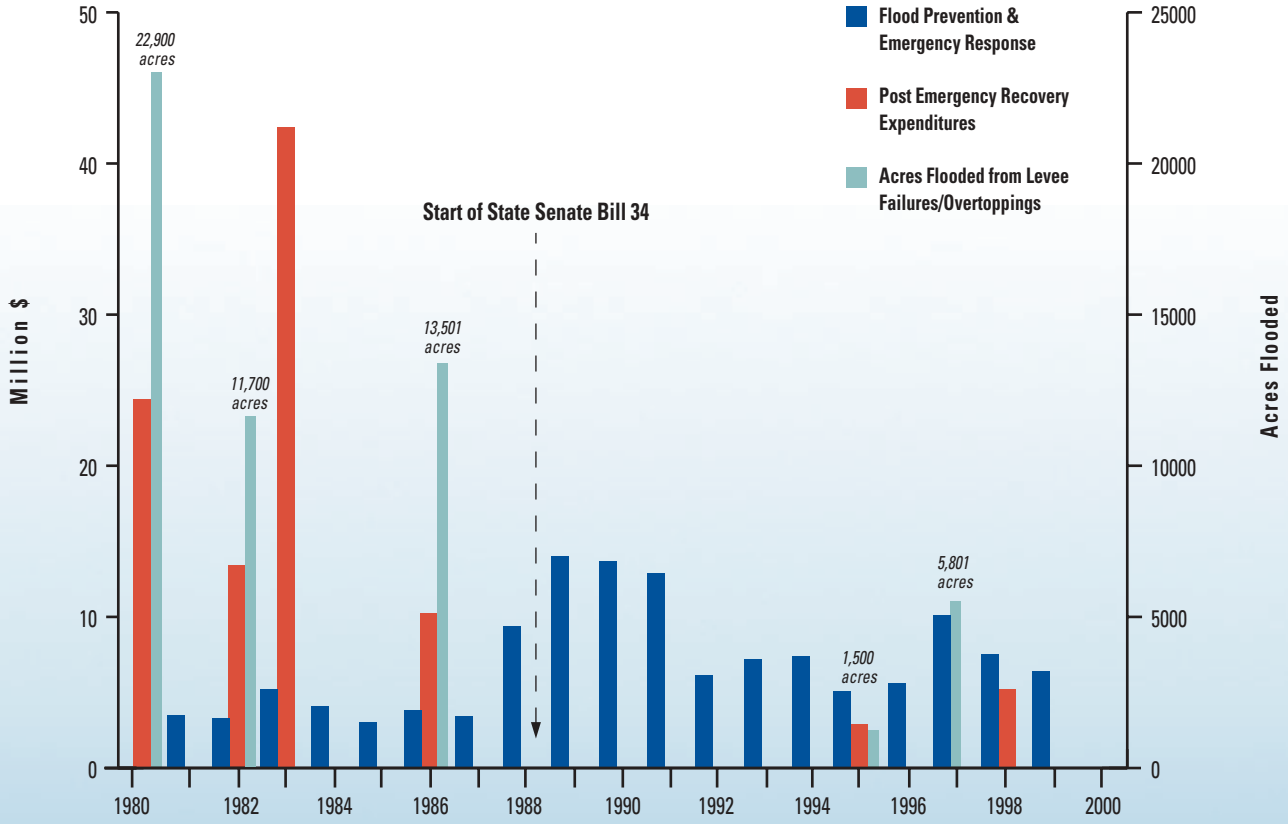
- Balance the need to improve levees to a higher standard for greater protection and fewer emergency responses, while maintaining habitat needs
- Develop adequate and reliable funding, as well as improve the permit process to increase levee stability in the Bay-Delta system

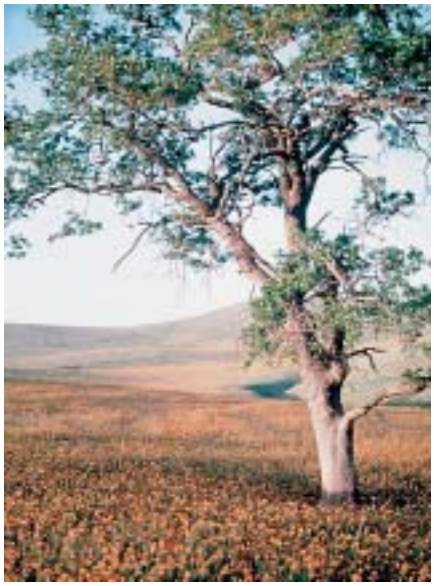
ACCOMPLISHMENTS

- Awarded more than $18 million in Year 1 to improve levees on 50 Delta islands while $14.6 million was invested in special projects like ecosystem and levee restoration for water quality and flood protection
- Efforts thus far to improve Delta levees have led to better water quality protection, enhanced habitat conditions, fewer requests for emergency funds and less acres of land flooded

DELTA LEVEE FLOOD COSTS

POST DISASTER ASSISTANCE COSTS AND ACRES FLOODED





SUMMARY OF PROGRESS AND BALANCE

As this year's report indicates, the CALFED Bay-Delta Program has made significant progress during its first year of implementation. State and federal CALFED agencies have secured and allocated more than $500 million in its first year, primarily from state bond funds. Key programs, such as ecosystem restoration, groundwater storage and recycling are meeting or exceeding their funding and program commitments. Milestones have been achieved in many key program areas, and tangible results of some projects already can be seen.

The following is a brief description of the status of each program element:

- **Storage**. Efforts to improve the use of groundwater storage are ahead of schedule, with $74 million provided to local agencies this year for planning and implementation of groundwater projects. The CALFED agencies signed agreements with local partners for Sites Reservoir and Los Vaqueros Expansion planning studies. Evaluation of a potential new off-stream storage reservoir at Sites and exploration of an In-Delta storage facility have missed some interim milestones, but increased funding in future years would allow planning studies for these projects to be completed on schedule. Studies of the expansion of Los Vaqueros Reservoir and Shasta Reservoir have also missed interim milestones due to lack of funding.
- **Conveyance**. Planning and design for installation of permanent fish barriers and other modifications in the Clifton Court Forebay are on track, and plans to increase periodic pumping are still on schedule. Although construction of the Tracy Fish Test Facility was delayed by six months due to the lack of funds, the project is back on course and expects to remain on schedule. However, the lack of funding has delayed a planned intertie between the State Water Project and the Central Valley Project near Tracy and the San Joaquin Flood Control Project.
- **Transfers**. The program is on track. Year 2 of implementation will focus on coordinating and streamlining the water transfer process and establishing the Water Transfer Information Clearinghouse.
- **Water Use Efficiency**. Efforts to define "appropriate measurement" of water usage, certify urban Best Management Practices and refine quantifiable objectives for water use efficiency are proceeding on schedule. More than $13 million in grants and loans was awarded for 65 projects in 2001, but participation in the loan program has been less than expected.
- **Ecosystem Restoration**. The program is on track, with over $150 million allocated in year 1 primarily from state and local funds as part of the "Single Blueprint" for ecosystem restoration and regulatory commitments. This is in addition to approximately $270 million of early implementation projects financed by the federal Bay-Delta Act and Category 3 funds in the prior years.
- **Environmental Water Account**. The EWA provided 287,000 acre-feet of water for environmental purposes during its first year of operation for Endangered Species Act purposes without reducing allocations to farmers and cities while meeting the commitments provided under the biological opinions (ESA) not to reduce water. The EWA expects to have Tier 3 water available for unforeseen emergencies in Year 2.

- **Watershed Management**. Progress has been made on outreach and technical assistance to local communities, with more than $18 million awarded this year to 54 grant recipients for watershed projects.
- **Drinking Water Quality**. Five early implementation projects—Bay Area Blending/Exchange, Veale-Byron Tract, Real-Time Water Quality Monitoring, Salinity/Selenium, and Delta Contaminant Sources/Load—are moving forward. About $20 million in grant funding is expected to be awarded for water quality projects in spring 2002.
- **Levees**. More than $18 million was awarded in Year 1 for levee maintenance on 50 Delta islands, while $14.6 million was invested in special projects for ecosystem, and levee restoration, water quality, flood protection and beneficial reuse and emergency response/preparedness. Although levee maintenance funding was available, the program is not funded at a level that allows progress toward Delta levee restoration. Efforts to improve all Delta levees to a base level of protection (Public Law 84-99 standard) are behind schedule, as are a planned Delta levee risk assessment and risk management plan, the Suisun Marsh levee program, and the dredge material reuse plan.
- **Science**. The Science Program conducted peer review for large projects and the EWA, conducted scientific workshops, provided oversight for the Delta Cross Channel investigations, and developed a framework for performance measures.
- **Program Oversight and Coordination**. This program element initially received adequate funding, but the state's hiring freeze and other general fund reductions will require the Program's oversight and coordination activities to be scaled back significantly. These activities include: regional coordination and implementation, environmental justice and other public outreach efforts, legal and litigation support, budget coordination and integration, finance planning and program tracking.

YEAR 1 CONCLUSION

In its first full year of implementation, the CALFED Bay-Delta Program moved forward aggressively to carry out the goals and objectives of the August 2000 Record of Decision. While many Program actions are just getting under way, significant progress has been made in every program area, but particularly those supported by state bond funds, including Groundwater Storage, Environmental Water Account, Ecosystem Restoration and Conveyance, and by federal Title XVI funds for water recycling. The Surface Storage, Levee, Water Quality, Science and Watershed Management Programs also made substantial progress at reduced funding levels.

YEAR 2 AND BEYOND

In year 2 (fiscal year 2001-'02), the Governor and the Legislature have contributed $508 million in funding for the Program, of which $62.6 million is from the state's general fund. Congress has approved $30 million in funding in the Energy and Water Development appropriations to support the goals of the Bay-Delta Program. Although the state and federal appropriations signal continued involvement and support in the effort, a larger amount of funding is required to meet the commitments across all program areas. Progress in Year 2 also will be impacted by a $20 million general fund reduction in the state CALFED budget and the moratorium on state hiring. These constraints on the ability to secure adequate staff and financial resources will translate into further delays in some program elements.

WE ALL DEPEND ON THE BAY-DELTA

The Bay-Delta provides drinking water for 22 million people. It supports California's trillion-dollar economy, including its $27 billion agricultural industry, and local homes and infrastructure. It is the largest estuary on the west coast—home to 750 plant and animal species—and it supports 80 percent of the state's commercial salmon fisheries.

DEFINING THE BAY-DELTA CONFLICT

California's Bay-Delta is an ecosystem in trouble:

- Straining under dual roles as critical habitat and water project crossroads, the Bay-Delta is in decline from decades of competing demands
- Today, it no longer functions as a healthy ecosystem or as a reliable source of water
- Several species—including Chinook salmon and steelhead trout—are in decline or endangered
- Water supplies are increasingly unreliable, jeopardizing the world's sixth-largest economy and 5 million acres of highly productive agricultural lands
- Water quality is degraded, making it difficult and expensive to meet drinking water standards

RESOLVING THE CONFLICT

The CALFED Bay-Delta Program is a cooperative effort involving more than 20 state and federal agencies. The Program will be implemented in stages over the next 30 years to solve California's environmental and water problems.

IMPLEMENTATION PRIORITIES INCLUDE:

- Apply independent scientific review and adaptive management to all major activities with accurate and frequent reports to the public
- Conduct early and continuous agency, stakeholder and public involvement
- Maintain a balanced and integrated Program
- Support local and regionally based strategies to achieve the Program's goals
- Develop performance standards and milestones for each program element
- Meet milestones and commitments in the Bay-Delta Plan

AN UNPRECEDENTED SCOPE AND VISION

- Strong commitment to independent scientific review, planning and tracking

- A coordinated approach by more than 20 state and federal agencies

- Eleven major program elements supporting multiple objectives

- Extensive public and local involvement in shaping each program element

- Funded projects in multiple watersheds encompassing more than 40,000 square miles—more than 70 percent of California's land

CALFED BAY-DELTA PROGRAM TIMELINE

December 1994
Bay-Delta Accord

November 1996
Prop 204 Funds Approved by Voters

March 2000
Prop 13 Funds Approved by Voters

June 2000
Framework Announced

July 2000
Year 1 Funding
State $516.4 million
Federal $56.2 million
Other $221.6 million

July 2000
Programmatic Environmental Document Finalized (EIS/EIR)

August 2000
Science Program Established

August 2000
Record of Decision Signed; CALFED Program Implementation Begins

July 2001
Year 2 Funding Begins
State $508.0 million
Federal $81.4 million
Other $262.8 million

November 2004
Major Decision and Review Points for Storage, Water Quality and Water Use Efficiency Elements

Completion of Stage 1 – First Seven Years
Foundation for Long Term Program Direction Completed

The CALFED Bay-Delta Program is a comprehensive collaborative effort that will take 30 years or more to complete.

Anderson Cottonwood Irrigation District Fsh Passage Improvement Project

SHAPING THE SOLUTION THROUGH PARTNERSHIPS

Extensive and sustained levels of public involvement have shaped every aspect of the CALFED Bay-Delta Program.

Partnerships with local communities and groups are being forged to combine resources, share knowledge and resolve problems at the local, regional and state level.

Merced River Restoration Project:

"You redesign the river, you restore it to a more naturally functioning (state), and hopefully you need less water to make the system work the way it's supposed to—everybody wins."
—Chris Robinson, General Partner Robinson Cattle Company

Potential Sites Reservoir Project:

"Local needs are going to be met first, you're going to have input as to how this is going to happen. We have a chance now to say what it is we want, what it is we need, and I think we darn well better get out and do that."
—Mary Wells, Farmer Sites, California

Upper Yuba River Studies Program:

"...In (Nevada) county, we have seized the opportunity that CALFED gave us. They've given us a lot of support and put a lot of money into the collaborative decision-making process in our own backyard."
—Elizabeth Martin, Nevada County Board of Supervisors Chairwoman

ACTIVITIES THAT SUPPORT PARTNERSHIPS

- Scoping Meetings
- Technical Workshops
- The Newly Formed Bay-Delta Public Advisory Committee and Related Work Group Meetings
- Media Events
- Annual Reports
- Newsletters
- Coordinating with Local Groups
- Environmental Justice
- Brochures
- Briefing Materials
- Comprehensive Web Site http://calfed.ca.gov
- Toll-free Public Information Telephone Line (800) 700-5752
- Presentations
- Technical Documents
- Tribal Participation
- Science Consortium

June 2001 Policy Group Meeting

Environmental Justice Workshop in Richmond

Delta Cross Channel News Coverage

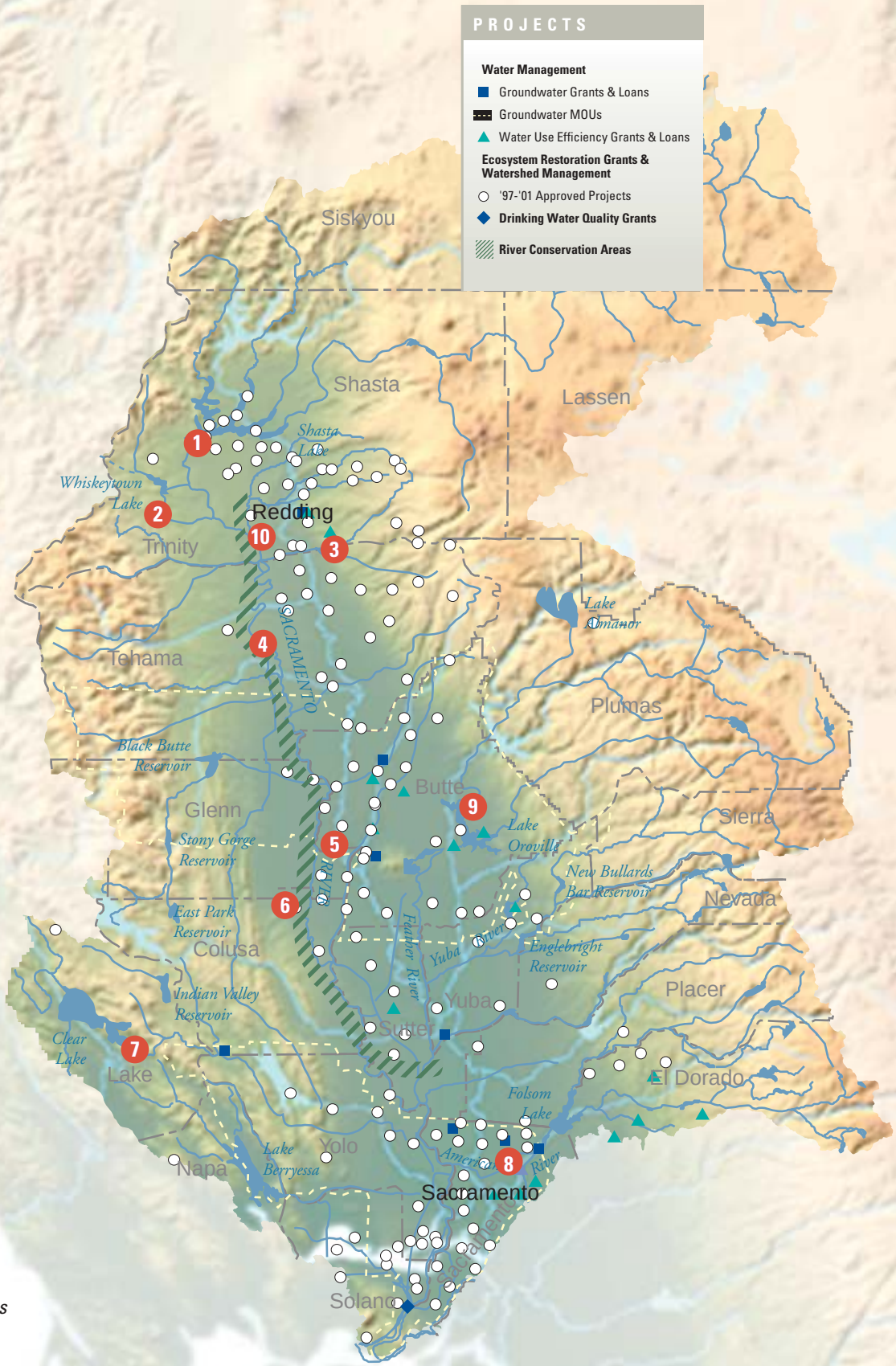
REGIONAL VIEW

The CALFED Agencies are investing in collaborative regional projects that provide local benefits while helping achieve overall Program objectives and commitments.

THE CALFED BAY-DELTA REGIONS

- The Sacramento Valley Region
- The Delta Region
- The Bay Region
- The San Joaquin Valley Region
- The Southern California Region

The Regional View provides information on regional CALFED Program highlights and accomplishments. Locally based projects have been funded through individual and collaborative resources by the CALFED agencies and stakeholders.



HIGHLIGHTS:

1. *Evaluate Enlargement of Shasta Dam*
2. *Saeltzer Dam Removal on Clear Creek*
3. *Battle Creek Fish Passage & Dam Removal*
4. *Improve Red Bluff Diversion Facilities*
5. *Sacramento River Conservation Area* (Continuous riparian corridor along 222 miles of the Sacramento River between Keswick and Verona)
6. *Sites Reservoir Memorandum of Understanding and Studies*
7. *Mercury Assessment—Clear Lake & Cache Creek*
8. *Lower American River Corridor Management Plan*
9. *Butte Creek Fish Passage and Dam Removal*
10. *Anderson-Cottonwood Irrigation District Fish Screens and Ladders*

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Participated in an agreement with local partners to study the 1.8 million acre-foot Sites Reservoir off-stream storage project
- Funded over 120 ecosystem restoration efforts to date, including 47 projects to improve fish passage on rivers and streams. A small dam that blocked salmon passage on Clear Creek was removed, and CALFED agencies provided more than $10 million for a state-of-the-art fish screen and ladder project for the Anderson-Cottonwood Irrigation District
- Dedicated more than $2 million for nine water use efficiency grants to help farmers irrigate more effectively and conserve water
- Signed agreements with six local water agencies to study groundwater storage improvements
- Funded over 10 groundwater loans and grants for recharge construction and storage pilot projects
- Worked with local stakeholders to determine feasibility of introducing Chinook salmon and Steelhead to the Upper Yuba River
- Began to assemble and interpret salmon data for individual tributaries and the Sacramento mainstem with the goal of relating trends in threatened groups to restoration actions

THE SACRAMENTO VALLEY REGION:

- Provides 60 percent, or 22 million acre-feet of the water flowing into the Delta
- Offers major habitat/spawning ground for several threatened and endangered fish species
- Contributes significantly to the state's farmlands and agricultural output

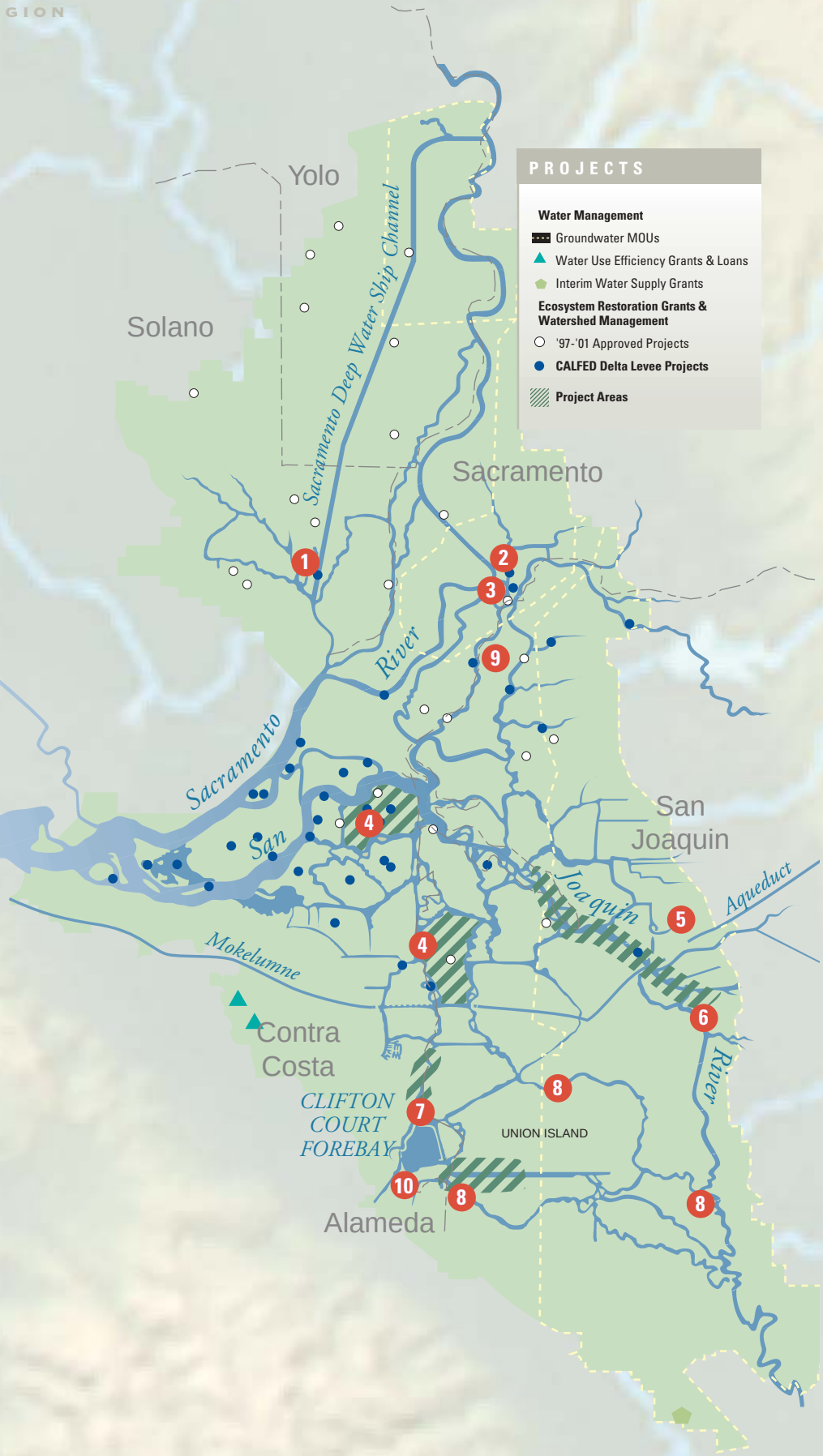
Red Bluff Diversion Dam

ACID Fish Screening and Ladders

YEAR 1 FUNDING
43 projects
$12,587,729.00

REGIONAL VIEW

THE DELTA REGION



HIGHLIGHTS:

1. *Yolo Bypass Habitat Restoration*
2. *McCormack Williamson Tract Habitat Restoration*
3. *Delta Cross Channel and Through Delta Facility Operational Studies*
4. *In Delta Storage (Potential) "Delta Wetlands Project"*
5. *Sub-Surface Drip Irrigation on Asparagus*
6. *Stockton Deep Water Dissolved Oxygen Investigation*
7. *Clifton Court Intake and Fish Screens*
8. *Fish & Flow Control Structures (Temporary / Permanent) & Dredging*
9. *Staten Island Restoration*
10. *Tracy Fish Test Facility*

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Invested $18 million to improve Delta levees on over 50 Delta islands resulting in better water-quality and flood protection and greatly enhanced habitat conditions
- Funded over 70 ecosystem restoration projects to date, including in-channel island restoration, fish screens, and riparian habitat restoration
- Funded seven watershed projects including flood protection, creek restoration strategies and stewardship
- Planned for construction of the Tracy Fish Test Facility to provide data on the effectiveness of screening facilities in the South Delta
- Worked on the South Delta Improvement Program to install permanent fish and flow control structures and modify Clifton Court Forebay to eventually increase periodic pumping to 10,300 cubic feet per second
- Began environmental documentation for North Delta Flood Protection improvements
- Explored options for addressing drainage problems in the Delta
- Continued work on the Delta Dredge and Reuse Strategy
- Continued work on developing practical ways to slow, stop, and reverse island subsidence
- Successfully implemented and reviewed an Environmental Water Account, designed to manage water operations so that they both improve water supply reliability and protect targeted fish species
- Initiated several studies:
  - Feasibility of a through-Delta diversion facility to the Sacramento River
  - Feasibility of alternatives for In-Delta storage
  - Operational studies to address fishery and water quality impacts
  - Approval to begin dissolved oxygen studies in the Stockton Deep Water Ship Channel
  - Sources and concentrations of contaminants in the Bay-Delta water
  - Evaluate factors influencing outcomes and impediments in restoring breached islands in the Delta
  - Identify mercury distributions and contamination patterns in the Delta

THE DELTA REGION:

- Up to 47 percent of the Delta's flow is diverted in dry years from the Delta for beneficial uses
- Supports 750 plant and animal species including 120 fish species
- Diversion point for irrigation water to California's $27 billion agricultural industry
- Contains the largest wetland habitat in the western United States

Delta Cross Channel

Tracy Fish Facility

YEAR 1 FUNDING
19 projects
5,916,272.00

REGIONAL VIEW

THE BAY REGION

HIGHLIGHTS:

1. Petaluma Marsh Expansion
2. Napa River Floodplain Restoration Project
3. Cullinan Ranch Project
4. Suisun Marsh Management and Restoration
5. Suisun Marsh Fish Screens
6. Los Vaqueros Expansion
7. Guadalupe River Restoration
8. San Pablo Baylands
9. Bay Area Blending/Exchange

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Completed a Memorandum of Understanding with local partners and initiated studies to evaluate the expansion of Los Vaqueros Reservoir
- Began studies on the feasibility of a San Luis Reservoir bypass to improve the quality of water imported to the Bay Area from the state and federal water projects
- Signed a Memorandum of Understanding and started feasibility studies for the Bay Area Blending and Exchange Study aimed at improving water quality by blending and exchanging source waters among local providers
- Hosted the first CALFED Bay-Delta Program Science Conference to engage the scientific community and the public. Co-sponsored and participated in the October 2001 State of the Estuary Conference
- Contributed to funding 40 ecosystem restoration projects to date, including Napa River floodplain restoration, fish screens in Suisun Marsh and improvements to the Petaluma Marsh
- Allocated nearly $2.5 million to provide rebates to Bay Area households that install ultra low-flow toilets
- Funded over five groundwater loans and grants for recharge construction and storage pilot projects
- Reviewed and supported plans for establishing a coordinated wetlands monitoring program in the Delta
- Reviewed and recommended future directions for the Bay Program of the Interagency Ecological Program, a premier aquatic monitoring program in the Bay
- Reviewed and began revision and multi-agency coordination of water quality monitoring conducted by the Interagency Ecological Program
- U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, Department of Fish and Game, Department of Water Resources and Suisun Resource Conservation District established a charter to begin work on a single blueprint for ecosystem restoration of Suisun Marsh

THE BAY REGION:

- The Bay and Delta form the west coast's largest estuary
- Drains more than 40 percent of the state's water
- Is America's fourth largest metropolitan area and location of Silicon Valley

Suisun Marsh

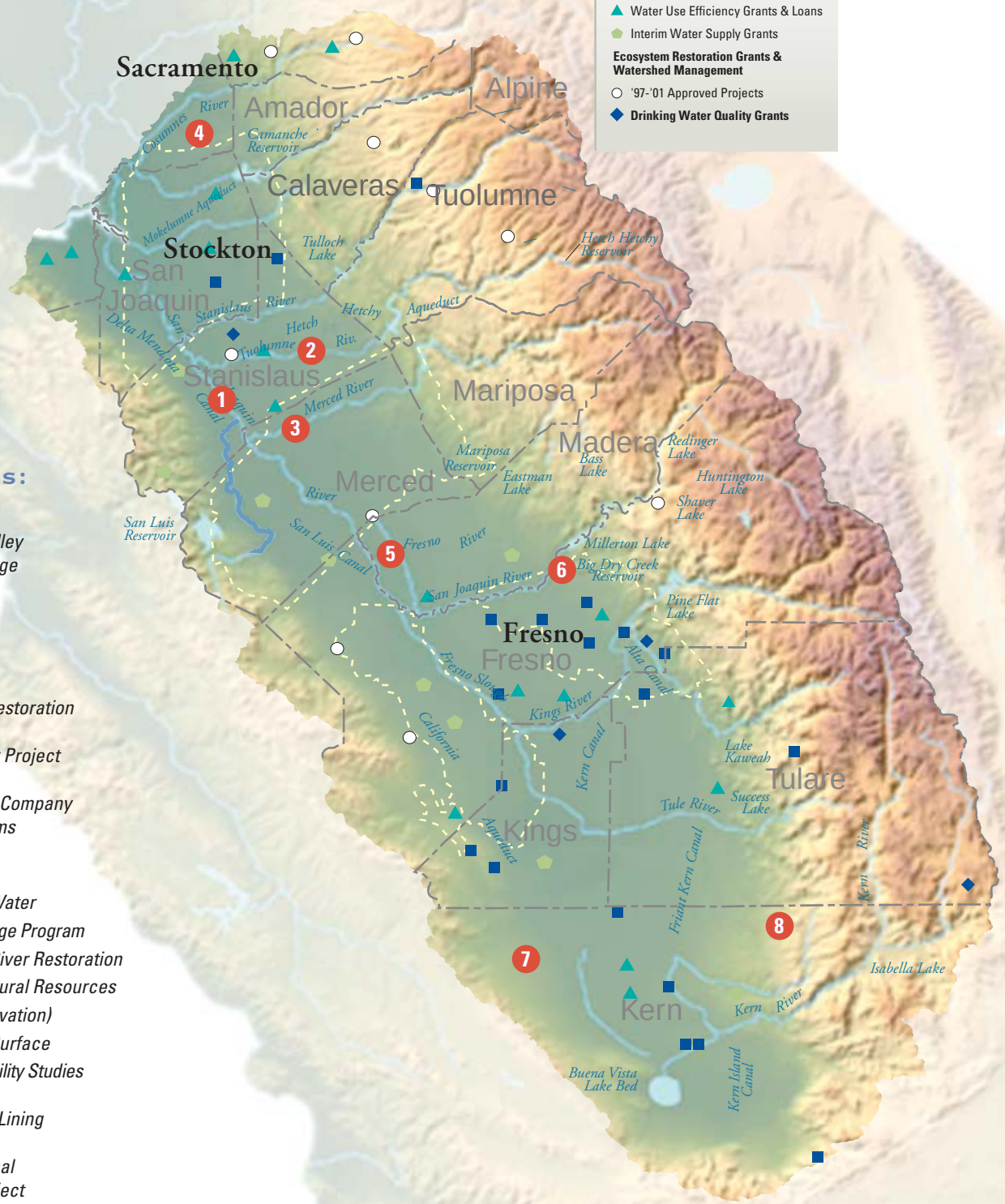
Los Vaqueros Reservoir

Recharge Pond

YEAR 1 FUNDING
17 projects
$5,916,354.00

REGIONAL VIEW

THE SAN JOAQUIN VALLEY REGION



HIGHLIGHTS:

1. San Joaquin Valley Regional Drainage Management
2. Tuolumne River Restoration
3. Merced River Restoration
4. Cosumnes River Project
5. Columbia Canal Company Irrigation Systems Improvement
6. • Friant-MWD Water Quality Exchange Program
   • San Joaquin River Restoration (Friant and Natural Resources District Conservation)
   • San Joaquin Surface Storage Feasibility Studies
7. Lost Hills Canal Lining
8. Kern-Tulare Canal Automation Project

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Funded 51 ecosystem restoration projects, including improving riparian and stream habitats on the San Joaquin, Merced, Tuolumne and Stanislaus rivers
- Approved $3.4 million in funding for 11 water use efficiency projects to help farmers save water
- Began feasibility studies for the lower San Joaquin River flood protection improvements
- Launched the Salinity and Selenium Project to build a pilot plant to treat agricultural drainage and produce water for reuse
- Signed agreements with four local water agencies to study groundwater-storage improvements
- Explored water quality exchange partnership between Friant Water Users Association and Metropolitan Water District
- Funded over 10 groundwater loans and grants for recharge construction and storage pilot projects
- Began evaluation of selenium effects from San Joaquin River discharges to the Delta
- Implemented state and federal dry year programs to provide over 200,000 acre-feet to water short areas

THE SAN JOAQUIN VALLEY:

- Produces 45 percent of the nation's fruits and vegetables
- Is the drainage for seven major Sierra Nevada rivers draining into it
- Anticipates population to double over the next 20 years

Water Use Efficiency for Irrigation

Merced River Restoration

Agriculture Production

YEAR 1 FUNDING
39 projects
$24,423,489.00

REGIONAL VIEW

THE SOUTHERN CALIFORNIA REGION

PROJECTS

Water Management

- Groundwater Grants & Loans
- Groundwater MOUs
- Water Use Efficiency Grants & Loans
- Interim Water Supply Grants

Watershed Management

- Approved Projects

HIGHLIGHTS:

1. *Water Conservation Recycling and Groundwater Desalination in San Diego*

2. *Conservation Rebate Programs*
   - *Commerical*
   - *Industrial*
   - *Institutional*

3. *Landscape Water Consumption Controller*

4. *Chino Basin Water Use Efficiency*

5. *Storm Water Augmentation Study*

6. *Wetland Restoration on the Santa Ana River*

7. *Desalination Research and Innovation Partnership (DRIP)*

8. *Water Quality Exchange Partnership with Friant Water District (MWD/Friant)*

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Signed agreements with five local water agencies to study ways to improve groundwater storage
- Provided nearly $1.9 million for 14 water use efficiency programs in urban areas
- Began a desalination research and innovation partnership at Metropolitan Water District resulting in three desalting facilities and final design plans for three more
- Funded over 20 groundwater loans and grants for recharge construction and storage pilot projects
- Funded restoration of wetlands and river systems to protect endangered and threatened fish in Southern California, reducing the demand for water from the Bay-Delta ecosystem
- Implemented state and federal dry year programs to provide approximately 80,000 acre-feet to water short areas

BENEFITS FLOW SOUTH AND NORTH

Implementation of CALFED's projects in the Southern California Region will:

- Produce more reliable, higher-quality water statewide
- Reduce the need for additional water from the Bay-Delta to meet the growing needs of the region
- Enhance ecosystem restoration in the Bay-Delta and in the region
- Expand groundwater storage and pumping capability
- Use water efficiently through conservation, recycling and water management

SOUTHERN CALIFORNIA REGION:

- Inland Southern California is among the fastest growing regions in North America
- Southland water users conserve 480,000 acre-feet of water a year and produce 230,000 acre-feet of recycled water—reducing the demand for additional Bay-Delta water and meeting the needs of a growing population
- Southern California's large contribution to the state's economy depends on a more reliable water supply, some of which is imported from the Delta

High Efficiency Clothes Washer Program

Santa Ana River in Riverside,
Arundo and Wetlands Improvement

YEAR 1 FUNDING
36 projects
$20,973,705.00

A BALANCED APPROACH

Launched in the summer of 2000 with broad public support, the CALFED Bay-Delta Program Record of Decision is a balanced, comprehensive approach to reduce conflicts over limited water supplies and to address California's long-term water needs.

The Bay-Delta Program is unique in its approach to solving California's environmental and water problems. The Bay-Delta solutions address four interrelated, interdependent program areas concurrently.

RESOURCE MANAGEMENT GOALS

Four resource management goals are implemented through 11 major program elements.

PROGRAM ELEMENTS

- Science
- Water Management
- Storage
- Conveyance
- Water Use Efficiency
- Water Transfers
- Ecosystem Restoration
- Environmental Water Account
- Watershed Management
- Drinking Water Quality
- Levee System Integrity

Fish are Dyed for Delta Cross Channel Studies

CALFED SCIENCE PROGRAM

Integrating world-class science and peer review into every aspect of the Bay-Delta Program, CALFED is developing the best scientific information possible to guide decisions and evaluate actions that are critical to its success.

GOALS

- To establish a body of knowledge that is unbiased, relevant, authoritative and integrated, while communicating that knowledge to the scientific community, agency managers, stakeholders and the public
- Establish protocols and incorporate independent peer review into all Program activities
- Develop science-based performance measures for each CALFED program

ACCOMPLISHMENTS

- Developed directed research processes to identify and provide independent peer review of CALFED research needs
- Developed plans for each program element in order to incorporate peer review into activities
- Initiated and compiled performance measures within and across individual programs
- Hosted the first CALFED Science Conference to engage the scientific community and the public and co-sponsored and participated in the October '01 State of the Estuary Conference
- Funded The Estuary Newsletter's publication of a Delta Cross Channel fact sheet
- Convened expert panel and conducted first annual review for the Environmental Water Account, as well as several scientific workshops and program reviews
- Supported and integrated the activities of the independent ecosystem science board, interagency ecological program, EWA science advisors and other independent peer review efforts
- Completed or solicited for several monitoring plans to identify existing needs
- Began applying adaptive management within the program
- Published two reviews of ecosystem restoration indicators
- Led the effort to develop an interagency Science Consortium to support common efforts to investigate and share information
- Continued operational studies to address fishery and water quality impacts of Delta Cross Channel (DCC)

Turlock Irrigation District Project Event

State of the Estuary Conference
Posterboard Session

PRIORITIES

- The Science Program's priorities include:
  - Conduct adaptive management experiments
  - Build population models for at-risk species
  - Establish integrated science programs in complicated field settings
  - Compare relative effectiveness of different restoration strategies
  - Understand intertwined implications of all CALFED actions
  - Advance the scientific basis of regulatory activities
  - Develop performance measures
  - Coordinate and extend existing monitoring
  - Increase relevant scientific analyses of existing data

Delta Cross Channel Studies

PROGRAM REVIEWS AND WORKSHOPS

The different goals of science must move forward together, integrated across the other program elements that spread across five regions with different needs.

ADAPTIVE MANAGEMENT

Interdisciplinary Knowledge of Critical Unknowns	Integrating Scientific Knowledge into Management	Monitoring	Broad Communication of Science Knowledge and Scientific Activities
PROGRAM REVIEWS ■ Mercury Program Review ■ Stockton Ship Channel Program Review ■ Delta Cross Channel Program Review ■ Upper Yuba Program ■ Environmental Water Account Annual Review	**WORKSHOPS** ■ Sacramento Splittail: Life History ■ EWA and Salmon ■ Common Data Management Strategy ■ Hydrodynamics and Salinity Response to Levee Breaches in Suisun Marsh ■ Large Scale Adaptive Management ■ EWA and Delta Smelt ■ Adaptive Management Concepts (ISB) ■ State of Estuary Conference ■ Instream Flow Modeling/Biological Links (Bay-Delta Modeling Forum)	**DEVELOP MONITORING PLAN** ■ Wetlands ■ Reviews of Ecosystem Restoration ■ Indicators ■ Aquatic Monitoring Plan ■ Terrestrial Amphibian Monitoring Plan ■ Performance Measure Protocol	**INVITED PRESENTATIONS** ■ State Water Association ■ Environmental Water Caucus ■ Bay Conservation and Development Commission ■ Department of Water Resources Environmental Specialists Conference ■ Technical Committee for Dredge Re-use ■ Educational Workshops on Watershed Restoration and on Monitoring ■ American Association for Advancement of Science: Organized "Science and Water Management in California" ■ California Division of the American Fisheries Society ■ Managing Rivers for Biodiversity ■ Annual IEP Workshop ■ State of Estuary Conference

Water Flow Measurements

WATER MANAGEMENT

Recognizing that no single strategy will resolve California's water and environmental problems, the CALFED Program encompasses an array of projects and approaches to expand water supplies and ensure efficient use of the resource.

Working with local and regional agencies, the Program has identified actions that could increase California water supplies by nearly 3 million acre-feet over the next 10 years—enough water to meet the needs of 6 million families annually.

GOALS

- Maximize use of available water supplies through conservation, water recycling and water quality improvements
- Increase the operational flexibility of water systems at the state, federal and local level through strategic improvements in conveyance and storage capacities
- Develop groundwater and surface water storage projects to boost flexibility and provide additional supplies for agricultural, urban and environmental use

ACCOMPLISHMENTS

- Allocated approximately $200 million from Proposition 13 and other sources to local agencies for water supply, water quality and water use efficiency projects throughout the state
- Initiated or continued planning studies of 5 surface storage projects: Shasta enlargement; Sites Reservoir; In-Delta Storage; Los Vaqueros Expansion and Upper San Joaquin Storage. Completed Memoranda of Understanding with local partners for Sites Reservoir and Los Vaqueros Expansion planning studies
- Completed 16 Memoranda of Understanding or Letters of Intent with 30 local agencies throughout the state to study groundwater storage improvements
- Supported the Governor's Advisory Drought Planning Panel in developing a *Critical Water Shortage Contingency Plan*. Implemented state and federal dry year programs that provided nearly 300,000 acre-feet to areas suffering from water shortages
- Developed and implemented a comprehensive operations plan to coordinate actions and improve water supply reliability

Shasta Lake and Dam

PUBLIC AND PEER REVIEW

- Overview in progress by stakeholders and review through the state's drought contingency plan and the Water Management Strategy Evaluation Framework

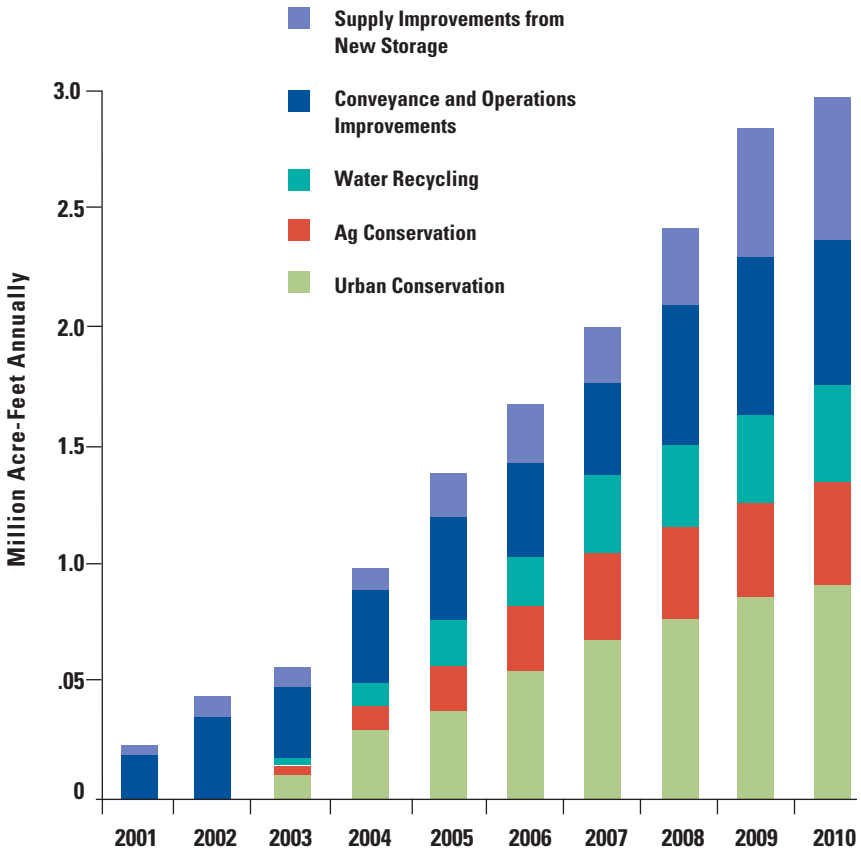
PERFORMANCE MEASURES

- Performance is tracked by overall increases in yield and the flexibility of California's water system through the four primary elements that contribute to the strategy: **storage**, **conveyance**, **water use efficiency**, and **water transfers.**

Water Reclamation

Urban Conservation

POTENTIAL IMPROVEMENTS IN WATER SUPPLY RELIABILITY



POTENTIAL IMPROVEMENTS IN WATER SUPPLY RELIABILITY

WATER MANAGEMENT ACTION

Water Use Efficiency (first 7 years)	**Acre-Feet/year**
Urban Conservation	520,000 to 690,000
Agricultural Conservation	260,000 to 350,000
Water Reclamation	255,000 to 310,000
Potential Increase from Water Use Efficiency	**Up to 1.4 Million Acre-Feet/year**
Conveyance and Operational Improvements	**Up to 600,000 Acre-Feet/year**
Includes: SWP Pumping of (b)(2) Upstream Releases, Export/Inflow Ratio Flexibility, Increased Banks Pumping Plant Capability, Joint Point of Diversion and San Luis Bypass	
Potential Increase from New Storage	**600,000 to 900,000 Acre-Feet/year***
Total Potential Increase in Water Supply Reliability from Water Use Efficiency, Conveyance and Operations Improvements and New Storage	**Up to 2.9 Million Acre-Feet/year**

POTENTIAL NEW STORAGE CAPACITY*

CALFED Storage Projects	**Acre-Feet**
Enlarge Shasta Lake	300,000
Enlarge Los Vaqueros Reservoir	400,000
In-Delta Storage	250,000
Sites Reservoir	1,800,000
Upper San Joaquin River Storage	250,000 to 700,000
Groundwater Storage and Conjuctive Use	500,000 to 1,000,000
Total Potential New Storage	**4.5 Million Acre-Feet**

Storage Capacity versus Water Supply Reliability

Total increase in storage capacity is not a direct measure of increased water supply reliability. The estimate of increased water supply reliability provided here is the quantity of water expected to be available annually from new storage during extended dry periods.

New storage capacity would also be used to provide improved flows and reduced effects of diversions for fish, improved water quality, and improved conjunctive management of surface and groundwater.

San Luis Reservoir

STORAGE

By pursuing more water storage capacity in both surface reservoirs and underground aquifers, CALFED seeks not only to meet the needs of California's growing population, but also to provide much-needed flexibility to improve water quality and restore ecosystems.

GOALS

- Provide financial and technical assistance to implement 1/2 million to one million acre-feet of new, locally managed groundwater storage
- Pursue specific opportunities for new off-stream storage sites and expansion of existing on-stream storage sites as identified in the Record of Decision

ACCOMPLISHMENTS

- Continued the Integrated Storage Investigations (ISI) to coordinate studies and evaluate the costs and benefits of specific storage projects in terms of water quality, water supply reliability and ecosystem restoration
- Completed an agreement with local partners to study the Sites Reservoir off-stream surface storage project and Los Vaqueros Reservoir expansion
- Continued study of Shasta Reservoir expansion
- Initiated feasibility study of alternatives for In-Delta storage
- Completed 16 Memoranda of Understanding or Letters of Intent with 30 local agencies throughout the state to study groundwater storage improvements
- Provided grants and loans to local agencies totaling $74 million to assist in planning and implementing groundwater projects. The projects will improve statewide operational flexibility and increase water supply reliability

PUBLIC AND PEER REVIEW

- Proposition 13 Groundwater Conjunctive Management Advisory Teams
- Public workshops, partnerships and stakeholder meetings

PERFORMANCE MEASURES

- Storage is part of the larger Water Management Strategy, and will increase the availability of water and improve the flexibility of the system. Performance measures for this program element may include new storage capacity implemented, changes in groundwater levels and groundwater overdraft status.

O'Neill Forebay

NEXT STEPS

- Develop North of the Delta feasibility analysis, project formulation and environmental documentation
- Determine how to pursue In-Delta storage options based on feasibility study results
- Begin Alternatives report for Los Vaqueros Expansion
- Undertake Enlargement feasibility study for Shasta Lake
- Negotiate Memorandum of Understanding and initiate planning study for Upper San Joaquin Storage
- Award $106 million under Proposition 13 and AB 303 for feasibility studies and pilot projects for Conjunctive Water Management
- Develop and implement projects for fish passage improvement

CALFED BAY-DELTA PROGRAM STORAGE SCHEDULE

Note: Schedules subject to change

POTENTIAL STORAGE OPTIONS

Storage is part of the larger water management strategy, and will increase the availability of water and improve the flexibility of the system.

POTENTIAL STORAGE PROJECTS

Shasta Enlargement
An increase in Shasta storage capacity by 300,000 acre-feet would increase the pool of cold water available to maintain lower Sacramento River temperatures for fish and improve water supply.

Sites Reservoir
This project, with a capacity of up to 1.9 million acre-feet, could enhance water management flexibility in the Sacramento Valley and provide storage and operational benefits for other CALFED programs including fisheries protection, Delta water quality, and the Environmental Water Account.

In Delta Storage
An In-Delta Storage facility of 250,000 acre-feet would provide both fishery benefits and enhanced water project flexibility.

Los Vaqueros Enlargement
Expanding Los Vaqueros reservoir from 100,000 acre-feet to 500,000 acre-feet would provide water quality and water supply reliability benefits to Bay Area water users. Storage in this location could also be integrated into the Environmental Water Account.

San Joaquin Storage
Additional storage between 250-700 thousand acre-feet in the upper San Joaquin River watershed would be designed to contribute to restoration of and improve water quality for the San Joaquin River and facilitate conjunctive water management and water exchanges that improve the quality of water.

Clifton Court Forebay

CONVEYANCE

Moving water through the Bay-Delta as efficiently as possible will increase the system's flexibility and boost ecosystem health, water quality and levee stability.

GOALS

- Modify the existing conveyance system for water supply, water quality, flood protection and ecosystem benefits
- Improve pumping operations of the State Water Project to increase reliability and enhance fish protection

ACCOMPLISHMENTS

- Maintain schedule for construction of the Tracy Fish Test Facility (TFTF) to provide data on the effectiveness of screening facilities in the South Delta
- Study plan for through-Delta diversion facility for Sacramento River
- Continue work on the South Delta Improvement Program (SDIP) to install permanent fish and flow control structures, and modify Clifton Court Forebay to eventually increase periodic pumping to 10,300 cubic feet per second
- Begin environmental documentation for North Delta Flood and Ecosystem Restoration Control improvements
- Begin feasibility studies for lower San Joaquin River flood protection improvement study
- Continue ongoing work on temporary barriers

PUBLIC AND PEER REVIEW

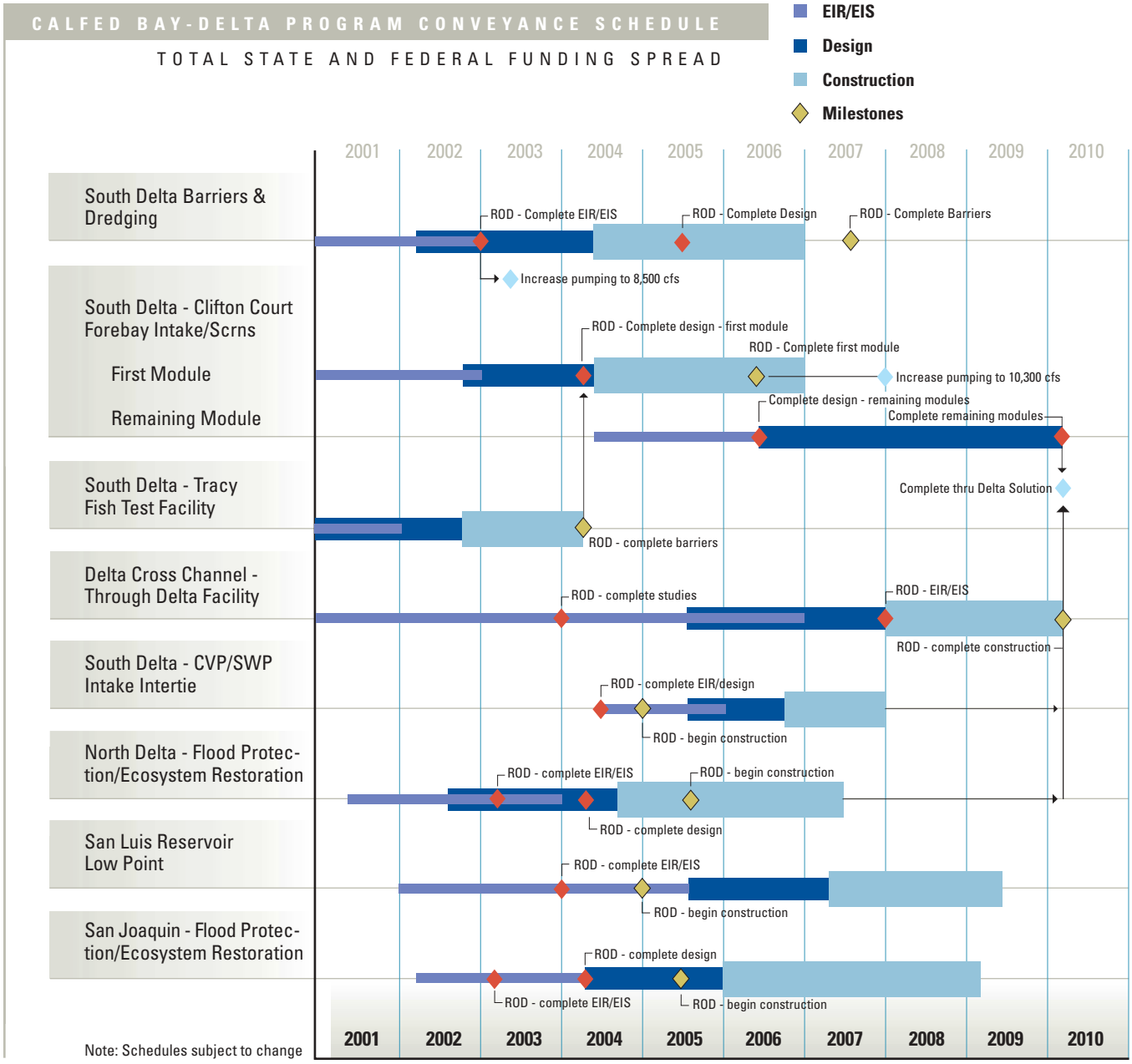
- Program review by North and South Delta Improvements Teams and North Delta Agency Team
- Monitoring by North Delta Stakeholders Group and Mokelumne-Cosumnes Watershed Alliance
- Regular reporting of progress on conveyance improvements at Delta Protection Commission Public Meetings

PERFORMANCE MEASURES

- Performance measures for the conveyance program may include overall survival rates for fish entering the Tracy Fish Test Facility. Increased survival rates mean fewer fish are being lost as a result of water project pumping. Other performance measures may be drinking water quality, flood protection, and ecosystem values.

NEXT STEPS

- Continue work on draft EIR/S and permit for South Delta
- Start construction at TFTF
- Begin testing and research for Through-Delta facility (TDF) ladders
- Continue second year studies at Delta Cross Channel and TDF
- Continue draft EIR/S for North Delta Flood Protection and Ecosystem Restoration
- Develop work plan and funding on Lower San Joaquin flood protection
- Begin scoping for San Luis Low Point Project
- Initiate study of CVP/SWP Intertie



WATER USE EFFICIENCY

Through a competitive process that will fast-track water conservation and recycling projects, the CALFED Bay-Delta Program aims to generate significant water supply, water quality and ecosystem benefits in the short term.

GOALS

- Reduce water demand through "real water" conservation
- Improve water quality by altering volume, concentration, timing and location of return flows
- Improve ecosystem health by increasing in-stream flows where necessary to achieve targeted benefits

ACCOMPLISHMENTS

- Awarded $13.3 million in water conservation grants and loans for 65 projects in 2001—including 37 urban and 28 agricultural projects. These projects were geographically diverse and were matched with over $9.1 million in local funding
  - Urban projects range from a voucher incentive program for clothes washers to more efficient landscape water programs
  - Agricultural projects range from canal lining to buried drip irrigation
  - Funded projects will collectively save 30,000 acre-feet of water, improve water quality, and save energy
- Awarded two water recycling grants
- Established 60 out of 200 quantifiable objectives for agricultural water use efficiency actions (on track to develop 30 more by 2003)
- Convened Independent Review Panel to assist in developing a definition of appropriate water measurement
- Successfully negotiated cooperative agreement with the Agricultural Water Management Council, U.S. Bureau of Reclamation and California Department of Water Resources to support locally cost-effective agricultural water conservation
- Laid groundwork for establishing a Water Use Efficiency Public Advisory Committee, approach to WUE monitoring and Urban BMP Certification
- Developed draft agricultural WUE milestones as part of overall assurances framework
- Forged an effective water use efficiency team with key CALFED agencies

PUBLIC AND PEER REVIEW

- Independent Review Panel for Agricultural Measurement
- Agricultural Measurement Ad-hoc Group
- Urban Certification Ad-hoc Group

PERFORMANCE MEASURES

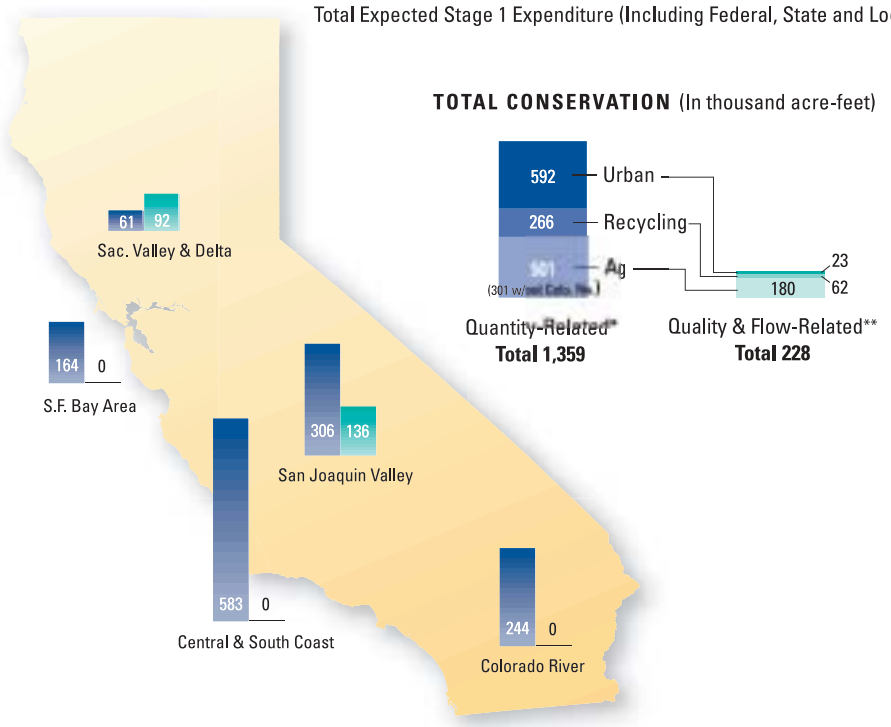
- Credible WUE performance data will be crucial to future discussions of overall program linkage and balance. WUE performance indicators will range from simple administrative measures to relatively complex measures of the outcome of WUE projects. These are expected to include the evaluation of progress toward meeting agricultural quantifiable objectives and similar measures for urban WUE such as changes in per capita water use, volume of in-stream flows and in-stream water quality.

NEXT STEPS

- Develop 2002 WUE Proposal Solicitation (grant) Process
- Seek advice from Water Use Efficiency Public Advisory Committee to better define WUE priorities, grant criteria, approaches to research and technical assistance and assurances processes (including ag milestones and urban BMP Certification)
- Work with Science Program to continue development of effective approaches to WUE monitoring, adaptive management, peer review and performance indicators (see figure)
- Refine quantifiable objectives
- Continue refining WUE implementation approach, including:
  - Finalize Agricultural WUE milestones through broad stakeholder involvement
  - Complete work of Independent Review Panel on appropriate measurement
  - Continue progress on Urban BMP Certification

EXPECTED STAGE 1 (2000–2007) WATER CONSERVATION BY TYPE AND REGION

Total Expected Stage 1 Expenditure (Including Federal, State and Local funds): **$2.96 billion**



*Quantity-Related Conservation is accomplished by reducing flows to salt-sinks or to evaporation.

**Quality & Flow Related Conservation is accomplished by rerouting flows to improve water quality and in-stream flows.

WATER TRANSFERS

Through development of an effective water transfer market, the CALFED Program aims to stretch existing water supplies by promoting transfers from willing sellers to buyers while protecting other water users, local economies and the environment.

GOALS

- Develop a more effective water transfer market
- Protect water rights, the environment and local economic interests
- Streamline the approval process of state and federal agencies for water transfers

ACCOMPLISHMENTS

- Supported the Governor's Advisory Drought Planning Panel in developing a Critical Water Shortage Contingency Plan. Implemented state and federal dry year programs that provided nearly 300,000 acre-feet to areas suffering from water shortages
- Developed "ON TAP" web site, an on-line water market information resource for water transfers
- Convened a stakeholder panel and drafted recommendations to streamline the transfer process
- Initiated technical review of "carriage water" requirements governing the transfer of water through the Bay-Delta
- Working to define transferable water and carriage water requirements

PUBLIC AND PEER REVIEW

- Monitor web site with Water Transfer Information Clearinghouse
- Review by CALFED agencies and State Water Resources Control Board Water Transfer Work Group

PERFORMANCE MEASURES

- Performance measures may include: number of proposed water transfers; ratio between water transfers proposed and approved; volume of water being transferred; reduced time needed to approve proposed transfers; and total regional water supply.

http://ontap.ca.gov

NEXT STEPS

- Establish fair and equitable "wheeling" terms
- Establish shared place-of-use between Central Valley Project & State Water Project
- Encourage coordination of multiple transfer within single approval processes
- Identify standard mitigation measures suitable for addressing socio-economic and cumulative impacts.
- Continue refinements and improvement to "ON TAP" web site
- Establish Water Transfer Clearinghouse

ECOSYSTEM RESTORATION PROGRAM

Ecosystem restoration actions help restore and improve the health of the Bay-Delta system for all native species while reducing its water management constraints.

GOALS

- Recover 19 at-risk native species and contribute to the recovery of 25 additional species
- Rehabilitate natural processes related to hydrology, stream channels, sediment, floodplains and ecosystem water quality
- Maintain and enhance fish populations critical to commercial, sport and recreational fisheries
- Protect and restore functional habitats, including aquatic, upland and riparian, to allow species to thrive
- Reduce the negative impacts of invasive species and prevent additional introductions that compete with and destroy native species
- Improve and maintain water and sediment quality to better support ecosystem health and allow species to flourish

ACCOMPLISHMENTS

- Established a "single blueprint" or framework for coordinating resource management, conservation and regulatory actions between state and federal agencies
- Since 1995, CALFED agencies and stakeholders have funded 326 ecosystem projects for $336 million including projects funded through the Anadromous Fish Restoration Program of the CVPIA. In 2001, $195 million was spent on activities including ecosystem water quality, ecosystem science, strategy planning, and 74 individual ecosystem restoration projects selected through a public solicitation process. Specific highlights include:
  - Began fish passage improvements along 182 river miles of three streams (Battle, Butte and Clear creeks) and three rivers (Cosumnes, Guadalupe and Mokelumne)
  - Installed 64 fish screens to protect fish at diversion points throughout the Bay-Delta system
  - Conducted 23 studies at $26.5 million on the effects of dissolved oxygen, mercury, pesticides, selenium and dissolved organic carbon on the Bay-Delta system
- Launched the Environmental Water Program with steering committee
- Continued to develop scopes of work for the Upper Yuba River Studies Program
- Facilitated approval of dissolved oxygen studies in the Stockton Deep Water Ship Channel in conjunction with the science program
- Began revised Ecosystem Restoration Implementation Plan for the Delta
- Developed Draft Stage 1 Implementation Plan for the Ecosystem Restoration Program

Butte Creek

PUBLIC AND PEER REVIEW

- Agency Stakeholder Ecosystem Team provides technical oversight
- Stakeholder and public oversight achieved through Ecosystem Roundtable
- Independent Ecosystem Science Board comprised of 12 independent scientists monitors scientific integrity of program
- Coordination and integration with other CALFED programs and agencies

PERFORMANCE MEASURES

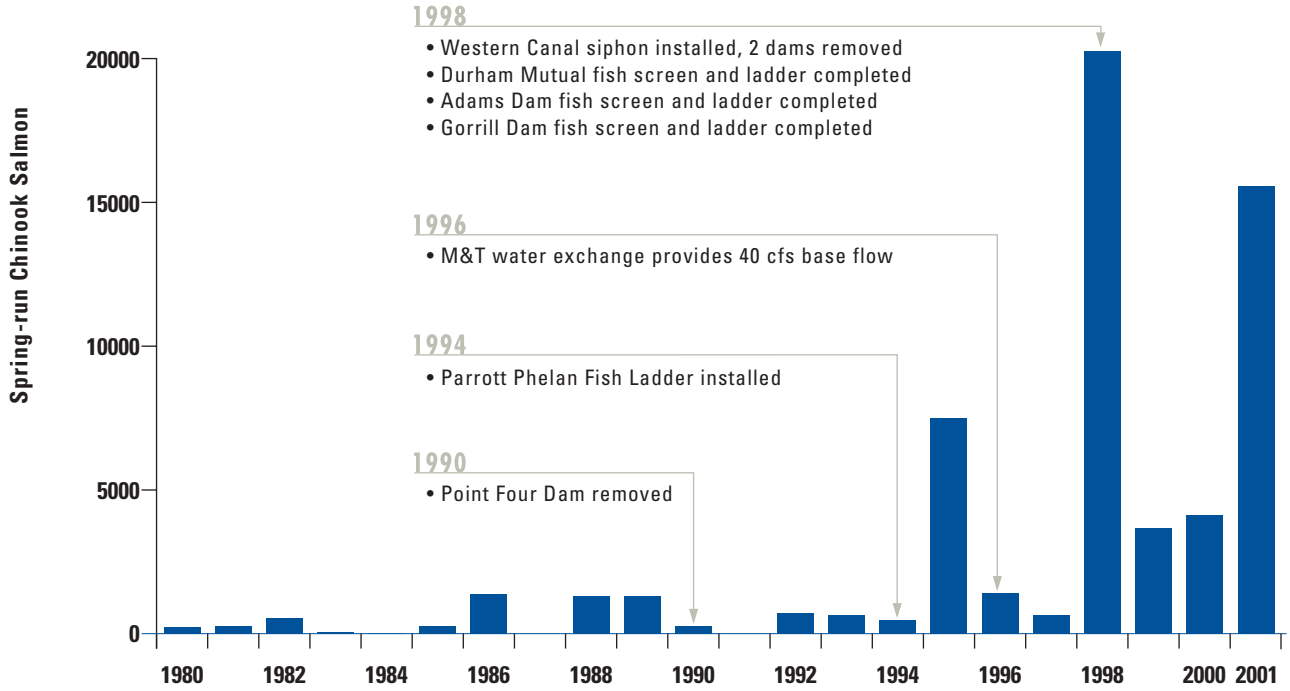
- Performance measures for the Ecosystem Restoration Program are being developed and include: number of funded restoration projects to benefit at-risk fish species; number of restoration projects funded; acres of enhanced or protected habitat leading to improved ecological processes; population trends for listed fish species dependent on the Delta, and percentage of the volume of diverted water screened.

NEXT STEPS

- Continue strategic planning and program management
- Continue project implementation
- Integrate science and initiate special studies

BUTTE CREEK PROGRESS

This graphic shows an increase in Spring-run Chinook salmon population trends on the Butte Creek that correlate with ecosystem restoration activities.



Delta Cross Channel Studies

ENVIRONMENTAL WATER ACCOUNT

Providing water at critical times is key to meeting ecosystem needs. Through its Environmental Water Account, CALFED is obtaining water and the flexibility to benefit the environment and minimize water supply impacts on cities, farms and businesses.

GOALS

- Reduce conflicts between environmental needs and water project operations by providing water and flexibility
- Better protection for fish and habitats at critical times by providing water in a flexible manner other than through strict requirements
- Increase water supply reliability by allowing projects to meet environmental and water supply needs at the same time

ACCOMPLISHMENTS

- Provided 287,000 acre-feet for environmental purposes without reducing allocations to farmers and cities
- Received commitments that water supplies would not be further reduced because of Endangered Species Act requirements

PUBLIC AND PEER REVIEW

- First annual panel review and scientific evaluation conducted to examine how much water was acquired, how it was used and whether it had an impact
- Ongoing review of EWA provided by scientific advisors
- Program review by CALFED member agencies as part of a cooperative management agreement

PERFORMANCE MEASURES

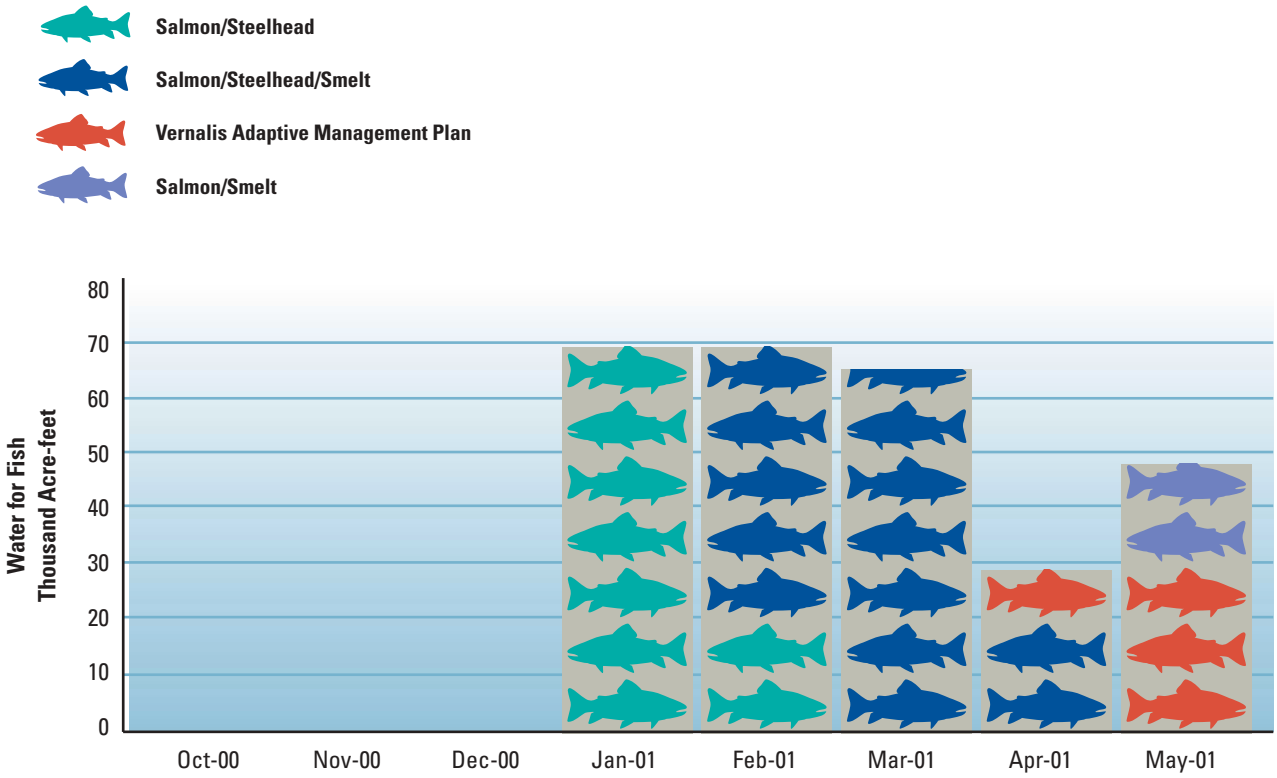
- Performance measures for the EWA may include: estimated effect on fish population levels because of use of EWA water and export reductions (by species); take of fish at the state and federal pumps; and estimated amount of EWA water used to help supplement reduced pumping and protect fish.

NEXT STEPS

- Acquire 255,000 acre-feet of water and source shift water in Year 2
- Continue to use acquired water for Endangered Species Act and other protection
- Complete long-term environmental documentation for EWA
- Acquire Tier 3 reserve water
- Continue work on acquisitions for the EWA in 2002

ENVIRONMENTAL WATER ACCOUNT USAGE

WATER YEAR 2000-2001



WATERSHED MANAGEMENT

By providing financial and technical assistance for local watershed programs, the CALFED Program aims to support watershed management efforts that reduce water quality problems, restore and protect watershed functions and improve water supply reliability.

The program also seeks to foster local leadership by encouraging landowners, community members, environmental organizations and local public agencies to come together on watershed projects.

GOALS

- Assist local programs that help achieve overall Program objectives
- Promote integration and collaboration between programs, efforts and people at the watershed level

ACCOMPLISHMENTS

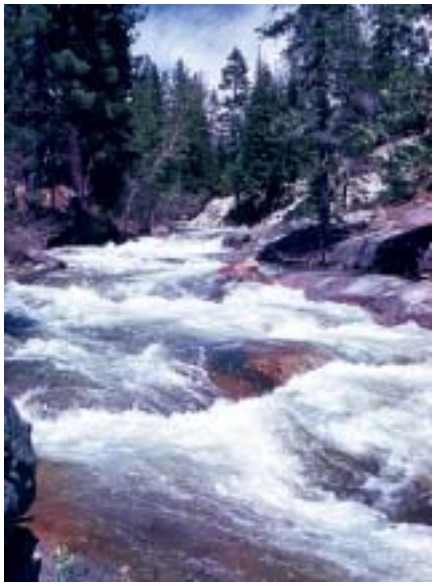
- Developed 2001 grant program for locally based watershed projects, funding 54 projects at approximately $18 million
- Provided funding in coordination with the Ecosystem Restoration Program to support projects in more than 50 watersheds
- Developed a Memorandum of Understanding to ensure better coordination between state and federal watershed programs

PUBLIC AND PEER REVIEW

- Formed Interagency Watershed Advisory Team to improve access to and effectiveness of technical assistance to local watershed groups
- All projects reviewed by Watershed Selection Committee that includes 17 representatives from member agencies, stakeholders and the academic community

PERFORMANCE MEASURES

- Performance measures for the Watershed Program may include: total number of watershed assessments completed or supported through the Program; total number of new local watershed management programs formed or supported by the Program; number of workshops and training sessions supported by CALFED for local and tribal governments; and improved performance of watersheds, as measured by level, timing and variability of flows.



NEXT STEPS

- Continue to implement a grant program using $10 million Prop 13 monies administered jointly with the State Water Resources Control Board
- Deliver expanded technical assistance from state agencies
- Support Watershed Working Group outreach efforts to further education and information to local communities
- Continue to define comprehensive set of performance measures and develop annual implementation plan

CALFED WATERSHED PROGRAM

DRINKING WATER QUALITY

The Drinking Water Quality Program is unique in addressing water quality from source to tap in order to improve drinking water supplies for the 22 million Californians who rely on the Bay-Delta watershed for all or part of their water.

GOALS

- Improve the quality of water at its source
- Seek advancements in treatment technology
- Find innovative ways to manage and deliver water
- Support health effects research and perform comprehensive monitoring and assessment of Bay-Delta drinking water quality

ACCOMPLISHMENTS

- Implemented seven projects in 2001 totaling $26 million
  Projects Include:
  - The Salinity and Selenium Project to build a pilot plant to treat agricultural drainage and produce water for reuse
  - The Bay Area Blending/Exchange study aimed at improving water quality by blending and exchanging source waters among water utilities
  - Studies of the sources and concentrations of contaminants in Bay-Delta water
  - Studies on Veale and Byron Tracts exploring options for addressing drainage problems in the Delta
  - Water Quality Exchange for Friant-MWD
  - Desalination Research and Innovation Partnership (MWD)
- Developed solicitation and selection process to fund additional drinking water quality projects
- Facilitated approval of Memorandum of Understanding among key state and federal agencies to coordinate actions to address water quality problems
- Negotiated approval of a Memorandum of Understanding between state agencies and local partners for Bay Area Blending/Exchange Studies
- Conducting first grant process
  - Threshold and Science reviews completed
  - 28 proposals to continue through the review process

PUBLIC AND PEER REVIEW

- Review by the Delta Drinking Water Council and Drinking Water Constituents Work Group

PERFORMANCE MEASURES

- Performance measures may include: water quality as indicated by monitoring and testing at key points; frequency or occurrence of advanced treatment technologies at local treatment facilities, and consumer water rates.

NEXT STEPS

- Help form new Drinking Water subcommittee that will operate under the new advisory group
- Make project recommendations for SWRCB Proposition 13 Nonpoint Source grants
- Issue Drinking Water Quality Program grants and directed actions for Years 2 and 3
- Initiate demonstration scale projects for ultraviolet disinfection and regional desalination
- Initiate feasibility study for Bay Area Blending/Exchange
- Develop and implement a plan to meet Delta water quality standards for which the state and federal projects have responsibility

Flood Emergency Response

LEVEE SYSTEM INTEGRITY

With its focus on improving Bay-Delta levees, CALFED is acting to protect water supplies needed for the environment, agriculture and urban uses by reducing the threat of levee failure and seawater intrusion. Delta levees also protect major interstates, roadways, cities, towns, agricultural lands and environmental and aquatic habitat.

GOALS

- Improve levees to a higher standard for greater flood protection
- Improve emergency response capabilities
- Ensure levee maintenance and habitat needs are met
- Improve coordination of permit processes
- Develop adequate and reliable funding for levee maintenance

ACCOMPLISHMENTS

- Awarded more than $18 million in Year 1 to improve levees on 50 Delta islands while $14.6 million was invested in special projects like ecosystem and levee restoration for water quality and flood protection
- Continued work on Delta Dredge and Reuse Strategy
- Developed a Memorandum of Understanding between agencies on the management of the levee program with DWR and the Army Corp of Engineers being co-leads
- Developed a charter for the Suisun Marsh to more effectively integrate multiple uses into a single plan
- Continuing work to develop practical ways to slow, stop and reverse island subsidence

PUBLIC AND PEER REVIEW

- Levee work approved at the State Reclamation Board public meetings
- Levee Program coordinated with stakeholders and peers through the Delta Levees and Habitat Advisory Committee and the Levees and Channels Technical Team

Levee Breach

Funds for Delta levees result in fewer requests for emergency recovery funds and fewer acres flooded.

PERFORMANCE MEASURES

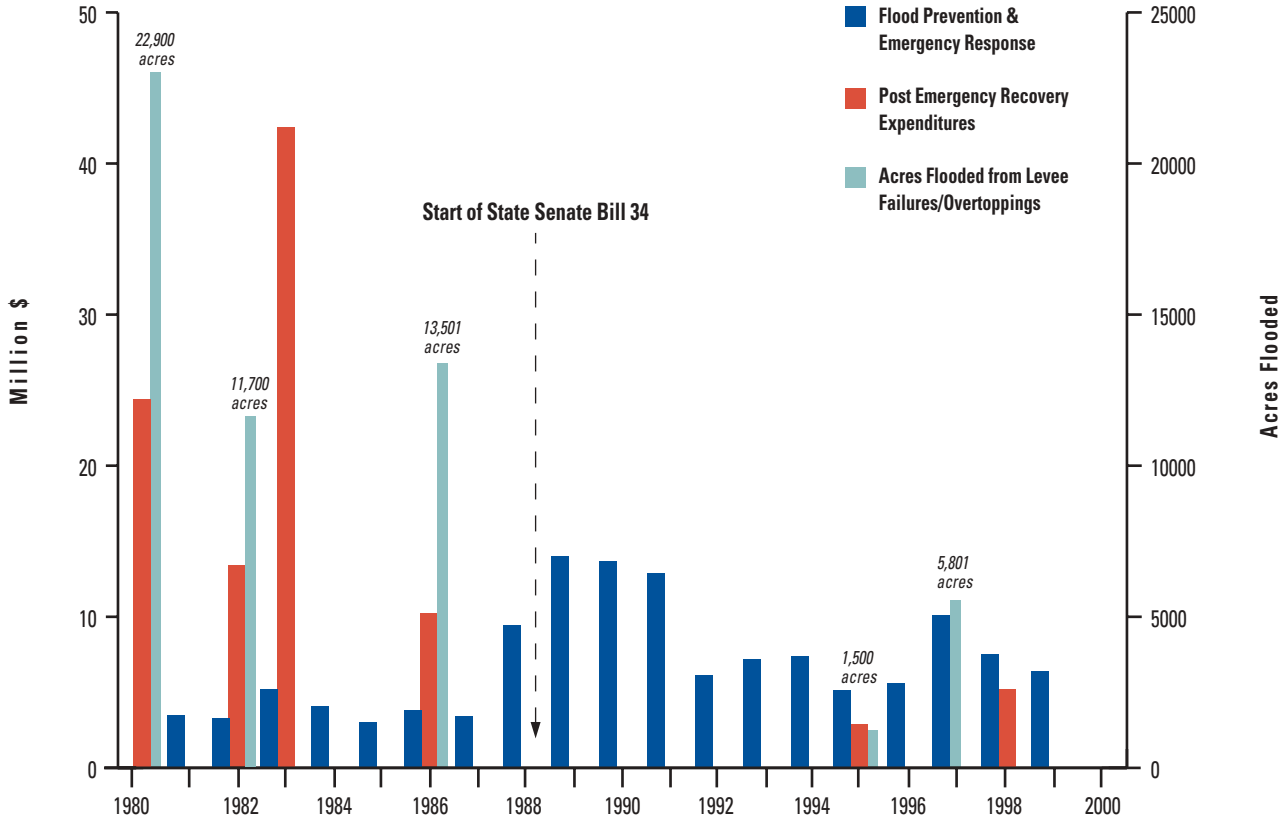
- Performance measures may include: number of levees improved to specific standards; emergency funding and flood response equipment secured and available; and acres and frequency of land flooded.

NEXT STEPS

- Support Levees Subvention and special projects programs
- Perform Risk Assessment
- Continue to refine program performance indicators
- Develop a Dredge Reuse Strategy
- Facilitate the Suisun Marsh Charter Process
- Plan for global climate changes
- Seek increased federal participation
- Continue regulatory coordination

DELTA LEVEE FLOOD COSTS

POST DISASTER ASSISTANCE COSTS AND ACRES FLOODED



Secretary of Resources Mary Nichols Meets With Media at the June 2001 Policy Group Meeting

program accountability and measuring success

The Bay-Delta Program brings a high level of public accountability and visible measures of success.

Performance measures are used to translate program goals and objectives into measurable benchmarks of success. They present information on conditions, trends and their significance. The Program uses performance measures to:

- Evaluate goals, progress and successes of restoration and management efforts
- Increase technical understanding of problems and trends in the Bay-Delta System
- Provide information that can help clarify management decisions
- Inform the public and policy makers about the progress of the program

goals

- Comprehensive project tracking
- Monitoring of each project's performance, cost and schedule
- Measurable progress to assure balance across all elements of the Program
- Monthly status information collected for every project

accomplishments

- Created and put in place a tracking system for evaluating and reporting on each individual program area
- Developed preliminary performance measures with ongoing development coordinated with the Science Program
- Crafted standard procedures for producing consistent data for each program area

example of program tracking information viewed from the web site

CALFED BAY DELTA PROGRAM
Delta Region

Project Title	Project Manager	Email	Phone Number
Tracy Fish Test Facility	Ron Brockman (USBR) Ron Ott (CALFED)		

Purpose of Project

The Tracy Fish Test Facility (TFTF) is being constructed as a state-of-the-art pilot program to test fish screen and salvage technologies, and more specifically fish sorting, handling, holding and transportation techniques preparatory to the design of the expanded Clifton Court Forebay and for expansion at Tracy.

Work Scope Summary

The work scope of this program requires the planning, design and construction of an improved fish processing facility which screens, hold, sorts, and transports a variety of fish species. A gravity line and a lift line operation are being tested with various fish salvage techniques.

Click Here for Detailed

Status of Work

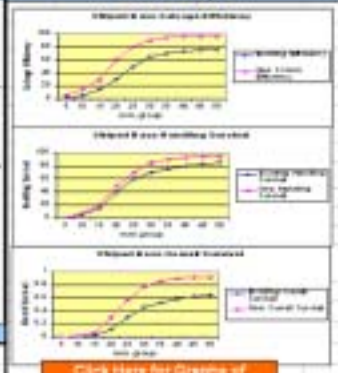
YEAR 1
A Project Management Plan was completed. A Draft Environmental Assessment/Initial Study was issued for public review and three workshops were conducted for comment from the public on this subject. Fishery Engineering Planes were developed. Numerous ongoing research studies related to Tracy Fish Test Facility were initiated for the advancement of necessary technologies. Two sheet pile tests were completed for determination of pile driving performance and noise/vibration characteristics. Approximately 80% of the final design of Tracy Fish Test Facility was completed.

YEAR 2
Continue research addressing the testing and evaluation of new facilities for fish screening, holding, sorting, and transportation in the South Delta. Begin Tracy Fish Test Facility construction, excavation, utility relocation and foundation dewatering; and order "critical path" mechanical equipment.

Progress Against ROD Milestones

TFTF has delayed construction start until May 02 in order to obtain necessary federal funding. Construction completion is now scheduled for January 04, afterwhich operational testing will begin. This will allow time to provide design information to Clifton Court to complete in Stage 1, but will delay their work by 6 months.

Technical Graphic



Click Here for Graphs of Technical Performance

Technical Performance Indicators

Indicator
Prevention of fish loss at pumps and survival of fish that enter the fish facilities to their return to their natural environment

Metric
Survival % of fish that enter the fish facilities

Target

Baseline Available
Yes

State Resources Secretary Mary Nichols; Department of Interior Deputy Chief of Staff Sue Ellen Wooldridge; and State Senators Jim Costa and Mike Machado at the June 2001 Policy Group Meeting

legislative actions in 2001

During 2001, both the California Legislature and the Congress considered several bills related to the Bay-Delta Program's objectives.

water transfers

- **SB 621 (*Costa*) water transfers** would revise the definition of "unused capacity" related to water transfers under specific conditions. This measure has passed the Senate and has been referred to the Assembly Committee on Water, Parks and Wildlife and to the Assembly Committee on Local Government.
- **SB 1029 (*Perata*) water transfers** would revise the definition of the term "fair compensation" related to specific circumstances related to water transfers, and would provide an avenue for filing complaints with SWRCB in that regard. This measure has been held in the Senate Committee on Appropriations.

groundwater management

- **AB 599 (*Liu*) Groundwater contamination: quality monitoring program (Chapter 522, Statutes of 2001)** requires the State Water Resources Control Board to integrate existing monitoring programs and design new program elements to establish a comprehensive statewide groundwater quality monitoring program and to report to to the Governor and the Legislature, by March 1, 2003, on a comprehensive groundwater quality monitoring program for the state.

water use efficiency

- **AB 331 (*Goldberg*) 2002 Recycled Water Task Force (Chapter 590, Statutes of 2001)** requires the Department of Water Resources to convene the 2002 Recycled Water Task Force to advise DWR in investigating opportunities for using recycled water in industrial and commercial applications and in identifying constraints to increasing the industrial and commercial use of recycled water. The bill requires DWR to report to the Legislature with recommendations by July 1, 2003. The Task Force would be funded by Proposition 13 (2000).
- **SB 672 (*Machado*) California Water Plan: urban water management plans (Chapter 320, Statutes of 2001)** requires the Department of Water Resources to include in the California Water Plan (DWR Bulletin 160 series) a report on the development of regional and local water projects, to include water recycling projects, that will improve water supplies to meet municipal, agricultural, and environmental water needs. This bill also requires urban water suppliers to describe the water management tools and options they use that will maximize resources and minimize the need to import water from other regions.

program governance

- **SB 1115 (*Costa*) The CALFED Bay-Delta Program** would create the CALFED Bay-Delta Commission in the Resources Agency to manage implementation of the Bay-Delta Program. This bill is in the Senate Committee on Agriculture and Water Resources.

program financing

- **AB 1602 (*Keeley*) California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002 (Chapter 875, Statutes of 2001)** places a $2.6 billion general obligation bond act on the March 2002 Statewide Primary Election ballot to authorize issuance of bonds to finance resource management programs, including $300 million to the Wildlife Conservation Board for habitat projects that promote recovery of threatened and endangered species. To be voted on in the March 2002 Primary Election.
- **SB 23 (*Costa*) CALFED funds: Bay-Delta Program (Chapter 7, Statutes of 2001)** provided Legislative certification that projects and purposes funded from the State General Fund in Fiscal Year 2000-01 are consistent with the July 2000 Bay-Delta Program Programmatic Environmental Impact Statement/Environmental Impact Report. This certification allowed use of $135 million in General Funds appropriated by the Budget Act of 2000.
- **SB 739 (*Peace*) Budget Act of 2001 (Chapter 106, Statutes of 2001)** appropriated funds to finance California State government for Fiscal Year 2001-02. The Budget Act appropriated $571.9 million ($81 million from the General Fund) to various State agencies to carry out the Bay-Delta Program.
- **HR 2311 (*Callahan*) Energy and Water Development Appropriations Act, 2002 (Public Law 107-66)** appropriated funds to the Department of the Interior and the US Army Corps of Engineers for Federal Fiscal Year 2002 for water development projects.

pending federal legislation

- **HR 3208 (Calvert) Western Water Enhancement Security Act** to authorize funding through the Secretary of Interior for the implementation of a comprehensive program in California to achieve increased water yield and environmental benefits, as well as improved water system reliability, water quality, water use efficiency, watershed management, water transfers, and levee protection.
- **HR 2404 (George Miller) California Water Quality and Reliability Act of 2001** to authorize federal agency participation and financial assistance for programs and for infrastructure improvements for the purposes of increasing deliverable water supplies, conserving water and energy, restoring ecosystems, and enhancing environmental quality in the State of California, and for other purposes.
- **S. 1768 (Feinstein) California Ecosystem, Water Supply, and Water Quality Enhancement Act of 2001** to provide authorization and funding for the enhancement of ecosystems, water supply, and water quality of the State of California.

other topics

- **AB 776 (*Thomson*) State Water Resources Control Board** would direct parties to the Sacramento Valley Water Management Agreement, including the Department of Water Resources and the Bureau of Reclamation, to brief Legislative committees monthly on implementation of the Agreement. The Agreement is being implemented in lieu of proceedings in Phase 8 of the SWRCB Bay-Delta Water Rights Hearing. This measure is in the Assembly inactive file.
- **SB 221 (*Kuehl*) Land use**: water supplies (Chapter 642, Statutes of 2001) requires legislative bodies of cities or counties, under the Planning and Zoning Law, to include as a condition in a tentative map for a subdivision of more than 500 dwelling units a requirement that a "sufficient water supply" shall be available. This bill also specifies procedures and standards for determining if water supplies will be sufficient.
- **SB 610 (*Costa*) Water supply planning (Chapter 643, Statutes of 2001)** requires cities and counties, upon determining that a project is subject to the California Environmental Quality Act, to request applicable public water systems to determine whether projected water supplies will meet projected water demand associated with the project. This bill specifies procedures and standards for making this determination.
- **SB 727 (*Costa*) Environmental Water Account Act of 2001** would formally establish the Environmental Water Account program and create the Environmental Water Account Program Fund. This measure is in the Senate Committee on Agriculture and Water Resources.

litigation update

Summary of Laub v. Babbitt, et al. (E.D. Cal., No. CV-F-00-6601)

On September 28, 2000, the California Farm Bureau Federation and three individuals filed a lawsuit against several federal and state CALFED agencies and officials in federal district court. The Farm Bureau claimed that the agencies violated the National Environmental Policy Act and the California Environmental Quality Act when they acquired land and water under the CALFED program. In December 2000, the court dismissed the CEQA claim and the state agencies. After the Farm Bureau amended its complaint to include additional state officials, the court dismissed this complaint as well, in September 2001. The court agreed with the federal and state defendants that the NEPA claim was not ripe for adjudication, and it agreed with the state defendants that NEPA does not apply to state acquisitions of land and water. Further proceedings are pending.

Summary of Bay-Delta Programmatic EIR Cases (Jud. Council Coord. Proceeding No. 4152)

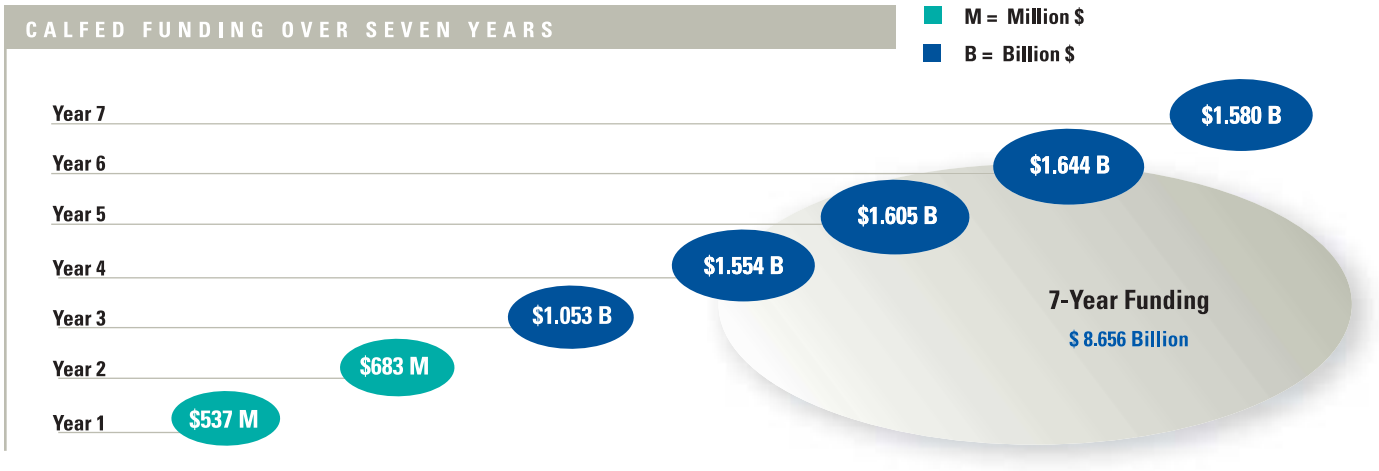
In September, 2000, the Regional Council of Rural Counties, Central and South Delta Water Agencies, and certain individuals filed suit in Sacramento Superior Court against the CALFED state and federal agencies (Case No. 00CS01331). The Municipal Water District of Orange County filed a related legal action in Los Angeles Superior Court at the same time (Case No. BC237574.) Following the dismissal of the Farm Bureau's legal claims from federal court, those petitioners refiled their legal action in Fresno Superior Court (Case No. 00 CE CG 11667). All three actions allege that the state agencies did not comply with CEQA in preparing the CALFED Programmatic Environmental Impact Statement/Environmental Impact and Record of Decision. The RCRC action also seeks to invalidate the CALFED ROD on various grounds.

On April 2, 2001, all three action were coordinated for hearing in the Sacramento Superior Court. The administrative record was filed in July, 2001, and various preliminary motions have been set for hearing in November and December, 2001.

On November 14, 2001, the Municipal Water District of Orange County dismissed its case following a settlement in which the parties acknowledged actions set forth in the CALFED ROD and the agencies' progress in implementing certain program areas.

fiscal information

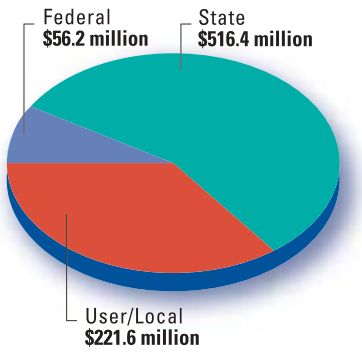
In the Record of Decision, CALFED projected expenditures for each program element over a 7 year period. In many cases the funding appropriated has not equaled the amount projected in the ROD. The primary source of funding in the first two years of CALFED implementation is from state bond funds. However, bond funds will be depleted by Year 3 and 4 in most cases.



stage 1

Projected Expenditures. Table 1, taken from the June 2000, Framework for Action, provides the Stage 1 estimates for CALFED projected expenditures. These estimates are in Year 2000 dollars. Actual funds appropriated for CALFED for Year 1 and 2 are shown in Tables 2 and 3. Proposed expenditures for Years 5-7 are estimates that will be adjusted after an evaluation is made of effectiveness of the program investments during Years 1-4. Table 1 does not include the funding projected for CALFED oversight and coordination. (see table 1 on page 66)

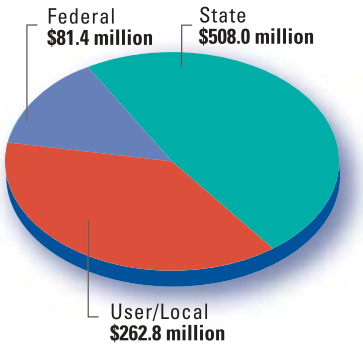
YEAR 1 FUNDING



year 1

Table 2 includes the funds appropriated for the CALFED Bay-Delta Program in the first year of the program (state fiscal year is July 1, 2000 – June 30, '01, federal fiscal year is October 1, 2000 – September 30, '01). Funding for CALFED in Year 1 was $766 million, primarily due to state bond funds ($323 million) and local cost sharing for recycling projects ($149 million). Year 1 funding was increased in some program elements because of revised cost estimates, such as for the Environmental Water Account, and because bond funds were being spent at a faster rate than planned in the ROD for groundwater projects and other programs. However, an increase in rate of spending in Year 1 funding does not affect the overall seven-year total reflected in Table 1. (see table 2 on page 67)

YEAR 2 FUNDING



year 2

Table 3 includes the funds appropriated for the CALFED Bay-Delta Program in the second year of the program (state fiscal year is July 1, 2001 – June 30, '02, federal fiscal year is October 1, 2001 – September 30, '02). Total funding budgeted for Year 2 is $852 million, primarily due to state bond funds ($385 million) and local cost sharing for recycling projects ($178 million). Again, in Year 2 as in Year 1, bond funds for ground-water storage are being spent at a faster rate than projected in Table 1. However, funding from the State General Fund was reduced by approximately $20 million in Year 2 due to state revenue shortfalls. (see table 3 on page 68)

fiscal information

The following three tables summarize the Stage I funding needs and the Year 1 and Year 2 appropriated funds for CALFED.

TABLE 1 CALFED BAY-DELTA PROGRAM
stage 1 projected expenditures ($ in millions)

	program year(s)								cost sharing		
program element	1	2	3	4	5	6	7	total	fed	state	other
Ecosystem Restoration[1]	$235	$198	$163	$168	$220	$218	$218	$1,420	$510	$510	$400
Environmental Water Account	$50	$50	$50	$50				$200	$100	$100	
Water Use Efficiency	$31	$62	$299	$641	$641	$641	$641	$2,956	$759	$759	$1,438
Water Transfers	$3	$3	$3	$2	$2	$1	$1	$15	$7.5	$7.5	
Watershed[2]	$40	$45	$45	$45	$45	$40	$40	$300	$138	$138	$24
Drinking Water Quality[3]	$41	$78	$82	$110	$116	$120	$128	$675	$200	$200	$275
Levees[4]	$33	$76	$78	$82	$45	$65	$65	$444	$142	$88	$34
Storage[5]	$50	$75	$138	$208	$266	$349	$339	$1,425	$237	$237	$200
Conveyance[6]	$29	$66	$150	$198	$220	$160	$98	$921	$188	$381	$193
Science	$25	$30	$45	$50	$50	$50	$50	$300	$150	$150	
total[7]	$537	$683	$1,053	$1,554	$1,605	$1,644	$1,580	$8,656	$2,432	$2,571	$2,564

[1]Proposed cost sharing for the ERP is a split between users (-$35 million per year from a new broad-based fee & $15 million per year in CVPIA Restoration Funds), and public dollars (assumed split equally between federal and state sources of funding). This table assumes revenues from new broad based fees would become available beginning in 2003.

[2]Cost shares include a 10% contribution from locals for community based watershed activities, with the rest funded equally between federal and state sources.

[3]In general cost sharing is assumed to be 50/50 fed/state or 33/33/33 fed/state/user, depending on the action. Some water quality actions assume federal and state funding in the initial 2 years, with 100% of the funding in the latter years from users.

[4]Total cost includes the Suisun Marsh Levee Program, which provides substantial ecosystem, water quality and flood protection benefits. Allocations of cost shares for this Program is not included in this table.

[5]Initial Funding will be largely state and federal sources. The cost share for surface storage construction has not been determined. Final cost shares (including reimbursements by beneficiaries) will depend on allocation of costs and identification of beneficiaries for individual projects. Cost sharing for full-scale groundwater storage projects assumes a 50% local match.

[6]Total includes rough estimate for construction of the San Luis Reservoir Low Point Project, but cost sharing is not included because cost shares have not been determined.

[7]Cost sharing dollars do not total $8.6 billion because allocation of cost shares have not determined for all levee, storage and conveyance activities.

TABLE 2 CALFED BAY-DELTA PROGRAM

year 1 funding by source ($ in millions)

	Year 1 Funding	state funding[1]					federal funding[2]				user/local funding[3]			
		GF	Prop 204	Prop 13	Other State	Subtotal	USBR/W&RR	USACE	Other Fed[2]	Subtotal	SWP	CVPIA RF	Local[4]	Subtotal
Ecosystem Restoration	$236	$3.5	$134.9	$46.2	$6.1	$190.7	$4.3	$0.4	$6.3	$11	$3.7	$17.1	$13.5	$34.3
Environmental Water Account	$59.1	$59.1				$59.1								
Water Use Efficiency	$204.1	$17.0		$12.3		$29.3	$26.0			$26.0			$148.8	$148.8
Water Conservation	($31.2)	($17.0)		($3.2)		($20.2)	($1.9)			($1.9)			($9.1)	($9.1)
Water Recycling	($172.9)			($9.1)		($9.1)	($24.1)			($24.1)			($139.7)	($139.7)
Water Transfers	$1.1	$1.1				$1.1								
Watershed	$33.0	$18.9	$1.3		$1.0	$21.2			$2.3	$2.3			$9.5	$9.5
Drinking Water Quality	$37.5	$13.5		$24.0		$37.5								
Levees	$35.4	$0.1	$1.7	$28.5		$30.3					$0.6		$4.5	$5.1
Storage	$95.5	$24.7		$69.0		$93.7	$1.8			$1.8				
WMS/Oversight & Coor.	($2.9)	($2.9)				($2.9)								
Surface	($13.8)	($12.0)				($12.0)	($1.8)			($1.8)				
Groundwater	($78.8)	($9.8)		($69.0)		($78.8)								
Conveyance	$22.3	$4.2		$4.8		$9.0	$2.6			$2.6	$9.7	$1.0		$10.7
Science	$28.2	$13.2			$2.3	$15.5	$4.0	$0.2	$1.9	$6.1	$6.2	$0.2	$0.2	$6.6
CALFED Science	($13.8)	($13.0)				($13.0)			($0.8)	($0.8)				
IEP	($14.4)	($0.2)			($2.3)	($2.5)	($4.0)	($0.2)	($1.1)	($5.3)	($6.2)	($0.2)	($0.2)	($6.6)
Oversight & Coordination	$13.8	$13.5				$13.5		$0.3		$0.3				
total	$765.9	$182.0	$137.9	$184.8	$11.7	$516.4	$42.7	$1.1	$12.4	$56.2	$26.4	$18.5	$176.7	$221.6

[1]State funding sources include General Fund (GF), bond funds (Proposition 204 & Proposition 13), and Other State funding sources (Other State). Other State includes State matching funds for projects funded through the ERP 2001 Proposal Solicitation Package ($6.1m) and Interagency Ecological Program (IEP) funding ($2.274m) from various departments that contributes to the Science Program.

[2]Federal funding sources include U.S. Bureau of Reclamation Water and Related Resources (USBR W&RR), U.S. Army Corps of Engineers appropriations (USACE), and Other Federal sources (Other Fed). Other Fed includes Federal matching funds for projects funded through the ERP 2001 Proposal Solicitation Package ($6.3m), USGS funding for the Science Program ($0.8), and IEP funding from U.S. Fish & Wildlife Service ($0.231), U.S. Geological Survey ($0.782), National Marine Fisheries Service ($0.035), and U.S. Environmental Protection Agency ($0.04) that contributes to the Science Program.

[3]User subtotal includes State Water Project Funds and CVPIA Restoration Funds that are collected from state water contractors and Central Valley Project water users. These funds are budgeted and appropriated through the federal and state governments. ERP amount includes local cost share for the 74 proposals recommended for funding this Year through the 2001 Proposal Solicitation Package. Water Use Efficiency and Watershed amounts include local cost sharing for grant projects funded through PSPs. Water Use Efficiency amount also includes non-Federal funding for Title XVI water recycling programs/projects. Levees amount includes local cost share for levee subventions. Science amount is SWP and other local contributions to the IEP. Additional local contributions in other program areas will be estimated as information is available.

TABLE 3 CALFED BAY-DELTA PROGRAM

year 2 funding by source ($ in millions)

		state funding					federal funding[2]				user/local funding[3]			
	Total Year 2 Funding	GF[5]	Prop 204	Prop 13	Other State[1]	Subtotal	USBR/W&RR[4]	USACE	Other Fed[2]	Subtotal	SWP	CVPIA RF	Local	Subtotal
Ecosystem Restoration	$188.2	$2.8	$126.3	$10.0		$139.1	$2.2	$1.2	$3.1	$6.5	$7.3	$18.8	$16.5	$42.6
Environmental Water Account	$48.0	$1.0	$28.2	$6.3		$35.5	$12.5			$12.5				
Water Use Efficiency	$333.7	$11.8		$43.3	$57.9	$113.0	$19.8		$18.2	$38.0			$182.7	$182.7
Water Conservation	($37.1)	($11.8)		($18.3)		($30.1)	($2.3)			($2.3)			($4.7)	($4.7)
Water Recycling	($296.6)			($25.0)	($57.9)	($82.9)	($17.5)		($18.2)	($35.7)			($178.0)	($178.0)
Water Transfers	$1.1	$0.9				$0.9	$0.2			$0.2				
Watershed	$17.3	$7.3		$10.0		$17.3								
Drinking Water Quality	$16.2	$4.1		$12.1		$16.2								
Levees	$17.2	$4.9	$8.4			$13.3		$0.3		$0.3	$0.6		$3.0	$3.6
Storage	$123.2	$14.1		$103.0		$117.1	$6.2			$6.2				
WMS/Oversight & Coor.	($1.5)	($1.5)				($1.5)								
Surface	($15.0)	($8.8)				($8.8)	($6.2)			($6.2)				
Groundwater	($106.8)	($3.8)		($103.0)		($106.8)								
Conveyance	$72.2	$3.3		$37.6		$40.9	$4.0			$4.0	$17.3	$10.0		$27.3
Science	$20.1	$5.1			$2.3	$7.4	$3.9	$0.2	$2.0	$6.1	$6.2	$0.2	$0.2	$6.6
CALFED Science	($6.6)	($4.9)				($4.9)			($1.7)	($1.7)				
IEP	($13.5)	($0.2)			($2.3)	($2.5)	($3.9)	($0.2)	($0.3)	($4.4)	($6.2)	($0.2)	($0.2)	($6.6)
Oversight & Coordination	$14.9	$7.3				$7.3	$7.5	$0.1		$7.6				
subtotal	$852.2	$62.6	$162.9	$222.3	$60.2	$508.0	$56.3	$1.8	$23.3	$81.4	$31.4	$29.0	$202.4	$262.8

[1]Includes State Revolving Funds ($57.9m) from the State Water Resources Control Board and Interagency Ecological Program (IEP) funding ($2.274m) from various departments that contributes to the Science Program.

[2]Includes U.S. Bureau of Reclamation Water and Related Resources (USBR W&RR), Central Valley Project Improvement Act Restoration Funds (CVPIA RF), U.S. Army Corps of Engineers appropriations (USACE), and other federal sources (Other Fed). Other Fed includes U.S. Fish and Wildlife Service funding that contributes to the Ecosystem Restoration Program (ERP- $2.242m), National Marine Fisheries Service funding that contributes to the ERP ($0.81m), U.S. Environmental Protection Agency funding ($18.2m) that contributes to the Water Use Efficiency Program, and IEP funding from U.S. Fish & Wildlife Service ($0.231), U.S. Geological Survey ($0.782), National Marine Fisheries Service ($0.035), and U.S. Environmental Protection Agency ($0.04) that contributes to the Science Program.

[3]User subtotal includes State Water Project Funds and CVPIA Restoration Funds that are collected from state water contractors and Central Valley Project water users. These funds are budgeted and appropriated through the federal and state governments. ERP and WUE amounts include estimates for local cost sharing for grant projects. WUE amount also includes local cost sharing for federal Title XVI recycling projects. Levees amount includes estimated local cost share for levee subventions. Science amount is SWP and other local contributions to the IEP. Additional local contributions in other program areas will be estimated as information is available.

[4]Includes $30 million for CALFED from P.L. 107-66. The allocation of the $30 million may be shifted between programs.

[5]A $20 million budget reduction in General Funds has been imposed by the Governor's Office in the following programs: WUE – $1.9 M; Watersheds – $2 M; DWQ – $5 M; Levees – $8.1 M; and Science – $3 M (numbers are approximations).

project	$
BAY REGION	
Alameda	
ACWD Schools & Water Conservation - Demonstration	$256,700
Oakland Zoo Recycling Feasibility Study	$204,600
Contra Costa	
A Straight Flush Commercial Ultra Low Flush Toilet Direct Install	$374,000
Contra Costa County Watershed Atlas and Creek Restoration Strategy	$50,000
The Save Our Delta Surveys (SODS)	$100,000
Walnut Creek Watershed	$260,000
Marin	
Local Watershed Stewardship: Steelhead Trout Plan	$47,500
Monterey	
Deep Aquifer Study and Management Plan	$260,000
Groundwater Recharge Feasibility Study	$100,000
Marina Coast Water District Water Conservation Feasibility Study	$143,256
On Farm Mobile Lab	$132,905
Napa	
Cullinan Ranch Restoration	$368,500
Ecological Monitoring of Tolay & Cullinan Ranch Tidal Areas	$593,931
Napa Creek Watershed Stewardship Year 3	$191,100
Napa River Watershed	$252,000
Napa River Watershed Mapping Partnership	$318,300
Napa River Wetlands Acquisition	$1,073,513
South Napa River Tidal Slough & Floodplain Restoration Project	$1,565,600
South Napa River Tidal Slough and Floodplain Restoration Project	$1,490,000
South Napa River Wetlands Acquisition and Restoration Program	$466,000
Stewardship Support & Watershed Assessment in the Napa River Watershed: A Two-Year Project	$360,900
Napa, Sonoma, Solano, Contra Costa, Marin	
IPM Partnership to Improve Water Quality in Suisun Bay and Local Creeks	$266,000
Sedimentation in the Delta and Suisun Bay	$1,367,684
San Francisco	
Yosemite Watershed Restoration Assessment Project	$771,000
San Francisco, Alameda, San Mateo	
Cold Water Fisheries and Water Quality Element	$200,000
Determine Biological, Physical & Chemical Characteristics of Ballast Water	$387,182
Preventing Exotic Introductions from Ballast Water	$222,830
Steelhead and Chinook Salmon Fish Passage Barrier Remediation on the Guadulupe River	$178,200
Santa Clara	
Almaden Reservoir Watershed Restoration Project	$300,000
Landscape & Agricultural Area Measurement & Water Budgets	$635,712
Stewardship Plans for the West Valley, Guadalupe, and Lower Peninsula Watersheds	$700,000
Upper Guadalupe River Tributary Monitoring Program and Pilot Restoration Project	$47,000
Santa Clara, Contra Costa, Alameda, Marin	
Regional High-Efficiency Washing Machine Rebate	$4,405,605
San Francisquito Creek Watershed Enhancement Program	$250,225
Westside Basin Groundwater Management Plan	$250,000
Santa Cruz	
Hydrogeologic Investigation and Monitoring in Scott's Valley	$250,000
Santa Cruz, Monterey	
Supplemental Wells/Injection Wells Water Quality Study	$30,450
Solano	
Adopt-a -Watershed Leadership Institute	$592,884
Bay Point shoreline Restoration Plan	$185,000
Benicia Waterfront Marsh Restoration	$59,000
Biological Restoration and Monitoring in the Suisun Marsh/North SF Bay Ecological Zone	$772,667
Chronic Toxicity of Envir. Contaminants in Sacramento Splittail - A Biomarker Approach	$673,684
Environmental Stewardship Educational Conferences & Tours	$48,500
Fish Screen Construction Suisun Marsh	$450,000
Fish Screen Construction Suisun Marsh (Phase 2)	$500,000
Hill Slough West Habitat Restoration. Demo Project	$87,000
Invasive Spartina Project	$1,793,661
Reintroduction of Endangered Soft Bird's Beak to Restored Habitat	$148,627
Suisun Marsh Property Acquisition & Restoration	$536,750
Estuary Action Challenge Environmental. Education Project	$50,000
Sonoma	
City of Santa Rosa Evapotranspiration Controllers Feasibility Study	$93,587
Culture of Delta Smelt	$1,025,015
Hill Slough West Habitat Demonstration Project	$200,000
Petaluma Marsh Expansion Project - Marin County	$352,135
Petaluma River Watershed Restoration Program	$220,000
Regional Wetlands Goals Project	$76,000
Sonoma Creek Watershed	$302,000
Sonoma Creek Watershed Conservancy	$438,923
Sonoma Creek Watershed Conservancy	$545,170
Sonoma Creek Watershed Conservancy: Outreach and Restoration	$270,541
Species & Community Profiles of the SF Bay Area Wetlands Ecosystem Goals Project	$45,320
Tolay Creek Restoration	$283,000

DELTA REGION	
Contra Costa	
Alhambra Creek Watershed CRMP Program	$138,500
Kirker Creek Watershed CRMP Program	$198,450
Stockton EWD & CCWD Fish Screen Facilities	$670,000
Franks Tract Restoration	$323,186
Rhode Island Floodplain Management and Habitat Restoration	$25,000
Study Associated with Restoration of Franks Tract	$1,218,105
Watershed Stewardship in Marsh Creek	$126,000
Contra Costa, San Joaquin	
Demo Project for Protection of Delta Islands	$928,150
Sacramento	
Arden-Cordova Evapotranspiration Controller/Rain Shut-off Program	$23,750
Cosumnes Floodplain Acquisition and Restoration	$3,500,000
Cosumnes River Acquisition, Restoration Planning and Demonstration	$750,000
Cosumnes River Preserve (Valensin Ranch Acquisition)	$1,500,000
Cosumnes River Salmoid Barrier Program Fishery	$188,255
Cosumnes River Watershed Inventory and Assessment	$556,325
Cosumnes Start-up Stewardship and Restoration	$1,985,100
Dry Creek Reclaimed Water Groundwater Recharge Feasibility Study	$287,500
Four Projects for Sacramento Area Water Use Efficiency	$16,661,950
Inventory of forest road systems, Cat Creek Watershed	$45,320
Juvenile Salmon Migratory Behavior Study in Delta	$210,000
McCormack-Williamson Tract Acquisition	$5,356,000
McCormack-Williamson Tract, Ph. II Monitoring	$572,886
McCormack-William Tract Restoration Plan, Design & Monitoring	$365,650
McCormack-Williamson Tract Wildlife Levee Management	$122,014
Restore Habitat on McCormack-Williamson Levees	$860,778
Rio Linda, El Verta - Natomas In-Lieu Groundwater Recharge Feasibility Study	$189,750
Sherman Island - Levee Habitat Demonstration Project	$480,000
Stone Lakes NWR Land Acquisitions	$2,622,500
Tyler Island Levee Protection and Habitat Restoration Pilot Project	$885,202
Water-Wise Demonstration Landscape	$277,663
Sacramento, El Dorado	
Linked Hydrogeomorphic Ecosystem Models to Support Adaptive Management	$1,546,016
Sacramento, San Joaquin	
Cosumne/Mokelumne Corridor Floodplain Acquisitions	$3,044,342
Cosumnes River Feasibility Study	$1,007,800
Influence of Flood Regimes, Vegetative and Geomorphic Structures on the Links between Aquatic and Terrestrial Systems	$2,521,236
NPS Pollution Reduction in Vineyards	$365,300
Sacramento, Yolo, Solano	
Hastings Tract screen feasibility study	$27,000
North Delta Area - Juvenile Salmon Rearing	$24,500

project	$
Sacramento, Yolo, Solano, San Joaquin	
1999/2000 Bay-Delta Education Program	$33,269
Algal Toxicity	$500,000
Arundo Donax Eradication and Coordination.	$842,587
Assessing Ecological & Economic Impacts of the Chinese Mitten crab	$113,033
Assessment of Ecological and Human Health Impacts of Mercury in the Bay-Delta Watershed	$4,164,000
Assessment of organic matter in the habitat and its relationship to the food chain	$1,440,649
Assessment of Pesticide Effects on Fish & Their Food Resources	$1,586,894
Biological Assessment of Green Sturgeon	$211,164
Biological Assessment of Green Sturgeon in the Sacramento-San Joaquin Watershed	$241,000
Central Valley Steelhead Genetic Evaluation	$70,636
Contaminant Effects on Smelt	$437,326
Culture of Delta Smelts Phase II & III	$576,229
Determine Effects of Toxics	$110,000
Developing a Methodology to Accurately Simulate Entrainment of Fish	$200,000
Development of a Comprehensive Implementation Plan for a Statistically Designed Marking & Recovery Plan	$74,951
Digital Soil Survey and Mapping Imagery Develop	$502,100
Dissolved Organic Carbon Release from Delta Wetlands, Part 1	$1,434,449
Dissolved Organic Carbon Release-Delta Wetlands	$1,030,000
East Delta Habitat Corridor (Georgiana Slough)	$1,100,000
Effects of Introduced Clams on the Food Supply of Bay-Delta Fishes	$1,000,490
Effects of introduced Species of Zooplankton & clams on the Bay-Delta Food Web	$653,384
Effects of Wetlands Restoration on Methyl Mercury Levels	$546,171
Evaluation of Alternative Pesticide Use Reduction Practices	$1,113,781
Evaluation of Potential Impacts of Chinese Mitten Crab on Benthic Comm. In the Delta	$152,233
Evaluation of Selenium Sources, Levels, and Consequences in the Delta	$1,627,117
Evaluation of tagging data	$672,600
Expanding California Salmon Habitat to Alter Dams and Diversions	$49,000
Fathead Minnow Toxicity	$400,000
Food Reserve for Zooplankton in the S. San Joaquin River Delta	$576,422
Genetic Identification of Watershed Dependent Species	$851,669
In-Channel Island Restoration/demonstration	$270,270
Innovative Fish Screen for Small Diversions Demonstration Project	$90,000
Introduced Spartina Eradication Project	$275,000
Introduction of Non-indigenous Aquatic Species Research Program	$197,000
Levee Setback Geomorphic Model	$104,458
Monitoring of Delta contaminants	$100,000
Non-native Invasive Species Advisory Council	$50,000
Practical Guidebook to Prevent & Control for Non-native Invasive Plants in Shallow Water Habitats of the Bay-Delta Ecosystem	$76,750
Purple Loosestrife Prevention, Detection & Control Actions for the Sacramento-San Joaquin River Delta System	$127,473
Purple Loostrife Prevention, Detection & Control in the Sac/San Joaquin Delta & Associated Hydrologic Units	$201,306
Rainbow Trout Toxicity Monitoring	$530,000
Reducing Risk of Importation & Distribution on Non-native Invasive Species Through Outreach & Education	$105,466
Research to Predict Evolution of Restored Diked Wetlands	$575,172
Delta Sediment Water Quality	$24,000
Delta Sediment Water Quality	$276,000
Delta Sediment Water Quality	$200,000
Sedimentation movement and availability and monitoring in the Delta	$1,047,010
Small Diversion Fish Screen Program	$900,000
Twitchell Island Subsidence Study	$194,870
Understanding Tidal Marsh Restoration Processes & Patterns	$1,042,246
Water Hyacinth Education Program	$64,500
Water Quality Criteria for Chlorpyrifos and Diazinon (Designated Action)	$67,753
Winter-run Chinook Salmon Captive Broodstock Program	$300,000
Zebra Mussel Detection & Outreach Project	$100,000

San Joaquin	
Canal Ranch Habitat Restoration Phase II	$135,940
Fay Island Restoration Project	$744,148
Fern-Headreach Tidal Perennial Aquatic and Shaded River Aquatic Conservation Project	$425,000
Lower Mokelumne River Restoration Program	$680,000
Lower Mokelumne River Watershed Education Project	$70,140
Proposal to Develop Local Watershed Stewardship Plan for the Lower Mokelumne River	$159,000
Staten Island Acquisition	$35,220,873
Task 1.1: Program Coordination	$277,000
Transport, Transfer & Effects of Selenium and Carbon in the Delta	$2,600,000
Woodbridge fish screen and passage	$1,575,000
San Joaquin, Stanislaus, Merced, Madera, Fresno	
Determination of the Causes of Dissolved Oxygen Depletion in the San Joaquin River	$892,400
Solano	
Cache Slough habitat enhancement	$85,000
Hastings Tract Fish Screen Phase II: Construction	$271,250
Jepson Prairie Restoration and Conservation Plan	$244,801
Lagoon Valley Watershed Restoration	$431,000
Liberty Island Acquisition	$8,926,000
Liberty Island Acquisition & Restoration Phase II	$2,701,734
Prospect Island - Develop Monitoring Plan	$35,000
Prospect Island - Shallow Water Habitat/Wetlands Restoration Plan	$2,500,000
Prospect Island Habitat Protection Project	$2,000,000
Prospect Island Monitoring Project	$915,000
Stanislaus	
Restore Special Run Pool 10 Reach	$165,000
Tuolumne River Natural Resources Program	$3,583,000
Yolo	
Discover the Flyway	$49,000
Educating Farmers & Landowners in Biological Reserve Management	$1,066,593
Inundation of a Section of the Yolo Bypass to Restore Sacramento Splittail & Other Native Species	$912,309
The Virtual Science Center and Hands-on Learning Programs	$9,600
Watershed Restoration Strategy for the Yolo Bypass	$244,188
Yolo Bypass - Habitat Restoration Study	$226,000
Yolo Bypass Management Strategy Phase II	$210,000
Yolo Bypass Watershed Planning Project	$288,081
Yolo County (FCWCD) Yolo Zamora Water District Conjunctive water use Project	$427,800

SACRAMENTO VALLEY REGION

Butte	
Adams Dam Fish Screen & Ladder	$70,304
Adams Dam Screen and Passage	$217,000
Butte Cr/Sanborn Slough Bifurcation Upgrade Project	$1,000,000
Butte Creek - Watershed Management Strategy Plan	$83,000
Butte Creek Acquisition and Riparian Restoration	$187,128
Butte Creek Acquisition and Riparian Restoration	$125,000
Butte Creek Riparian Restoration Demonstration	$76,348
Butte Creek Watershed	$302,867
Butte Creek Watershed Floodplain Management Plan	$582,510
Cherokee Watershed Organizational Capacity and Citizen Monitoring Project	$93,815
Construct Fish Ladder on Parrott-Phelan Dam	$0
Construct Siphon & Associated Improvements on Western Canal	$3,095,873
Fish Screen and Ladder Construction	$316,500
Gorrill Dam Fish Screen & Ladder	$67,990
Gorrill Dam Screen and Ladder	$369,641
OWID Palermo Canal Lining Project	$251,000
Watershed Education Program	$100,865
Western Canal Water District Tailwater Recovery System Feasibility Study	$125,000
Butte, Colusa, Glen	
The Butte Creek Watershed Educational Workshops and Field Tours Series	$33,000

project	$
Butte, Glenn	
WCWD Water Use Efficiency Project	$285,524
Butte, Yuba, Sutter	
Ferris Meadow Reach-Feather R. Corridor Restoration Management	$1,009,400
Colusa	
Maxwell ID-Tuttle Pump Relocation Project	$440,737
Sand and Salt Creek Watershed Project	$599,000
Colusa, Sutter	
RD 108 screen construction	$2,500,000
Wilkins Slough - Fish Screen Prelim. Design	$100,000
Small Fish Screen Evaluation	$95,000
El Dorado	
ARC Water Quality Assessment: South Fork American and Cosumnes River Basins	$96,700
Ultra Low Flush Toilet Rebates for Low-Income Customers	$104,300
Glenn	
Glenn County Installation of Dedicated Multicompletion Groundwater Monitoring System with Extensometers and Observation Wells	$265,000
Orland Project Water Conservation Feasibility Study	$140,000
Regional Water Use Efficiency Project	$296,800
Glenn, Butte, Colusa	
Fish Screen Construction	$5,500,000
Fish Screen -Feasibility Engineering	$75,000
Princeton Fish Screen Construction	$1,750,000
Princeton Pumping Plant Fish Screen (Phase 1-Feas.)	$75,000
Sac River Fish Small Screen Project	$1,800,000
Glenn, Colusa, Yolo	
Colusa Basin Watershed Program	$492,500
Glenn-Colusa	
GCID System Optimization for Fisheries, etc.	$1,322,000
Humboldt	
City of Rio Dell Water Conservation Feasibility Study	$100,000
City of Trinidad Water Conservation Feasibility Study	$100,000
Fieldbrook Community Services District Water Conservation Feasibility Study	$100,000
Lake	
Big Valley Groundwater Recharge Investigation Update	$179,004
Middle Creek Ecosystem Restoration Project- Design Phase	$135,818
Nevada	
South Yuba River Comprehensive Management Plan	$524,671
Yuba River Conservancy Planning and Public Outreach Proposal	$192,300
Orange	
Water Softener Pilot Program	$357,005
Placer	
City of Roseville Creek and Riparian Management and Restoration Plan	$228,470
Douglas/Long Canyon Paired - Watershed Project	$86,108
North/Middle Forks American River Watershed EUI-Based Watershed Management Plan	$554,500
Real-time Canal Flow Monitoring and Canal Lining	$1,325,488
Western Placer Watersheds Coordination, Planning & Assessment	$425,764
Plumas	
The Last Chance Assessment of Model Protocol	$582,000
Plumas, Sierra	
Hydrogeology and Groundwater Monitoring in Sierra Valley	$250,000
Sacramento	
Assessment and Implementation of Urban Use Reduction of Diazion and Chlorpyrifos	$663,500
Watershed Management Planning for Sacramento River Riparian Program	$200,000
Development of River Corridor Management Plan (RCMP)	$250,000
Sacramento, El Dorado, Placer	
American River Integrated Watershed Stewardship Strategy	$220,750
Shasta, Tehama, Butte, Glenn, Colusa, Sutter, Yolo	
Arundo Donax: Survey and Eradication	$360,000
Floodplain Acquisition. & Management on Sacramento River	$534,570
Promotion of Farming Best Management Practices and Calibration Technology to Mitigate OP Pesticide Runoff into the Sacramento River Watershed	$308,000
Riparian Corridor Acquisition & Restoration Assessment	$2,240,250
Sacramento River Acquisition and Riparian Forest Restoration	$780,000
Sacramento River and Major Tributaries.- Corridor Mapping Project	$145,200
Sacramento River Conservation Area Program	$326,991
Sacramento River Floodplain Acquisition and Riparian Restoration	$9,879,800
Sacramento River Meander Restoration	$898,700
Sacramento River Valley	
Sacramento River Floodplain Acquisition and Riparian Restoration	$512,500
Sacramento, Yolo, Solano, San Joaquin	
Fish Treadmill Developed Fish screen Criteria for Native Sacramento-San Joaquin Watershed Fishes	$823,000
Sacramento River Discovery Center	$39,552
Shasta	
ACID Churn Creek Lateral Improvement Project Feasibility Study	$100,000
City of Redding Water Utility Fish Screen Rehabilitation.	$510,262
Clear Creek Juvenile Salmon Monitoring Project	$871,026
Clear Creek Prescription	$256,260
Genetic Comparison of Steelhead Stocks in Clear Creek	$45,493
Gravel Restoration Project	$0
Lower Clear Creek Floodway Restoration Project	$3,559,596
Redding Area Water Resources Master Plan - Phase 2C	$250,000
Saeltzer Dam Fish Passage	$238,200
Sulphur Creek Coordinated Resource Management Planning Group	$23,828
Interactive Watershed Information Model for Education and Adaptive Management	$378,899
Shasta West Watershed Assessment	$131,600
Shasta, Modoc, Lassen	
Pit River Watershed Alliance Watershed Management Program	$542,456
Shasta, Glenn, Colusa, Yolo, Sutter, Butte, Sacramento	
Sub-basin Level Water Measurement Program	$7,756,000
Shasta, Tehama	
ACID Fish Passage	$325,000
ACID Fish Passage and Fish Screen Improvement Project, Phase II, Final Design	$860,000
ACID Fish Passage and Fish Screen Improvement Project, Phase III	$5,253,000
ACID Fish Screen	$5,100,000
Battle Creek - Chinook Salmon & Establish Watershed Conservancy	$50,000
Battle Creek - Chinook Salmon & Steelhead Restoration Study	$306,000
Battle Creek Anadromous Salmonid Monitoring Projects	$1,576,152
Battle Creek Riparian Protection	$1,000,000
Battle Creek Salmon and Steelhead Restoration Project	$28,000,000
Battle Creek Screens and Fish Passage	$395,000
Battle Creek Screens and Fish Passage	$395,000
Battle Creek Watershed Stewardship	$145,000
Cottonwood Creek Watershed Group Formation	$161,000
Cottonwood Cr. Watershed Monitoring. & Assessment	$360,500
Cottonwood Creek Channel Restoration Planning	$61,000
Fish Passage Improvement Project at the Red Bluff Diversion Dam	$340,600
Fish Passage Improvement Project at the Red Bluff Diversion Dam	$1,030,000
Improve Upstream Ladder & Barrier Weir @Coleman Nat'l Fish Hatchery at Battle Creek	$2,500,000
Lake Red Bluff Riparian Area Restoration & Education Support Project	$29,114
Main Canal Modernization	$4,113,000
Monitoring Spring and Winter-run Chinook Salmon and Steelhead in Battle Creek	$150,000
Sacramento River Winter Chinook Salmon Carcass Survey	$305,273
Selected fish screens	$374,850
Spawning Areas of Green Sturgeon in the Upper Sacramento River	$60,801
Solano	
Lower Putah Creek Watershed Assessment and Stewardship Implementation Program	$600,000
Sutter	
Lower Butte Creek Project Phase III	$4,783,719
Sutter County Integrated Watershed Coordinator	$195,200
Sutter National Wildlife Refuge Water Conveyance Restoration Project	$521,250
Sutter, Placer, Sacramento	
American Basin Fish Screen & Habitat Improvement	$950,000
Project Management & Scoping	$203,250

project	$
Restoration planning (M and N Fork American River, Auburn Ravine, Coon Creek)	$222,530
Sutter, Sacramento	
American Basin Fish Screen and Habitat Improvement Project	$200,000
City of Sac. Fish screen Program	$6,020,995
City of Sacramento Fish Screen Replacement Project Phase 2 - Design	$654,500
RD 2035 Fish Screen	$100,000
Sutter, Yuba, Sacramento	
Riparian Habitat Restoration Verona-Collinsville (Phase 1-Feas.)	$500,000
Tehama	
Anadromous Fish Passage at Clough Dam on Mill Creek	$1,215,000
Deer and Mill Creeks Acquisition and Enhancement	$1,000,000
Lassen Natl. Forest Watershed Stewardship	$849,845
Lower Mill Creek riparian Restoration	$69,000
Lower Mill Creek riparian Restoration	$30,000
Water Inventory and Analysis for Tehama County	$272,500
Watershed Planning (Deer Creek)	$196,554
Lassen National Forest Watershed Stewardship within the Anadromous Antelope Creek Watershed	$673,000
Tehama, Butte	
Boeger Family Farm Fish screen Phase II: Construction	$139,500
Butte Creek Big Chico & Sutter Sal & Steelhead Evaluation	$280,951
Estimated Abundance of Juvenile to Adult Escapement in Sacramento River	$1,081,638
Pump Station Relocation Construction	$1,610,000
Real Time Flow Monitoring	$418,700
Watershed Plan (Big Chico Creek)	$422,830
Watershed improvements/sediment stabilization (Deer, Mill, Antelope Creeks)	$371,000
Deer Creek Watershed Conservancy Rangeland and Riparian Management Program	$212,000
Tehama, Butte, Glenn, Sutter, Colusa	
Lower Butte Creek Project Phase II	$775,000
White Mallard Dam & Associated Diversions	$84,938
Yolo	
A Management Program for Tamarix & Arundo don ax on Cache Creek	$222,200
Capay Valley Community Action Plan	$40,000
Capay Valley Watershed Improvement Program	$118,000
Metering El Macero Water Service Area of Davis	$356,250
RD 2035 Fish Screen Design & Environ. Review	$1,820,000
Sustaining Agriculture & Wildlife Beyond Riparian Corridor	$1,464,167
Union School Slough Watershed Improvement Program	$636,000
Willow Slough Watershed Rangeland Stewardship Program	$1,800,668
Yolo, Solano	
Lower Putah Creek Watershed Stewardship Program	$100,500
Yuba	
Development of Implementation Plan for Lower Yuba River Anadromous Fish Habitat Restoration	$3,000,000
Life History and Stock Composition of Steelhead Trout	$120,000
South Yuba River Coordinated Watershed Management Plan	$264,000
Yuba County Conjunctive Use Program	$1,500,000
Yuba River Fish Screen Replacement	$114,750
Yuba Watershed Council	$142,618
Sac River Small Diversion Fish Screen Program	$322,081
Wilson Ranch Screen	$200,000

SAN JOAQUIN REGION

San Joaquin	
Biological Agricultural Systems in Cotton-BASIC-Reducing Synthetic Pesticides & Fertilizers in the N. San Joaquin Valley	$460,000
Calaveras	
Calaveras River Watershed Management Plan Implementation Program (Phase II)	$195,000
Camanche/Valley Springs Groundwater Study	$241,180
Contra Costa, Alameda, San Joaquin, Stanislaus, Merced	
Bacterial treatment of Selenium in the Panoche Drainage	$1,149,000
Fresno	
Arroyo Pasajero/Cantua Creek Conjunctive Use Hydrologic Study	$72,900
Current Condition Assessment of the Silver Creek Drainage and Panoche Alluvial Fan Areas of the Panoche/Silver Creek Watershed	$200,000
Dedicated Recharge Basin	$2,145,750
Groundwater Monitoring and Recharge Investigation Project	$249,895
McMillan Recharge Project	$136,500
Millerton Area Watershed Coalition	$102,154
On-farm Integrated Irrigation & Drainage Management	$1,122,385
Pleasant Valley Groundwater Storage Pilot Project	$590,550
Variability of Soil Salinity on Farms	$281,410
Waldron Pond Expansion Project	$97,500
Fresno, Kings	
Total Utilization of Drainage & Minimization of Evaporation	$148,030
Fresno, Kings, Kern	
Irrigation Scheduling	$1,365,000
Fresno, Kings, Tulare	
Monitoring Well Replacement	$250,000
Inyo	
Development of Hydrologic and Vadose Models to Improve Groundwater management in the Owens Valley	$375,750
Kern	
B-369 Distribution System and Lateral / B-230-D Extension	$5,763,410
Groundwater Management in Indian Wells Valley Basin	$207,000
Groundwater Recharge Feasibility Report	$280,000
Groundwater Storage Program	$1,583,094
P-667 Distribution System	$4,309,808
Service Area 3 Distribution System Improvement	$650,100
Service Area 5 Distribution System Improvement	$894,900
Water Quality Study	$282,246
Kern-Tulare	
Water Use Efficiency Project	$8,000,000
Kings	
AWD In-Lieu Groundwater Recharge Feasibility Study	$97,500
Tulare	
Hannah Ranch Site - Recharge Feasibility Study	$94,000
Madera	
Gravely Ford Canal Dedicated Basin	$69,000
Groundwater Basin Data Management System	$245,000
In-Lieu Groundwater Recharge Feasibility Study	$68,000
Madera, Fresno	
On-farm Irrigation System Improvements	$467,706
Merced	
Merced River Corridor Restoration Plan	$300,000
Merced River Corridor Restoration Project Phase III	$235,870
Real Time WQ Management of Seasonal Wetlands	$671,900
Merced River Salmon Habitat Enhancement; Lower Stone	$130,000
Merced River Salmon Habitat Enhancement; Ratzlaff Reach	$1,586,350
Phase 3 - Merced River Salmon Habitat Enhancement	$2,433,759
Merced	$1,699,101
San Bernardino	
Groundwater Management Plan for the Mojave Water Agency	$550,000
San Joaquin	
Delta Studies Program for San Joaquin County Schools	$306,291
Demo of Passage Technology for Restoration of Newton CU Mine	$60,000
Enhancement of the San Joaquin County Groundwater Monitoring Program	$923,527
Murphy Creek Restoration Project	$282,500
SEWD Groundwater Storage Pilot Project	$1,788,000
Sub-surface Drip Irrigation of Asparagus	$2,400,500
The Arroyo Pasajero Watershed: Restoring the Land for the Water	$200,000
This River is Our River: Watershed Capacity Building	$373,875

project	$
San Joaquin, Sacramento	
Implementing programs to reduce the use of pesticides and fertilizers in Sacramento and San Joaquin watersheds	$1,680,631
Implementing programs to reduce the use of pesticides and fertilizers in Sacramento and San Joaquin watersheds (BIOS)	$660,000
San Joaquin, Stanislaus, Merced, Fresno	
Panoche/Silver Creek Watershed Management Action Plan	$873,440
San Joaquin, Stanislaus, Merced, Madera, Fresno	
Acquisition and Restoration of Refuge Lands (San Joaquin R NWR)	$10,827,000
Banta-Carbona fish screen	$938,875
Bear Creek Floodplain Restoration Demonstration Project (SLNWR)	$334,000
Developing a Genetic Baseline for San Joaquin Salmon	$387,003
Fish Screen Project	$100,000
Focused Action to Develop Ecol. Based Hydro Model	$304,803
Health Monitoring of Hatchery & Natural Fall-run Chinook in San Joaquin River	$38,996
Mechanistic Approach to Riparian Restoration	$230,376
River Studies Center Exhibits & Programs	$70,467
San Joaquin River Pilot Project	$2,575,000
San Joaquin River Real-Time Water Quality Management Program	$931,857
San Joaquin Valley Salmonids in the Classroom Program Enhancement	$3,000
Santa Barbara	
Wellhead Protection Demonstration Project and Pilot Demonstration A&R Program	$250,000
Stanislaus	
Chinook Salmon Movement in the Lower San Joaquin R and South Delta	$285,000
Floodplain Easements; Lower Tuolumne and San Joaquin (DA9)	$1,545,000
Gravel at Basso Bridge	$250,975
Grayson River Ranch Perpetual Easement and Restoration	$732,000
Hamilton Wetlands Restoration Planning	$830,500
Irrigation Mgmt. & Dormant Spray Reduction	$1,026,794
Lower San Joaquin River Floodplain Protection and Restoration Project	$1,100,000
Patterson ID Positive Barrier Fish Screen on San Joaquin	$175,000
Restore MJ Ruddy Reach	$3,332,050
San Joaquin R NWR Riparian Habitat Protection & Restor.	$7,646,233
Southwest Stanislaus County Regional Drainage Water Management	$848,138
Tuolumne R. Bobcat Flat Floodplain Acquisition	$2,043,850
Tuolumne R. Restoration: Special Run Pool 11	$543,530
Tuolumne River Channel Restoration (Pool 9)	$2,353,100
Tuolumne River Fine Sediment Management	$910,486
Tuolumne River Initiative: Developing an Integrated Plan	$250,000
Tuolumne River Mining Reach Restoration No.3 Warner-Dierdorf Segment	$910,486
Tuolumne River Setback Levees and Channel Restoration	$2,801,000
Water Challenge 2010	$94,213
Stanislaus, San Joaquin	
Knights Ferry Gravel Replenishment	$536,410
Tuolumne River Setback Levees and Channel Restoration	$1,362,000
Water Acquisition	$3,090,000
On-Farm Ditch and Cast-in-Place Replacement	$548,000
Tulare	
Groundwater Recharge Facilities Feasibility Study	$82,984
Kennedy Wasteway/Sandridge Canal Feasibility Study	$57,000

SOUTHERN CALIFORNIA REGION

All Counties	
Brookside Golf Course Water Management Project	$356,200
Claremont Evapotranspiration Controller/Rain Shut-off Program	$95,000
Commercial Rebate Program	$3,268,000
Community Water Education and Training (WET)	$3,900,000
Demo. of Water Cons. in Urban Supermarkets	$180,000
Dominguez Gap Enhanced Groundwater Recharge Feasibility Study	$176,446
High-efficiency Clothes Washer Rebates	$1,500,000
Live Oak Basin Pilot Project	$500,000
New Courses for Bilingual Landscape Education	$150,000
San Dimas Evapotranspiration Controller/Rain Shut-off Program	$95,000
San Gabriel River Watershed Citizen Monitoring Program	$51,120
San Gabriel Valley. Indoor/Outdoor Water Savings Survey	$43,757
Los Angeles	
LA, SE District Evapotranspiration Controller/Rain Shut-off Program	$47,501
Los Angeles & San Gabriel Rivers Watershed Council Organizational Development	$288,000
Study of Augmenting Groundwater Supplies Through Capture of Urban Runoff	$971,800
Sun Valley Watershed Management and Water Replenishment Project	$430,000
Orange	
Expansion of the Learning to be WaterWise Program	$58,245
Joint Agency X-Ray Processor Retrofit Model	$41,698
Riverside	
Back Basin Injection Pilot Project	$1,664,750
Cabazon Groundwater Recharge Project	$152,260
Coldwater Basin Groundwater Recharge Feasibility Study	$198,000
Development of a Groundwater Management Plan for the Elsinore Basin	$592,000
Feasibility Study for CVWD Irrigation System	$99,929
Hemet / San Jacinto Groundwater Storage Program	$400,000
Martinez Canyon Pilot Recharge Study	$1,629,521
Salt-Tolerant Crops Evaluation	$69,600
Upper Chuckwalla Groundwater Storage Program	$530,380
Riverside, San Bernardino	
Yucaipa Water Conservation Feasibility Study	$89,324
San Bernardino	
Groundwater Recharge Facilities Feasibility Study	$145,000
Transition Zone Mojave River Groundwater Recharge Feasibility Study	$200,000
San Diego	
Lower San Luis Rey River Valley Groundwater Storage and Recovery Pilot Project	$2,500,000
San Diego River System groundwater Management Program	$670,560
Voucher Incentive - Clothes Washers- Residential	$873,500
San Luis Obispo	
Los Osos Evapotranspiration Controller/Rain Shut-off Program	$47,500
Santa Barbara	
Weather TRAK Evapotranspiration Controller	$351,325
Ventura	
Inland Saline Intrusion Assessment Project	$248,600

MULTIPLE REGIONS

Sacramento, Yolo, Solano, San Joaquin	
Applied Research to Identify Chinook Salmon Runs via Genetics	$450,000
Bay-Delta Environmental Restoration Education Program	$40,000
Bay-Delta Learning Initiative	$126,668
Environmental Agriculture Conferences and Field Tours	$28,000
Estuary Action Challenge Environmental Education Project	$51,500
Traveling Film Festival Exhibit	$51,500
Traveling Film Festival/ San Joaquin River Oral History Film	$216,550
Traveling Film Festival/Heron Booth/Video Archive	$54,000
Water Challenge 2010 Exhibit	$52,015
Watershed Educational Training	$13,390
Statewide	
California Water Conservation Support Network	$210,000
Citizen Involvement and Regional Outreach Program	$608,132
Discover the Flyway	$197,987
Efficient Landscape Water Program	$1,022,639
Implementation of BMPs to Mitigate OP Pesticides Runoff	$400,000
Irrigation Districts' Technical Assistance	$600,000
Partnership for Sub-Regional Watershed Forums and a Watershed Center	$498,122
Public Information Program	$1,350,000
Quantifying Commercial Industrial Institution Demand Side Management Potential	$145,000
Sacramento River, Headwaters to the Ocean, Public Information and Education	$321,816
The Learning Watershed Project	$56,907
Water Conservation and Recycling Awareness	$241,593

reference documents

California's Water Future: A Framework for Action – June 9, 2000

Final Programmatic Environmental Impact Statement/Report (EIS/EIR) – July 21, 2000

- Main Document (Impact Analysis) – 1,200 pages
- Executive Summary of EIS/EIR Main Document – 40 pages
- Phase II Report – 200 pages
- Implementation Plan – 190 pages
- Ecosystem Restoration Program Plan – 1,200 pages, four volumes
- Levee System Integrity Program Plan – 500 pages
- Water Quality Program Plan – 300 pages
- Water Use Efficiency Program Plan – 190 pages
- Water Transfer Program Plan – 100 pages
- Watershed Program Plan – 100 pages
- Multi-species Conservation Strategy – 500 pages
- Comprehensive Monitoring Assessment & Research Program Plan – 150 pages
- Response to Comments – 1,500 pages, three volumes

Record of Decision – August 28, 2000

CALFED Bay-Delta Program Project Tracking

ERP Draft Stage 1 Implementation Plan

CALFED

BAY-DELTA

PROGRAM

ANNUAL REPORT

2001

CALIFORNIA WATER

CALFED AGENCIES

CALIFORNIA

The Resources Agency
- Department of Water Resources
- Department of Fish and Game
- The Reclamation Board
- Delta Protection Commission
- Department of Conservation
- San Francisco Bay Conservation and Development Commission

California Environmental Protection Agency
- State Water Resources Control Board

California Department of Health Services

California Department of Food and Agriculture

FEDERAL

Department of the Interior
- Bureau of Reclamation
- Fish and Wildlife Service
- Geological Survey
- Bureau of Land Management

Environmental Protection Agency

Army Corps of Engineers

Department of Agriculture
- Natural Resources Conservation Service
- Forest Service

Department of Commerce
- National Marine Fisheries Service

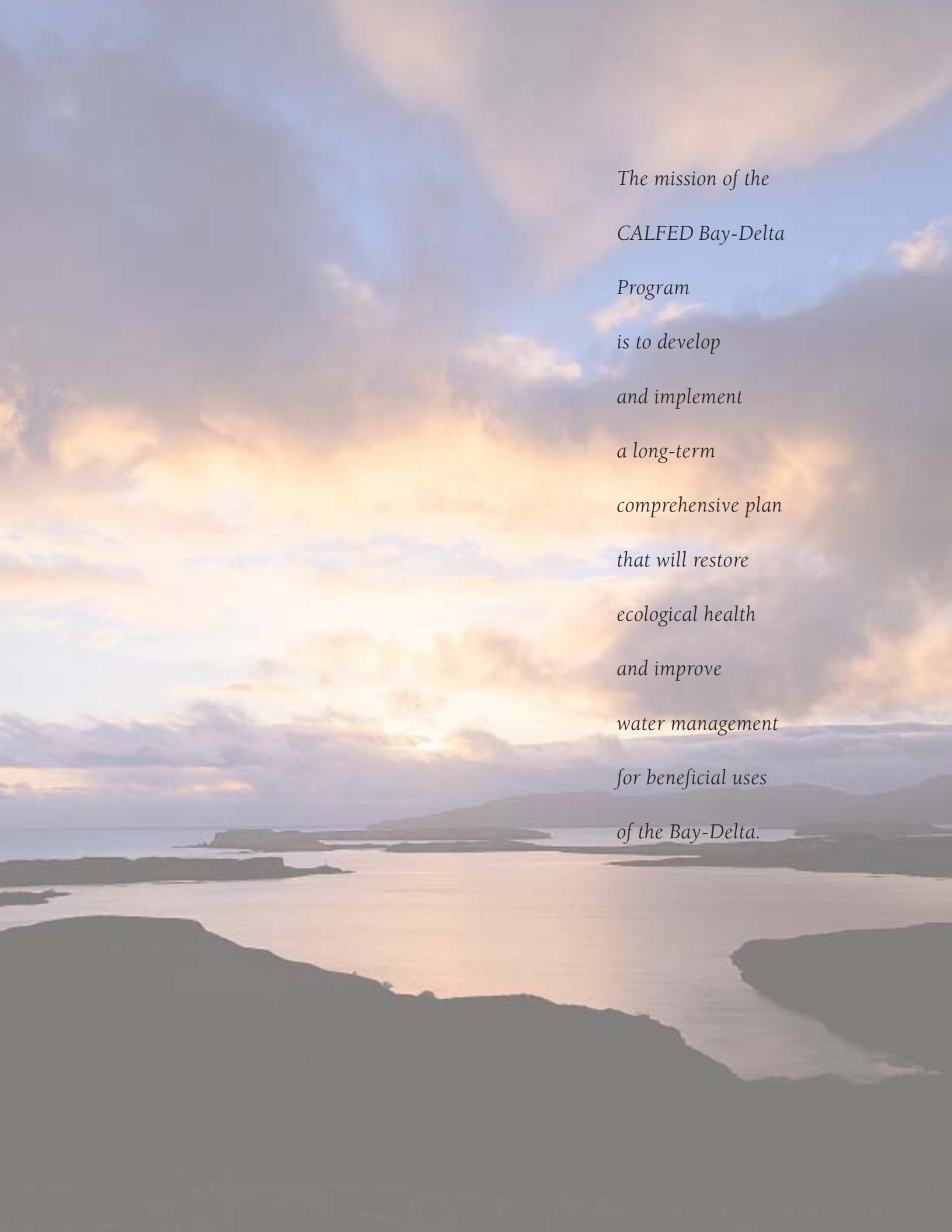
Western Area Power Administration

CALFED BAY-DELTA PROGRAM

The CALFED Bay-Delta Program is a collaborative effort among 23 state and federal agencies (CALFED agencies) to improve water supplies in California and the health of the San Francisco Bay-Sacramento-San Joaquin River Delta Watershed. Under the current governance structure, the CALFED agencies cooperatively implement the Program through their respective agency program authorities, e.g., Federal Central Valley Project Improvement Act, State Proposition 13, State Senate Bill 34, etc., and pertinent funding mechanisms.

In their totality, the individual actions of the CALFED agencies represent the projects and accomplishments shown throughout this report. Additionally, the report's accomplishments are in some instances cumulative in that actions and projects undertaken by CALFED agencies have been ongoing and often pre-date the formation of the CALFED Program.

A fundamental premise of the program is that the agencies can best meet their individual responsibilities by sharing information and cooperating with each other. The CALFED Program is not itself an agency and exercises no authority over the agencies. The program relies on the continuous cooperation of each participating agency, exercising its own legal authority.



The mission of the CALFED Bay-Delta Program is to develop and implement a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta.

TABLE OF CONTENTS

CALFED BAY-DELTA PROGRAM ANNUAL REPORT 2001

EXECUTIVE SUMMARY

Director's Message 1
Accomplishments in 2001 2
Program Highlights 4
Summary of Progress and Balance 12

INTRODUCTION

We All Depend on the Bay-Delta 14
Defining the Conflict 15
Resolving the Conflict 16
An Unprecedented Scope and Vision 17
Timeline 18
Shaping the Solution Through Partnerships 19

REGIONAL VIEW

The Sacramento Region 22
The Delta Region 24
Bay Area Region 26
San Joaquin Valley Region 28
Southern California Region 30

PROGRAM ELEMENTS

A Balanced Approach 32
Science 34
Water Management 37
Storage 40
Conveyance 43
Water Use Efficiency 45
Water Transfers 47
Ecosystem Restoration Program 49
Environmental Water Account 51
Watershed Management 53
Drinking Water Quality 55
Levee System Integrity 57

PROGRAM MANAGEMENT

Program Tracking and Accountability 59
Legislative Actions for 2001 61
Litigation Update 63
Fiscal Information 64
Grants and Loans Project List 69

REFERENCE DOCUMENTS 74

When the CALFED Bay-Delta Program concluded its five-year planning phase last year, many wondered if it could make the transition to a full-scale, cutting edge program capable of resolving ecosystem and water supply reliability problems in California.

As it completes its first full year of implementation, the CALFED Program is building a strong track record in several key areas. More than $500 million has been allocated for water supply, water quality, ecosystem restoration, and levee stability projects throughout California. CALFED's innovative Environmental Water Account provided nearly 300,000 acre-feet of water for environmental needs without reducing deliveries to cities and farms. And through state and federal dry year programs, nearly 300,000 acre-feet was made available to areas suffering from water shortages.

Regional strategies are also beginning to emerge. From the Sacramento Valley Water Management Agreement to water quality exchange programs in the Bay area and Southern California, local groups are developing collaborative, multiple purpose projects to meet their most pressing water needs. These strategies (described on pages 22-32) represent the future of CALFED—funding collaborative, locally-based initiatives to meet the Program's goals.

And perhaps most significant, the Science Program, led by Chief Scientist Sam Luoma, firmly established itself through a series of studies, workshops and panels as an independent, highly credible force for improving the scientific basis of all major projects and programs.

At the same time, however, a number of important program elements are behind schedule—primarily due to a lack of funding. Key projects to increase storage and improve water conveyance through the Bay-Delta system are behind, and the water use efficiency, water quality, watersheds, levee integrity, and science programs are underfunded.

The CALFED Program's commitment to a balanced and integrated approach is what sets this effort apart from any other large-scale restoration or water management program in the nation. It is what keeps diverse stakeholders engaged in the process; it is also what makes it so challenging at times to move ahead.

As we look forward to the year ahead, the CALFED agencies will seek to build upon the collaborative efforts that are well under way, and secure balanced funding from our state, federal, and local partners.

Patrick Wright
Director, CALFED Bay-Delta Program

CALFED BAY-DELTA PROGRAM ACCOMPLISHMENTS

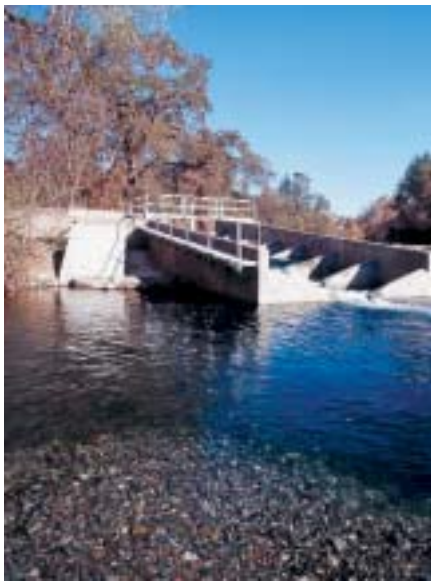
Six years after the signing of the Bay-Delta Accord and subsequent planning and public input, the Bay-Delta Program has met its first year implementation goals and objectives. Major Program accomplishments are listed below for Year 1, grouped by the four program objectives, science and overall program management:

WATER SUPPLY RELIABILITY

- Allocated approximately $200 million from Proposition 13 and other sources to local agencies for water supply, water quality and water use efficiency projects throughout the state
- Initiated or continued planning studies of 5 surface storage projects: Shasta enlargement; Sites Reservoir; In-Delta Storage; Los Vaqueros Expansion; and Upper San Joaquin Storage. Completed Memoranda of Understanding (MOU) with local partners for Sites Reservoir and Los Vaqueros Expansion planning studies
- Completed 16 Memoranda of Understanding or Letters of Intent with 30 local agencies throughout the state to study groundwater storage improvements
- Supported the Governor's Advisory Drought Planning Panel in developing a *Critical Water Shortage Contingency Plan*. Implemented state and federal dry year programs that provided nearly 300,000 acre-feet to areas suffering from water shortages
- Developed and implemented a comprehensive operations plan to coordinate actions and improve water supply reliability

ECOSYSTEM RESTORATION AND WATERSHEDS

- Since 1995, CALFED agencies and stakeholders have funded 326 ecosystem projects for $336 million including projects funded through the Anadromous Fish Restoration Program of the CVPIA. In 2001, $195 million was spent on activities including ecosystem water quality, ecosystem science, strategy planning, and 74 individual ecosystem restoration projects selected through a public solicitation process. Specific highlights include:
  - Began fish passage improvements along 182 river miles
  - Installed 64 fish screens at critical diversion points
  - Conducted 23 studies at $26.5 million for various effects on the Bay-Delta system
- Continued integration of the “single blueprint” for better coordination of ecosystem restoration activities between state and federal agencies
- Funded over 50 locally based watershed projects for $19 million, as well as provided funds in coordination with the Ecosystem Restoration Program to support projects in more than 50 watersheds
- Launched an innovative Environment Water Account that made available 287,000 acre-feet of water in the last year for fish without reducing allocations to farms and cities


Butte Creek Fish Passage

WATER QUALITY

- Developed grant programs for local agencies to address drinking water quality and watershed protection projects throughout the state
- Implemented seven projects in 2001 totaling $26 million for drinking water quality including salinity/selenium treatment and blending and exchanging source waters
- Developed solicitation and selection process for an additional $10 million in drinking water quality projects
- Implemented an ecosystem water quality project in 2001 in the Stockton Deep Water Ship Channel

LEVEE SYSTEM INTEGRITY

- Awarded more than $18 million in year 1 to improve levees on 50 Delta islands while $14.6 million was invested in special projects like ecosystem and levee restoration for water quality and flood protection

SCIENCE

- Conducted $2.5 million in Delta Cross Channel studies to evaluate fishery, water quality and water supply reliability issues
- Hosted the first CALFED Science Conference to engage the scientific community and the public and co-sponsored and participated in the October '01 State of the Estuary Conference
- Convened expert panel and conducted first annual review for the Environmental Water Account, as well as several scientific workshops and program reviews
- Supported and integrated the activities of the independent ecosystem science board, interagency ecological program, EWA science advisors and other independent peer review efforts
- Led the effort to develop an interagency Science Consortium to support common efforts to investigate and share information

PROGRAM MANAGEMENT

- Convened four public workshops throughout the state on Environmental Justice issues in an effort to identify any adverse impacts the Program may have on disadvantaged communities
- Developed new partnership with the Governor's Office for Innovation in Government to address streamlining traditional government business practices
- Established the Bay-Delta Public Advisory Committee, a new 28-member citizens group to advise state and federal agencies on Program implementation

2000-2001 CALFED WATER SUPPLY RELIABILITY HIGHLIGHTS

STRATEGY HIGHLIGHTS

Groundwater Grants & Loans
$23.5 million for 53 projects
(Prop. 13, Chapter 8 Article 4 and Chapter 9 Article 2 , and AB 303)

Groundwater MOUs
16 agreements with counties and local water management agencies

Water Use Efficiency Grants & Loans
$13.4 million for 66 projects

Interim Water Supply Grants
$72 million
(Prop. 13, Chapter 9 Article 4 includes groundwater, water use effciency and conveyance projects)

An on-line water market information and resource for water users

1. *Shasta Storage Evaluations*
2. *Sites Storage Memorandum of Understanding (MOU)*
3. *Delta Storage & Conveyance Evaluations*
4. *Environmental Water Account provided 287,000 acre-feet in transfers for fish without reducing allocations to farms and cities*
5. *Los Vaqueros Expansion Memorandum of Understanding*
6. *• Upper San Joaquin River Storage Evaluations*
   • MWDSC - Friant Water Quality Exchange Partnership
7. *LA urban runoff/groundwater study augmentation*
8. *State and federal dry year programs provided 298,000 acre-feet to water short areas*

New Construction Development

WATER SUPPLY RELIABILITY

PURPOSE

- Water Supply Reliability encompasses an array of projects and approaches to expand water supplies and ensure efficient use of the resource

GOALS

- Working with local and regional agencies, the Program has identified actions that could increase California water supplies by nearly 3 million acre-feet over the next 10 years—enough water to meet the needs of 6 million families annually

ACCOMPLISHMENTS

The CALFED Program made significant progress in the first year to improve California's water supply reliability by providing grants and loans totaling about $200 million which will improve statewide operational flexibility and increase water supply reliability and improve water quality

- **Storage**
  - Initiated or continued planning studies of 5 surface storage projects: Shasta enlargement; Sites Reservoir; In-Delta Storage; Los Vaqueros Expansion and Upper San Joaquin Storage. Completed Memoranda of Understanding with local partners for Sites Reservoir and Los Vaqueros Expansion planning studies
  - Completed 16 Memoranda of Understanding or Letters of Intent with 30 local agencies throughout the state to study groundwater storage improvements
  - Allocated $74 million in loans and grants to local agencies for planning and implementation of groundwater storage improvements
- **Conveyance**
  - Continued design of the Tracy Fish Test Facility to provide critical data on the effectiveness of screening state and federal water project facilities in the South Delta
  - Continued planning and design of permanent fish barriers to Clifton Court Forebay operable tidal and fish barriers in an effort to increase periodic pumping to 10,300 cubic feet per second
- **Transfers**
  - Provided public information and disclosure throughout the year for the "ON TAP" web site, an on-line water market information resource for water users
  - Oversaw development of a standardized method to establish transferable water
  - Continued meetings of interested stakeholders to address and resolve water transfer issues and explore changes to existing law
- **Water Use Efficiency**
  - Awarded $13.3 million for 65 projects—including 37 urban and 28 agricultural
  - Moving forward in defining "appropriate measurement" of water usage and certification of urban Best Management Practices
  - Continued refinement of quantifiable objectives regarding oversight and coordination for agricultural water use

ECOSYSTEM RESTORATION AND WATERSHED MANAGEMENT HIGHLIGHTS

ECOSYSTEM RESTORATION & WATERSHED HIGHLIGHTS

Ecosystem Restoration Grants to date
326 Projects for $336 million

- '97 Approved Projects
- '98 Approved Projects
- '99 Approved Projects
- '00 Approved Projects
- '01 Approved Projects

Watershed Management Grants
Over 50 projects approx. $19 million

- '01 Approved Projects

1. *Butte Creek*
2. *Battle Creek*
3. *Clear Creek*
4. *Sacramento River Conservation Area*
5. *Cosumnes River*
6. *Yolo Bypass*
7. *Tuolumne River*
8. *San Joaquin River*

Spring-Run Chinook Salmon in Butte Creek

ECOSYSTEM RESTORATION AND WATERSHED MANAGEMENT

PURPOSE

- Improving the health of the Bay-Delta system through restoring and protecting habitats and native species

GOALS

- **Ecosystem Restoration**
  - Recover at-risk species, rehabilitate natural hydrology processes to enhance ecosystem water quality, protect and restore functional habitats, reduce negative impacts of non-native species, and improve and maintain water sediment quality for a healthier ecosystem
- **Watershed Management**
  - Increase integration and collaboration of watershed programs with local leadership and continue to better coordinate local, state and federal watershed programs in order to achieve CALFED Program objectives

ACCOMPLISHMENTS

- **Ecosystem Restoration –** Since 1996, CALFED agencies have funded 326 ecosystem projects for $336 million including projects funded through the Anadromous Fish Restoration Program of the CVPIA. Of these projects, 74 were funded in 2001 for $115 million. Specific highlights include:
  - Began fish passage improvements along 182 river miles
  - Installed 64 fish screens at critical diversion points
  - Conducted 23 studies at $26.5 million for various effects on the Bay-Delta system
- **Watershed Management**
  - Funded over 50 locally based watershed projects for $19 million, as well as providing funds in coordination with the Ecosystem Restoration Program to support projects in more than 50 watersheds
  - Formed Interagency Watershed Advisory Team to provide assistance to local watershed groups

2000-2001 CALFED WATER QUALITY HIGHLIGHTS

ECOSYSTEM WATER SUPPLY GRANTS

Ecosystem Water Quality Grants
1 Project for $7 million

8. *Stockton Dissolved Oxygen Investigations*

DRINKING WATER QUALITY GRANTS

Drinking Water Quality Grants
7 Projects for $26 million

1. *Facilitate Water Quality Exchanges for So Cal*
2. *Desalination Research and Innovation Partnership (MWD)*
3. *Bay Area Blending/ Exchange*
4. *Veale-Byron Ag Drainage Reduction*
5. *Bay-Delta Evaluation of Water Quality*
6. *Real-Time Water Quality Monitoring*
7. *Salinity and Selenium Removal for Ag Drainage*

Water Treatment Plant

WATER QUALITY

PURPOSE

- Improve water quality from source to tap for the 22 million Californians whose drinking water supplies come from the Bay-Delta watershed

GOALS

- Collaborate and fund projects that seek to improve the quality of water at its source, seek advancements in treatment technology, research and perform monitoring of the Bay-Delta drinking water quality, continue to look for ways to better manage and deliver water

ACCOMPLISHMENTS

- Implemented seven projects in 2001 totaling $26 million for drinking water quality including salinity/selenium treatment and blending and exchanging source waters
- Developed solicitation and selection process for an additional $10 million in drinking water quality projects
- Worked with science program to facilitate studies and identify sources and solutions of low dissolved oxygen concentrations that hinder upstream migration of certain fish species and violate water quality standards in the Stockton Deep Water Ship Channel
- Implemented one project in 2001 to address ecosystem water quality in the Stockton Deep Water Ship Channel

2000-2001 CALFED DELTA LEVEE SYSTEM INTEGRITY

HIGHLIGHTS

- **CALFED Delta Levee Projects**

1. *McCormack-Williamson Tract (Reclamation District 2110)*
2. *Twitchell Island Levee Setback/Habitat Creation (Reclamation District 1601)*
3. *Decker Island Project*
4. *Franks Tract Channel Islands*

Widespread Flooding

LEVEE SYSTEM INTEGRITY

PURPOSE

- Improving Bay-Delta levees will provide flood protection, ecosystem benefits and protect water supplies needed for the environment, agriculture and urban users by reducing the threat of levee failure and seawater intrusion while lessening levee failures, damage to property and requests for emergency funds

GOALS

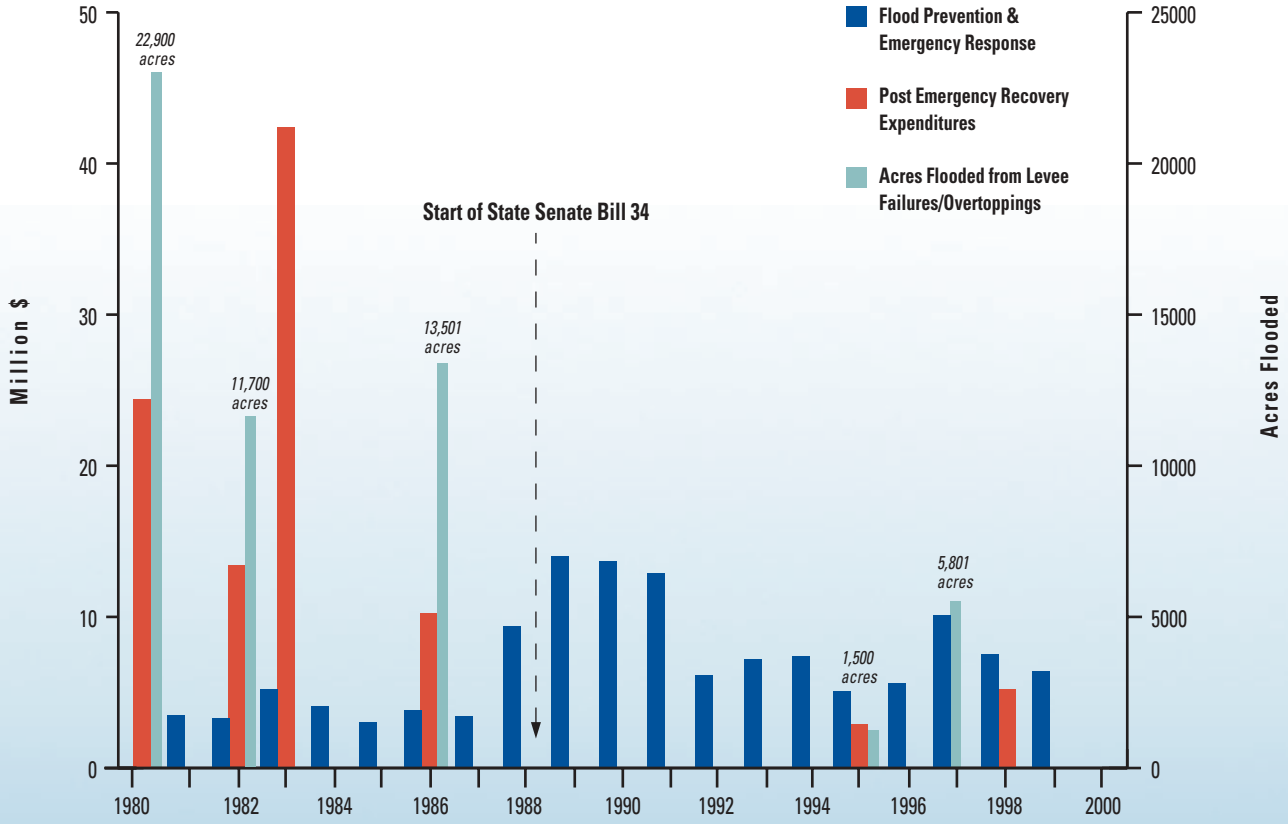
- Balance the need to improve levees to a higher standard for greater protection and fewer emergency responses, while maintaining habitat needs
- Develop adequate and reliable funding, as well as improve the permit process to increase levee stability in the Bay-Delta system

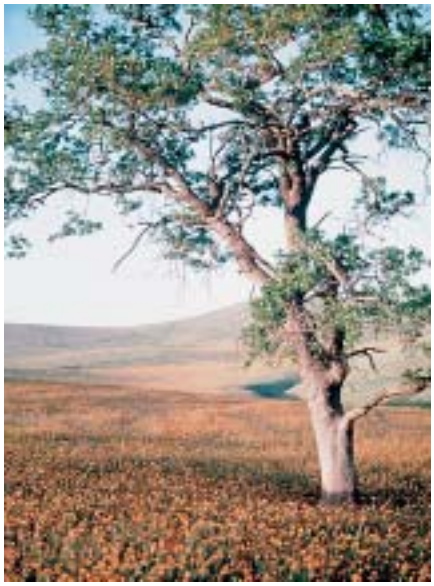
ACCOMPLISHMENTS

- Awarded more than $18 million in Year 1 to improve levees on 50 Delta islands while $14.6 million was invested in special projects like ecosystem and levee restoration for water quality and flood protection
- Efforts thus far to improve Delta levees have led to better water quality protection, enhanced habitat conditions, fewer requests for emergency funds and less acres of land flooded

DELTA LEVEE FLOOD COSTS

POST DISASTER ASSISTANCE COSTS AND ACRES FLOODED





SUMMARY OF PROGRESS AND BALANCE

As this year's report indicates, the CALFED Bay-Delta Program has made significant progress during its first year of implementation. State and federal CALFED agencies have secured and allocated more than $500 million in its first year, primarily from state bond funds. Key programs, such as ecosystem restoration, groundwater storage and recycling are meeting or exceeding their funding and program commitments. Milestones have been achieved in many key program areas, and tangible results of some projects already can be seen.

The following is a brief description of the status of each program element:

- **Storage**. Efforts to improve the use of groundwater storage are ahead of schedule, with $74 million provided to local agencies this year for planning and implementation of groundwater projects. The CALFED agencies signed agreements with local partners for Sites Reservoir and Los Vaqueros Expansion planning studies. Evaluation of a potential new off-stream storage reservoir at Sites and exploration of an In-Delta storage facility have missed some interim milestones, but increased funding in future years would allow planning studies for these projects to be completed on schedule. Studies of the expansion of Los Vaqueros Reservoir and Shasta Reservoir have also missed interim milestones due to lack of funding.
- **Conveyance**. Planning and design for installation of permanent fish barriers and other modifications in the Clifton Court Forebay are on track, and plans to increase periodic pumping are still on schedule. Although construction of the Tracy Fish Test Facility was delayed by six months due to the lack of funds, the project is back on course and expects to remain on schedule. However, the lack of funding has delayed a planned intertie between the State Water Project and the Central Valley Project near Tracy and the San Joaquin Flood Control Project.
- **Transfers**. The program is on track. Year 2 of implementation will focus on coordinating and streamlining the water transfer process and establishing the Water Transfer Information Clearinghouse.
- **Water Use Efficiency**. Efforts to define "appropriate measurement" of water usage, certify urban Best Management Practices and refine quantifiable objectives for water use efficiency are proceeding on schedule. More than $13 million in grants and loans was awarded for 65 projects in 2001, but participation in the loan program has been less than expected.
- **Ecosystem Restoration**. The program is on track, with over $150 million allocated in year 1 primarily from state and local funds as part of the "Single Blueprint" for ecosystem restoration and regulatory commitments. This is in addition to approximately $270 million of early implementation projects financed by the federal Bay-Delta Act and Category 3 funds in the prior years.
- **Environmental Water Account**. The EWA provided 287,000 acre-feet of water for environmental purposes during its first year of operation for Endangered Species Act purposes without reducing allocations to farmers and cities while meeting the commitments provided under the biological opinions (ESA) not to reduce water. The EWA expects to have Tier 3 water available for unforeseen emergencies in Year 2.

- **Watershed Management**. Progress has been made on outreach and technical assistance to local communities, with more than $18 million awarded this year to 54 grant recipients for watershed projects.
- **Drinking Water Quality**. Five early implementation projects—Bay Area Blending/Exchange, Veale-Byron Tract, Real-Time Water Quality Monitoring, Salinity/Selenium, and Delta Contaminant Sources/Load—are moving forward. About $20 million in grant funding is expected to be awarded for water quality projects in spring 2002.
- **Levees**. More than $18 million was awarded in Year 1 for levee maintenance on 50 Delta islands, while $14.6 million was invested in special projects for ecosystem, and levee restoration, water quality, flood protection and beneficial reuse and emergency response/preparedness. Although levee maintenance funding was available, the program is not funded at a level that allows progress toward Delta levee restoration. Efforts to improve all Delta levees to a base level of protection (Public Law 84-99 standard) are behind schedule, as are a planned Delta levee risk assessment and risk management plan, the Suisun Marsh levee program, and the dredge material reuse plan.
- **Science**. The Science Program conducted peer review for large projects and the EWA, conducted scientific workshops, provided oversight for the Delta Cross Channel investigations, and developed a framework for performance measures.
- **Program Oversight and Coordination**. This program element initially received adequate funding, but the state's hiring freeze and other general fund reductions will require the Program's oversight and coordination activities to be scaled back significantly. These activities include: regional coordination and implementation, environmental justice and other public outreach efforts, legal and litigation support, budget coordination and integration, finance planning and program tracking.

YEAR 1 CONCLUSION

In its first full year of implementation, the CALFED Bay-Delta Program moved forward aggressively to carry out the goals and objectives of the August 2000 Record of Decision. While many Program actions are just getting under way, significant progress has been made in every program area, but particularly those supported by state bond funds, including Groundwater Storage, Environmental Water Account, Ecosystem Restoration and Conveyance, and by federal Title XVI funds for water recycling. The Surface Storage, Levee, Water Quality, Science and Watershed Management Programs also made substantial progress at reduced funding levels.

YEAR 2 AND BEYOND

In year 2 (fiscal year 2001-'02), the Governor and the Legislature have contributed $508 million in funding for the Program, of which $62.6 million is from the state's general fund. Congress has approved $30 million in funding in the Energy and Water Development appropriations to support the goals of the Bay-Delta Program. Although the state and federal appropriations signal continued involvement and support in the effort, a larger amount of funding is required to meet the commitments across all program areas. Progress in Year 2 also will be impacted by a $20 million general fund reduction in the state CALFED budget and the moratorium on state hiring. These constraints on the ability to secure adequate staff and financial resources will translate into further delays in some program elements.

WE ALL DEPEND ON THE BAY-DELTA

The Bay-Delta provides drinking water for 22 million people. It supports California's trillion-dollar economy, including its $27 billion agricultural industry, and local homes and infrastructure. It is the largest estuary on the west coast—home to 750 plant and animal species—and it supports 80 percent of the state's commercial salmon fisheries.

DEFINING THE BAY-DELTA CONFLICT

California's Bay-Delta is an ecosystem in trouble:

- Straining under dual roles as critical habitat and water project crossroads, the Bay-Delta is in decline from decades of competing demands
- Today, it no longer functions as a healthy ecosystem or as a reliable source of water
- Several species—including Chinook salmon and steelhead trout—are in decline or endangered
- Water supplies are increasingly unreliable, jeopardizing the world's sixth-largest economy and 5 million acres of highly productive agricultural lands
- Water quality is degraded, making it difficult and expensive to meet drinking water standards

RESOLVING THE CONFLICT

The CALFED Bay-Delta Program is a cooperative effort involving more than 20 state and federal agencies. The Program will be implemented in stages over the next 30 years to solve California's environmental and water problems.

IMPLEMENTATION PRIORITIES INCLUDE:

- Apply independent scientific review and adaptive management to all major activities with accurate and frequent reports to the public
- Conduct early and continuous agency, stakeholder and public involvement
- Maintain a balanced and integrated Program
- Support local and regionally based strategies to achieve the Program's goals
- Develop performance standards and milestones for each program element
- Meet milestones and commitments in the Bay-Delta Plan

AN UNPRECEDENTED SCOPE AND VISION

- Strong commitment to independent scientific review, planning and tracking

- A coordinated approach by more than 20 state and federal agencies

- Eleven major program elements supporting multiple objectives

- Extensive public and local involvement in shaping each program element

- Funded projects in multiple watersheds encompassing more than 40,000 square miles—more than 70 percent of California's land

CALFED BAY-DELTA PROGRAM TIMELINE

December 1994
Bay-Delta Accord

November 1996
Prop 204 Funds Approved by Voters

March 2000
Prop 13 Funds Approved by Voters

June 2000
Framework Announced

July 2000
Year 1 Funding
State $516.4 million
Federal $56.2 million
Other $221.6 million

July 2000
Programmatic Environmental Document Finalized (EIS/EIR)

August 2000
Science Program Established

August 2000
Record of Decision Signed; CALFED Program Implementation Begins

July 2001
Year 2 Funding Begins
State $508.0 million
Federal $81.4 million
Other $262.8 million

November 2004
Major Decision and Review Points for Storage, Water Quality and Water Use Efficiency Elements

Completion of Stage 1 – First Seven Years
Foundation for Long Term Program Direction Completed

The CALFED Bay-Delta Program is a comprehensive collaborative effort that will take 30 years or more to complete.

Anderson Cottonwood Irrigation District Fsh Passage Improvement Project

SHAPING THE SOLUTION THROUGH PARTNERSHIPS

Extensive and sustained levels of public involvement have shaped every aspect of the CALFED Bay-Delta Program.

Partnerships with local communities and groups are being forged to combine resources, share knowledge and resolve problems at the local, regional and state level.

Merced River Restoration Project:

"You redesign the river, you restore it to a more naturally functioning (state), and hopefully you need less water to make the system work the way it's supposed to—everybody wins."
—Chris Robinson, General Partner Robinson Cattle Company

Potential Sites Reservoir Project:

"Local needs are going to be met first, you're going to have input as to how this is going to happen. We have a chance now to say what it is we want, what it is we need, and I think we darn well better get out and do that."
—Mary Wells, Farmer Sites, California

Upper Yuba River Studies Program:

"...In (Nevada) county, we have seized the opportunity that CALFED gave us. They've given us a lot of support and put a lot of money into the collaborative decision-making process in our own backyard."
—Elizabeth Martin, Nevada County Board of Supervisors Chairwoman

ACTIVITIES THAT SUPPORT PARTNERSHIPS

- Scoping Meetings
- Technical Workshops
- The Newly Formed Bay-Delta Public Advisory Committee and Related Work Group Meetings
- Media Events
- Annual Reports
- Newsletters
- Coordinating with Local Groups
- Environmental Justice
- Brochures
- Briefing Materials
- Comprehensive Web Site http://calfed.ca.gov
- Toll-free Public Information Telephone Line (800) 700-5752
- Presentations
- Technical Documents
- Tribal Participation
- Science Consortium

June 2001 Policy Group Meeting

Environmental Justice Workshop in Richmond

Delta Cross Channel News Coverage

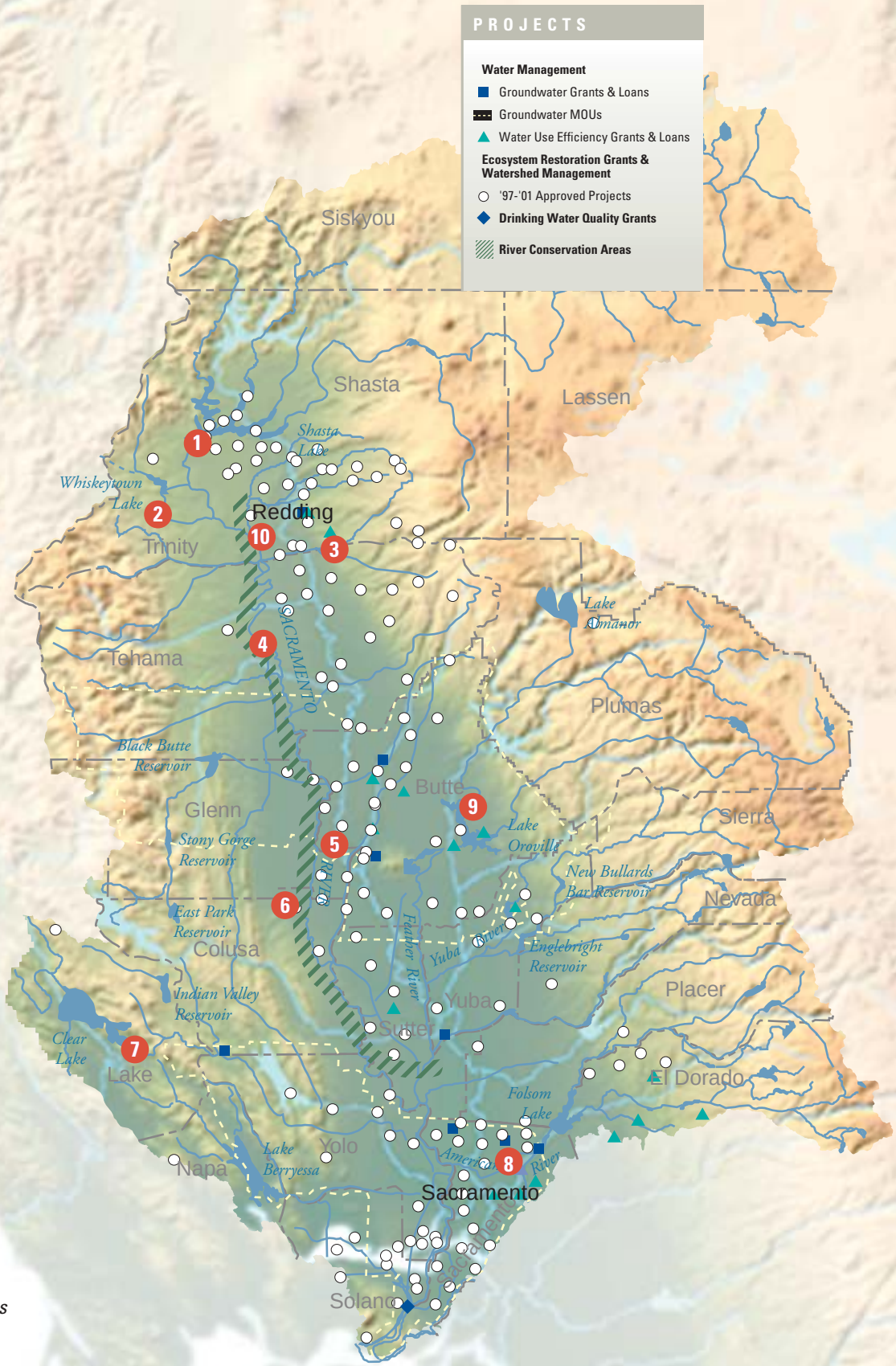
REGIONAL VIEW

The CALFED Agencies are investing in collaborative regional projects that provide local benefits while helping achieve overall Program objectives and commitments.

THE CALFED BAY-DELTA REGIONS

- The Sacramento Valley Region
- The Delta Region
- The Bay Region
- The San Joaquin Valley Region
- The Southern California Region

The Regional View provides information on regional CALFED Program highlights and accomplishments. Locally based projects have been funded through individual and collaborative resources by the CALFED agencies and stakeholders.



HIGHLIGHTS:

1. *Evaluate Enlargement of Shasta Dam*
2. *Saeltzer Dam Removal on Clear Creek*
3. *Battle Creek Fish Passage & Dam Removal*
4. *Improve Red Bluff Diversion Facilities*
5. *Sacramento River Conservation Area* (Continuous riparian corridor along 222 miles of the Sacramento River between Keswick and Verona)
6. *Sites Reservoir Memorandum of Understanding and Studies*
7. *Mercury Assessment—Clear Lake & Cache Creek*
8. *Lower American River Corridor Management Plan*
9. *Butte Creek Fish Passage and Dam Removal*
10. *Anderson-Cottonwood Irrigation District Fish Screens and Ladders*

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Participated in an agreement with local partners to study the 1.8 million acre-foot Sites Reservoir off-stream storage project
- Funded over 120 ecosystem restoration efforts to date, including 47 projects to improve fish passage on rivers and streams. A small dam that blocked salmon passage on Clear Creek was removed, and CALFED agencies provided more than $10 million for a state-of-the-art fish screen and ladder project for the Anderson-Cottonwood Irrigation District
- Dedicated more than $2 million for nine water use efficiency grants to help farmers irrigate more effectively and conserve water
- Signed agreements with six local water agencies to study groundwater storage improvements
- Funded over 10 groundwater loans and grants for recharge construction and storage pilot projects
- Worked with local stakeholders to determine feasibility of introducing Chinook salmon and Steelhead to the Upper Yuba River
- Began to assemble and interpret salmon data for individual tributaries and the Sacramento mainstem with the goal of relating trends in threatened groups to restoration actions

THE SACRAMENTO VALLEY REGION:

- Provides 60 percent, or 22 million acre-feet of the water flowing into the Delta
- Offers major habitat/spawning ground for several threatened and endangered fish species
- Contributes significantly to the state's farmlands and agricultural output

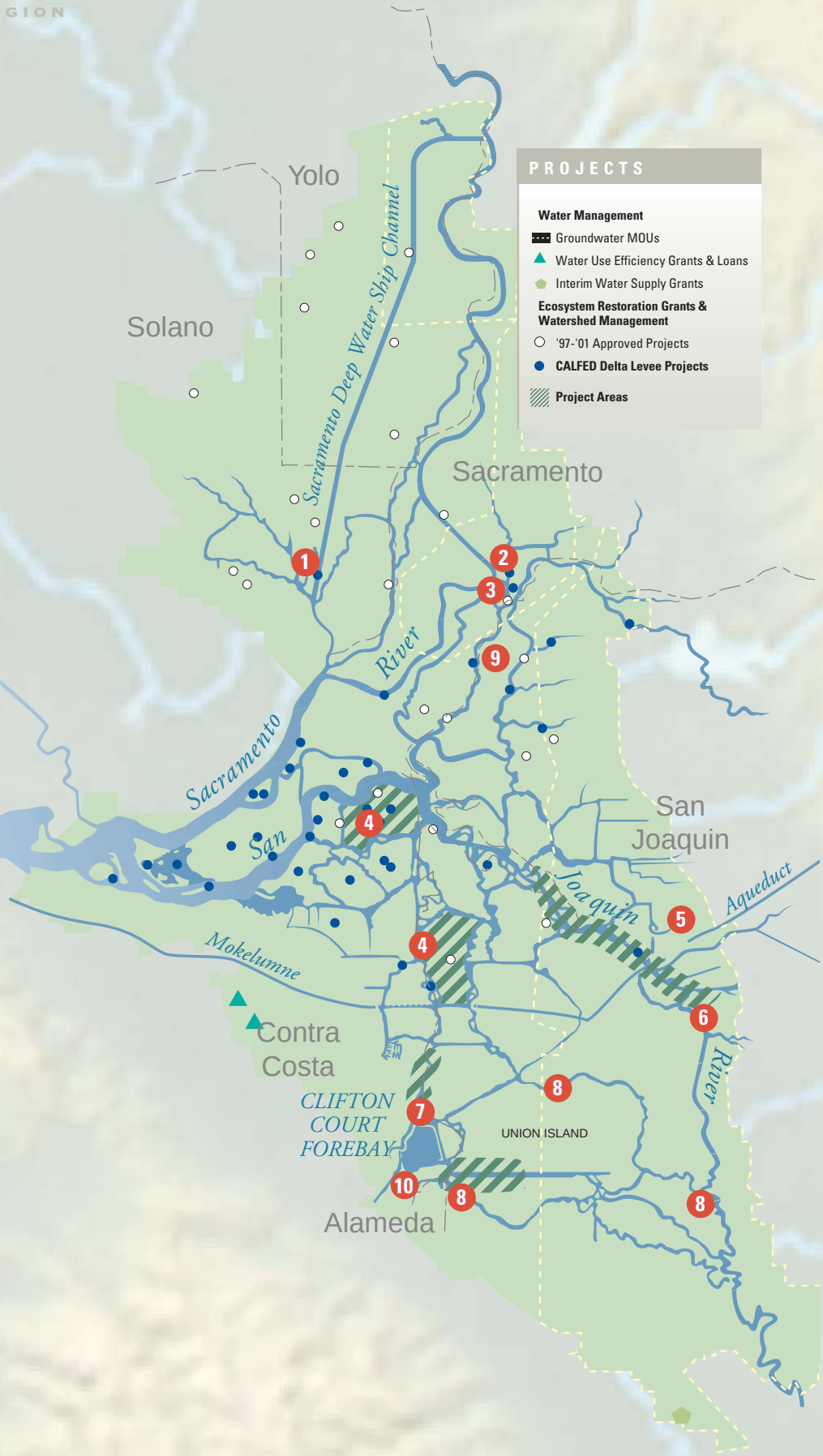
Red Bluff Diversion Dam

ACID Fish Screening and Ladders

YEAR 1 FUNDING
43 projects
$12,587,729.00

REGIONAL VIEW

THE DELTA REGION



HIGHLIGHTS:

1. *Yolo Bypass Habitat Restoration*
2. *McCormack Williamson Tract Habitat Restoration*
3. *Delta Cross Channel and Through Delta Facility Operational Studies*
4. *In Delta Storage (Potential) "Delta Wetlands Project"*
5. *Sub-Surface Drip Irrigation on Asparagus*
6. *Stockton Deep Water Dissolved Oxygen Investigation*
7. *Clifton Court Intake and Fish Screens*
8. *Fish & Flow Control Structures (Temporary / Permanent) & Dredging*
9. *Staten Island Restoration*
10. *Tracy Fish Test Facility*

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Invested $18 million to improve Delta levees on over 50 Delta islands resulting in better water-quality and flood protection and greatly enhanced habitat conditions
- Funded over 70 ecosystem restoration projects to date, including in-channel island restoration, fish screens, and riparian habitat restoration
- Funded seven watershed projects including flood protection, creek restoration strategies and stewardship
- Planned for construction of the Tracy Fish Test Facility to provide data on the effectiveness of screening facilities in the South Delta
- Worked on the South Delta Improvement Program to install permanent fish and flow control structures and modify Clifton Court Forebay to eventually increase periodic pumping to 10,300 cubic feet per second
- Began environmental documentation for North Delta Flood Protection improvements
- Explored options for addressing drainage problems in the Delta
- Continued work on the Delta Dredge and Reuse Strategy
- Continued work on developing practical ways to slow, stop, and reverse island subsidence
- Successfully implemented and reviewed an Environmental Water Account, designed to manage water operations so that they both improve water supply reliability and protect targeted fish species
- Initiated several studies:
  - Feasibility of a through-Delta diversion facility to the Sacramento River
  - Feasibility of alternatives for In-Delta storage
  - Operational studies to address fishery and water quality impacts
  - Approval to begin dissolved oxygen studies in the Stockton Deep Water Ship Channel
  - Sources and concentrations of contaminants in the Bay-Delta water
  - Evaluate factors influencing outcomes and impediments in restoring breached islands in the Delta
  - Identify mercury distributions and contamination patterns in the Delta

THE DELTA REGION:

- Up to 47 percent of the Delta's flow is diverted in dry years from the Delta for beneficial uses
- Supports 750 plant and animal species including 120 fish species
- Diversion point for irrigation water to California's $27 billion agricultural industry
- Contains the largest wetland habitat in the western United States

Delta Cross Channel

Tracy Fish Facility

YEAR 1 FUNDING
19 projects
5,916,272.00

REGIONAL VIEW

THE BAY REGION

HIGHLIGHTS:

1. Petaluma Marsh Expansion
2. Napa River Floodplain Restoration Project
3. Cullinan Ranch Project
4. Suisun Marsh Management and Restoration
5. Suisun Marsh Fish Screens
6. Los Vaqueros Expansion
7. Guadalupe River Restoration
8. San Pablo Baylands
9. Bay Area Blending/Exchange

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Completed a Memorandum of Understanding with local partners and initiated studies to evaluate the expansion of Los Vaqueros Reservoir
- Began studies on the feasibility of a San Luis Reservoir bypass to improve the quality of water imported to the Bay Area from the state and federal water projects
- Signed a Memorandum of Understanding and started feasibility studies for the Bay Area Blending and Exchange Study aimed at improving water quality by blending and exchanging source waters among local providers
- Hosted the first CALFED Bay-Delta Program Science Conference to engage the scientific community and the public. Co-sponsored and participated in the October 2001 State of the Estuary Conference
- Contributed to funding 40 ecosystem restoration projects to date, including Napa River floodplain restoration, fish screens in Suisun Marsh and improvements to the Petaluma Marsh
- Allocated nearly $2.5 million to provide rebates to Bay Area households that install ultra low-flow toilets
- Funded over five groundwater loans and grants for recharge construction and storage pilot projects
- Reviewed and supported plans for establishing a coordinated wetlands monitoring program in the Delta
- Reviewed and recommended future directions for the Bay Program of the Interagency Ecological Program, a premier aquatic monitoring program in the Bay
- Reviewed and began revision and multi-agency coordination of water quality monitoring conducted by the Interagency Ecological Program
- U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, Department of Fish and Game, Department of Water Resources and Suisun Resource Conservation District established a charter to begin work on a single blueprint for ecosystem restoration of Suisun Marsh

THE BAY REGION:

- The Bay and Delta form the west coast's largest estuary
- Drains more than 40 percent of the state's water
- Is America's fourth largest metropolitan area and location of Silicon Valley

Suisun Marsh

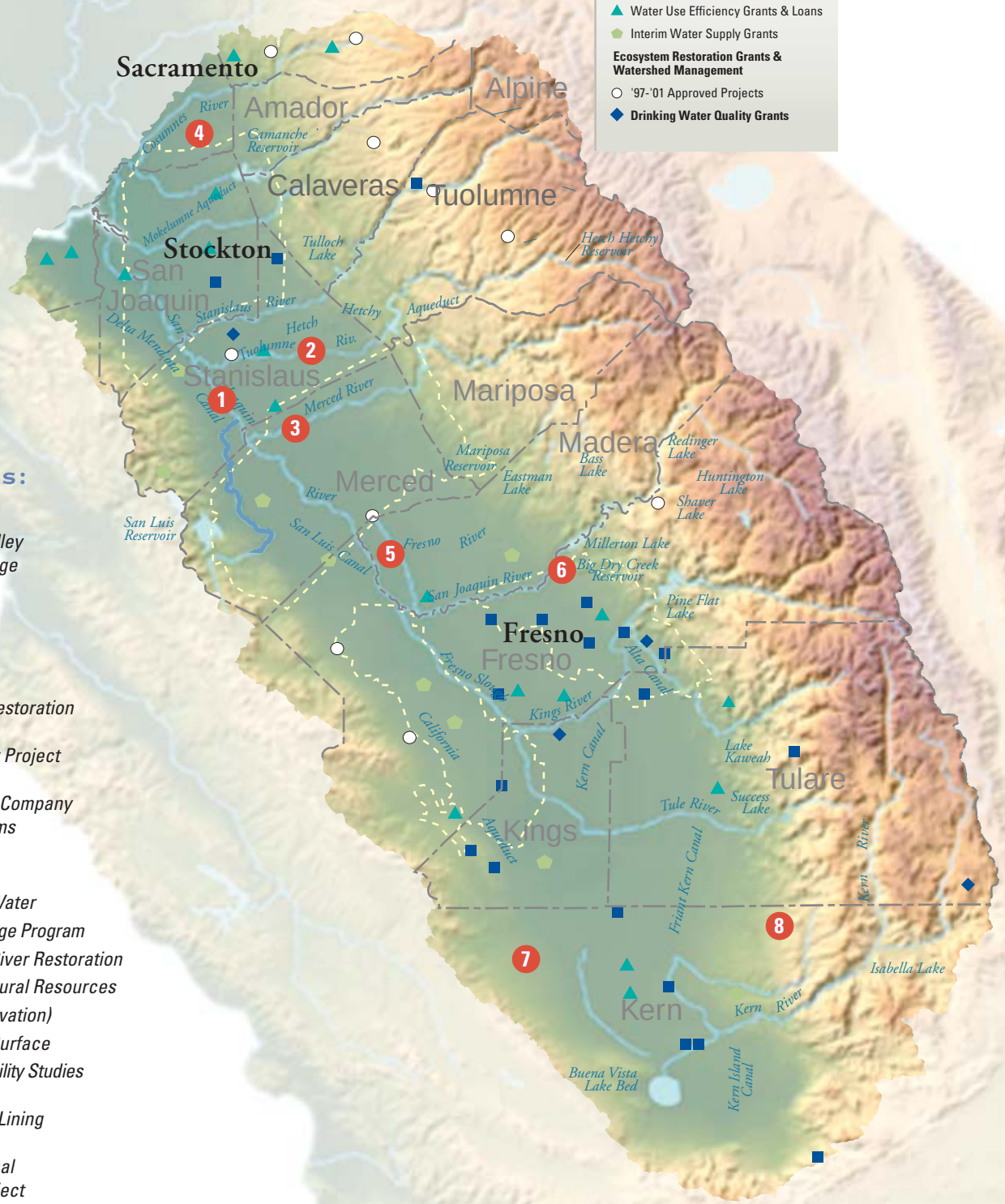
Los Vaqueros Reservoir

Recharge Pond

YEAR 1 FUNDING
17 projects
$5,916,354.00

REGIONAL VIEW

THE SAN JOAQUIN VALLEY REGION



HIGHLIGHTS:

1. San Joaquin Valley Regional Drainage Management
2. Tuolumne River Restoration
3. Merced River Restoration
4. Cosumnes River Project
5. Columbia Canal Company Irrigation Systems Improvement
6. • Friant-MWD Water Quality Exchange Program
   • San Joaquin River Restoration (Friant and Natural Resources District Conservation)
   • San Joaquin Surface Storage Feasibility Studies
7. Lost Hills Canal Lining
8. Kern-Tulare Canal Automation Project

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Funded 51 ecosystem restoration projects, including improving riparian and stream habitats on the San Joaquin, Merced, Tuolumne and Stanislaus rivers
- Approved $3.4 million in funding for 11 water use efficiency projects to help farmers save water
- Began feasibility studies for the lower San Joaquin River flood protection improvements
- Launched the Salinity and Selenium Project to build a pilot plant to treat agricultural drainage and produce water for reuse
- Signed agreements with four local water agencies to study groundwater-storage improvements
- Explored water quality exchange partnership between Friant Water Users Association and Metropolitan Water District
- Funded over 10 groundwater loans and grants for recharge construction and storage pilot projects
- Began evaluation of selenium effects from San Joaquin River discharges to the Delta
- Implemented state and federal dry year programs to provide over 200,000 acre-feet to water short areas

THE SAN JOAQUIN VALLEY:

- Produces 45 percent of the nation's fruits and vegetables
- Is the drainage for seven major Sierra Nevada rivers draining into it
- Anticipates population to double over the next 20 years

Water Use Efficiency for Irrigation

Merced River Restoration

Agriculture Production

YEAR 1 FUNDING
39 projects
$24,423,489.00

REGIONAL VIEW

THE SOUTHERN CALIFORNIA REGION

PROJECTS

Water Management

- Groundwater Grants & Loans
- Groundwater MOUs
- Water Use Efficiency Grants & Loans
- Interim Water Supply Grants

Watershed Management

- Approved Projects

HIGHLIGHTS:

1. *Water Conservation Recycling and Groundwater Desalination in San Diego*

2. *Conservation Rebate Programs*
   - *Commerical*
   - *Industrial*
   - *Institutional*

3. *Landscape Water Consumption Controller*

4. *Chino Basin Water Use Efficiency*

5. *Storm Water Augmentation Study*

6. *Wetland Restoration on the Santa Ana River*

7. *Desalination Research and Innovation Partnership (DRIP)*

8. *Water Quality Exchange Partnership with Friant Water District (MWD/Friant)*

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Signed agreements with five local water agencies to study ways to improve groundwater storage
- Provided nearly $1.9 million for 14 water use efficiency programs in urban areas
- Began a desalination research and innovation partnership at Metropolitan Water District resulting in three desalting facilities and final design plans for three more
- Funded over 20 groundwater loans and grants for recharge construction and storage pilot projects
- Funded restoration of wetlands and river systems to protect endangered and threatened fish in Southern California, reducing the demand for water from the Bay-Delta ecosystem
- Implemented state and federal dry year programs to provide approximately 80,000 acre-feet to water short areas

BENEFITS FLOW SOUTH AND NORTH

Implementation of CALFED's projects in the Southern California Region will:

- Produce more reliable, higher-quality water statewide
- Reduce the need for additional water from the Bay-Delta to meet the growing needs of the region
- Enhance ecosystem restoration in the Bay-Delta and in the region
- Expand groundwater storage and pumping capability
- Use water efficiently through conservation, recycling and water management

SOUTHERN CALIFORNIA REGION:

- Inland Southern California is among the fastest growing regions in North America
- Southland water users conserve 480,000 acre-feet of water a year and produce 230,000 acre-feet of recycled water—reducing the demand for additional Bay-Delta water and meeting the needs of a growing population
- Southern California's large contribution to the state's economy depends on a more reliable water supply, some of which is imported from the Delta

High Efficiency Clothes Washer Program

Santa Ana River in Riverside,
Arundo and Wetlands Improvement

YEAR 1 FUNDING
36 projects
$20,973,705.00

A BALANCED APPROACH

Launched in the summer of 2000 with broad public support, the CALFED Bay-Delta Program Record of Decision is a balanced, comprehensive approach to reduce conflicts over limited water supplies and to address California's long-term water needs.

The Bay-Delta Program is unique in its approach to solving California's environmental and water problems. The Bay-Delta solutions address four interrelated, interdependent program areas concurrently.

RESOURCE MANAGEMENT GOALS

Four resource management goals are implemented through 11 major program elements.

PROGRAM ELEMENTS

- Science
- Water Management
- Storage
- Conveyance
- Water Use Efficiency
- Water Transfers
- Ecosystem Restoration
- Environmental Water Account
- Watershed Management
- Drinking Water Quality
- Levee System Integrity

Fish are Dyed for Delta Cross Channel Studies

CALFED SCIENCE PROGRAM

Integrating world-class science and peer review into every aspect of the Bay-Delta Program, CALFED is developing the best scientific information possible to guide decisions and evaluate actions that are critical to its success.

GOALS

- To establish a body of knowledge that is unbiased, relevant, authoritative and integrated, while communicating that knowledge to the scientific community, agency managers, stakeholders and the public
- Establish protocols and incorporate independent peer review into all Program activities
- Develop science-based performance measures for each CALFED program

ACCOMPLISHMENTS

- Developed directed research processes to identify and provide independent peer review of CALFED research needs
- Developed plans for each program element in order to incorporate peer review into activities
- Initiated and compiled performance measures within and across individual programs
- Hosted the first CALFED Science Conference to engage the scientific community and the public and co-sponsored and participated in the October '01 State of the Estuary Conference
- Funded The Estuary Newsletter's publication of a Delta Cross Channel fact sheet
- Convened expert panel and conducted first annual review for the Environmental Water Account, as well as several scientific workshops and program reviews
- Supported and integrated the activities of the independent ecosystem science board, interagency ecological program, EWA science advisors and other independent peer review efforts
- Completed or solicited for several monitoring plans to identify existing needs
- Began applying adaptive management within the program
- Published two reviews of ecosystem restoration indicators
- Led the effort to develop an interagency Science Consortium to support common efforts to investigate and share information
- Continued operational studies to address fishery and water quality impacts of Delta Cross Channel (DCC)

Turlock Irrigation District Project Event

State of the Estuary Conference
Posterboard Session

PRIORITIES

- The Science Program's priorities include:
  - Conduct adaptive management experiments
  - Build population models for at-risk species
  - Establish integrated science programs in complicated field settings
  - Compare relative effectiveness of different restoration strategies
  - Understand intertwined implications of all CALFED actions
  - Advance the scientific basis of regulatory activities
  - Develop performance measures
  - Coordinate and extend existing monitoring
  - Increase relevant scientific analyses of existing data

Delta Cross Channel Studies

PROGRAM REVIEWS AND WORKSHOPS

The different goals of science must move forward together, integrated across the other program elements that spread across five regions with different needs.

ADAPTIVE MANAGEMENT

Interdisciplinary Knowledge of Critical Unknowns	Integrating Scientific Knowledge into Management	Monitoring	Broad Communication of Science Knowledge and Scientific Activities
PROGRAM REVIEWS ■ Mercury Program Review ■ Stockton Ship Channel Program Review ■ Delta Cross Channel Program Review ■ Upper Yuba Program ■ Environmental Water Account Annual Review	**WORKSHOPS** ■ Sacramento Splittail: Life History ■ EWA and Salmon ■ Common Data Management Strategy ■ Hydrodynamics and Salinity Response to Levee Breaches in Suisun Marsh ■ Large Scale Adaptive Management ■ EWA and Delta Smelt ■ Adaptive Management Concepts (ISB) ■ State of Estuary Conference ■ Instream Flow Modeling/Biological Links (Bay-Delta Modeling Forum)	**DEVELOP MONITORING PLAN** ■ Wetlands ■ Reviews of Ecosystem Restoration ■ Indicators ■ Aquatic Monitoring Plan ■ Terrestrial Amphibian Monitoring Plan ■ Performance Measure Protocol	**INVITED PRESENTATIONS** ■ State Water Association ■ Environmental Water Caucus ■ Bay Conservation and Development Commission ■ Department of Water Resources Environmental Specialists Conference ■ Technical Committee for Dredge Re-use ■ Educational Workshops on Watershed Restoration and on Monitoring ■ American Association for Advancement of Science: Organized "Science and Water Management in California" ■ California Division of the American Fisheries Society ■ Managing Rivers for Biodiversity ■ Annual IEP Workshop ■ State of Estuary Conference

Water Flow Measurements

WATER MANAGEMENT

Recognizing that no single strategy will resolve California's water and environmental problems, the CALFED Program encompasses an array of projects and approaches to expand water supplies and ensure efficient use of the resource.

Working with local and regional agencies, the Program has identified actions that could increase California water supplies by nearly 3 million acre-feet over the next 10 years—enough water to meet the needs of 6 million families annually.

GOALS

- Maximize use of available water supplies through conservation, water recycling and water quality improvements
- Increase the operational flexibility of water systems at the state, federal and local level through strategic improvements in conveyance and storage capacities
- Develop groundwater and surface water storage projects to boost flexibility and provide additional supplies for agricultural, urban and environmental use

ACCOMPLISHMENTS

- Allocated approximately $200 million from Proposition 13 and other sources to local agencies for water supply, water quality and water use efficiency projects throughout the state
- Initiated or continued planning studies of 5 surface storage projects: Shasta enlargement; Sites Reservoir; In-Delta Storage; Los Vaqueros Expansion and Upper San Joaquin Storage. Completed Memoranda of Understanding with local partners for Sites Reservoir and Los Vaqueros Expansion planning studies
- Completed 16 Memoranda of Understanding or Letters of Intent with 30 local agencies throughout the state to study groundwater storage improvements
- Supported the Governor's Advisory Drought Planning Panel in developing a *Critical Water Shortage Contingency Plan*. Implemented state and federal dry year programs that provided nearly 300,000 acre-feet to areas suffering from water shortages
- Developed and implemented a comprehensive operations plan to coordinate actions and improve water supply reliability

Shasta Lake and Dam

PUBLIC AND PEER REVIEW

- Overview in progress by stakeholders and review through the state's drought contingency plan and the Water Management Strategy Evaluation Framework

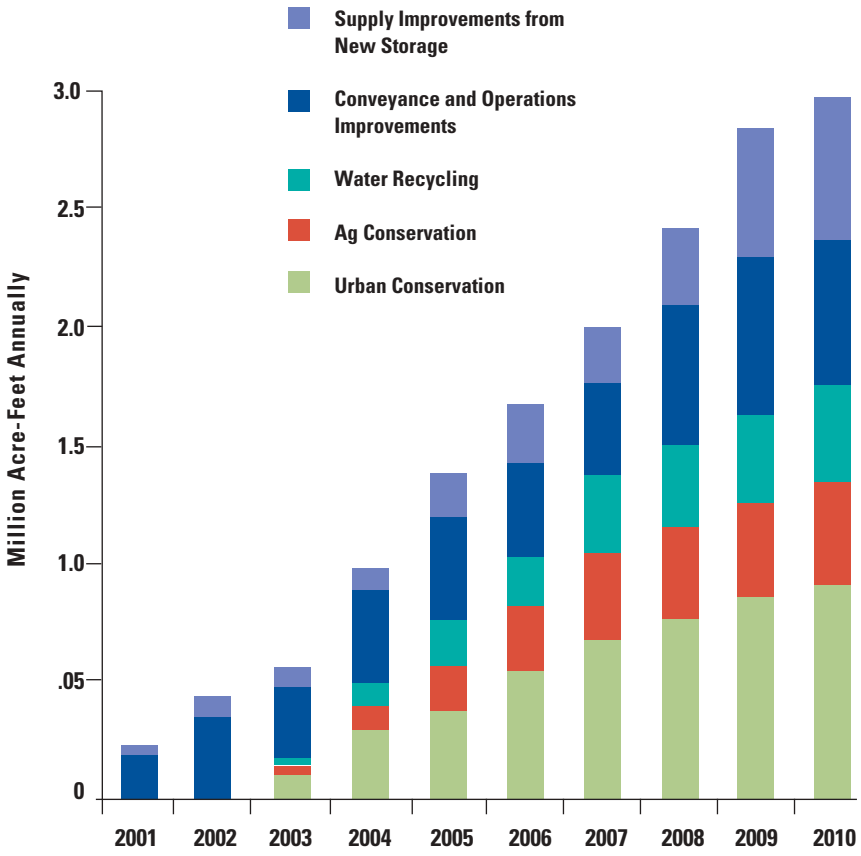
PERFORMANCE MEASURES

- Performance is tracked by overall increases in yield and the flexibility of California's water system through the four primary elements that contribute to the strategy: **storage**, **conveyance**, **water use efficiency**, and **water transfers.**

Water Reclamation

Urban Conservation

POTENTIAL IMPROVEMENTS IN WATER SUPPLY RELIABILITY



POTENTIAL IMPROVEMENTS IN WATER SUPPLY RELIABILITY

WATER MANAGEMENT ACTION

Water Use Efficiency (first 7 years)	**Acre-Feet/year**
Urban Conservation	520,000 to 690,000
Agricultural Conservation	260,000 to 350,000
Water Reclamation	255,000 to 310,000
Potential Increase from Water Use Efficiency	**Up to 1.4 Million Acre-Feet/year**
Conveyance and Operational Improvements	**Up to 600,000 Acre-Feet/year**
Includes: SWP Pumping of (b)(2) Upstream Releases, Export/Inflow Ratio Flexibility, Increased Banks Pumping Plant Capability, Joint Point of Diversion and San Luis Bypass	
Potential Increase from New Storage	**600,000 to 900,000 Acre-Feet/year***
Total Potential Increase in Water Supply Reliability from Water Use Efficiency, Conveyance and Operations Improvements and New Storage	**Up to 2.9 Million Acre-Feet/year**

POTENTIAL NEW STORAGE CAPACITY*

CALFED Storage Projects	**Acre-Feet**
Enlarge Shasta Lake	300,000
Enlarge Los Vaqueros Reservoir	400,000
In-Delta Storage	250,000
Sites Reservoir	1,800,000
Upper San Joaquin River Storage	250,000 to 700,000
Groundwater Storage and Conjuctive Use	500,000 to 1,000,000
Total Potential New Storage	**4.5 Million Acre-Feet**

Storage Capacity versus Water Supply Reliability

Total increase in storage capacity is not a direct measure of increased water supply reliability. The estimate of increased water supply reliability provided here is the quantity of water expected to be available annually from new storage during extended dry periods.

New storage capacity would also be used to provide improved flows and reduced effects of diversions for fish, improved water quality, and improved conjunctive management of surface and groundwater.

San Luis Reservoir

STORAGE

By pursuing more water storage capacity in both surface reservoirs and underground aquifers, CALFED seeks not only to meet the needs of California's growing population, but also to provide much-needed flexibility to improve water quality and restore ecosystems.

GOALS

- Provide financial and technical assistance to implement 1/2 million to one million acre-feet of new, locally managed groundwater storage
- Pursue specific opportunities for new off-stream storage sites and expansion of existing on-stream storage sites as identified in the Record of Decision

ACCOMPLISHMENTS

- Continued the Integrated Storage Investigations (ISI) to coordinate studies and evaluate the costs and benefits of specific storage projects in terms of water quality, water supply reliability and ecosystem restoration
- Completed an agreement with local partners to study the Sites Reservoir off-stream surface storage project and Los Vaqueros Reservoir expansion
- Continued study of Shasta Reservoir expansion
- Initiated feasibility study of alternatives for In-Delta storage
- Completed 16 Memoranda of Understanding or Letters of Intent with 30 local agencies throughout the state to study groundwater storage improvements
- Provided grants and loans to local agencies totaling $74 million to assist in planning and implementing groundwater projects. The projects will improve statewide operational flexibility and increase water supply reliability

PUBLIC AND PEER REVIEW

- Proposition 13 Groundwater Conjunctive Management Advisory Teams
- Public workshops, partnerships and stakeholder meetings

PERFORMANCE MEASURES

- Storage is part of the larger Water Management Strategy, and will increase the availability of water and improve the flexibility of the system. Performance measures for this program element may include new storage capacity implemented, changes in groundwater levels and groundwater overdraft status.

O'Neill Forebay

NEXT STEPS

- Develop North of the Delta feasibility analysis, project formulation and environmental documentation
- Determine how to pursue In-Delta storage options based on feasibility study results
- Begin Alternatives report for Los Vaqueros Expansion
- Undertake Enlargement feasibility study for Shasta Lake
- Negotiate Memorandum of Understanding and initiate planning study for Upper San Joaquin Storage
- Award $106 million under Proposition 13 and AB 303 for feasibility studies and pilot projects for Conjunctive Water Management
- Develop and implement projects for fish passage improvement

CALFED BAY-DELTA PROGRAM STORAGE SCHEDULE

Note: Schedules subject to change

POTENTIAL STORAGE OPTIONS

Storage is part of the larger water management strategy, and will increase the availability of water and improve the flexibility of the system.

POTENTIAL STORAGE PROJECTS

Shasta Enlargement
An increase in Shasta storage capacity by 300,000 acre-feet would increase the pool of cold water available to maintain lower Sacramento River temperatures for fish and improve water supply.

Sites Reservoir
This project, with a capacity of up to 1.9 million acre-feet, could enhance water management flexibility in the Sacramento Valley and provide storage and operational benefits for other CALFED programs including fisheries protection, Delta water quality, and the Environmental Water Account.

In Delta Storage
An In-Delta Storage facility of 250,000 acre-feet would provide both fishery benefits and enhanced water project flexibility.

Los Vaqueros Enlargement
Expanding Los Vaqueros reservoir from 100,000 acre-feet to 500,000 acre-feet would provide water quality and water supply reliability benefits to Bay Area water users. Storage in this location could also be integrated into the Environmental Water Account.

San Joaquin Storage
Additional storage between 250-700 thousand acre-feet in the upper San Joaquin River watershed would be designed to contribute to restoration of and improve water quality for the San Joaquin River and facilitate conjunctive water management and water exchanges that improve the quality of water.

Clifton Court Forebay

CONVEYANCE

Moving water through the Bay-Delta as efficiently as possible will increase the system's flexibility and boost ecosystem health, water quality and levee stability.

GOALS

- Modify the existing conveyance system for water supply, water quality, flood protection and ecosystem benefits
- Improve pumping operations of the State Water Project to increase reliability and enhance fish protection

ACCOMPLISHMENTS

- Maintain schedule for construction of the Tracy Fish Test Facility (TFTF) to provide data on the effectiveness of screening facilities in the South Delta
- Study plan for through-Delta diversion facility for Sacramento River
- Continue work on the South Delta Improvement Program (SDIP) to install permanent fish and flow control structures, and modify Clifton Court Forebay to eventually increase periodic pumping to 10,300 cubic feet per second
- Begin environmental documentation for North Delta Flood and Ecosystem Restoration Control improvements
- Begin feasibility studies for lower San Joaquin River flood protection improvement study
- Continue ongoing work on temporary barriers

PUBLIC AND PEER REVIEW

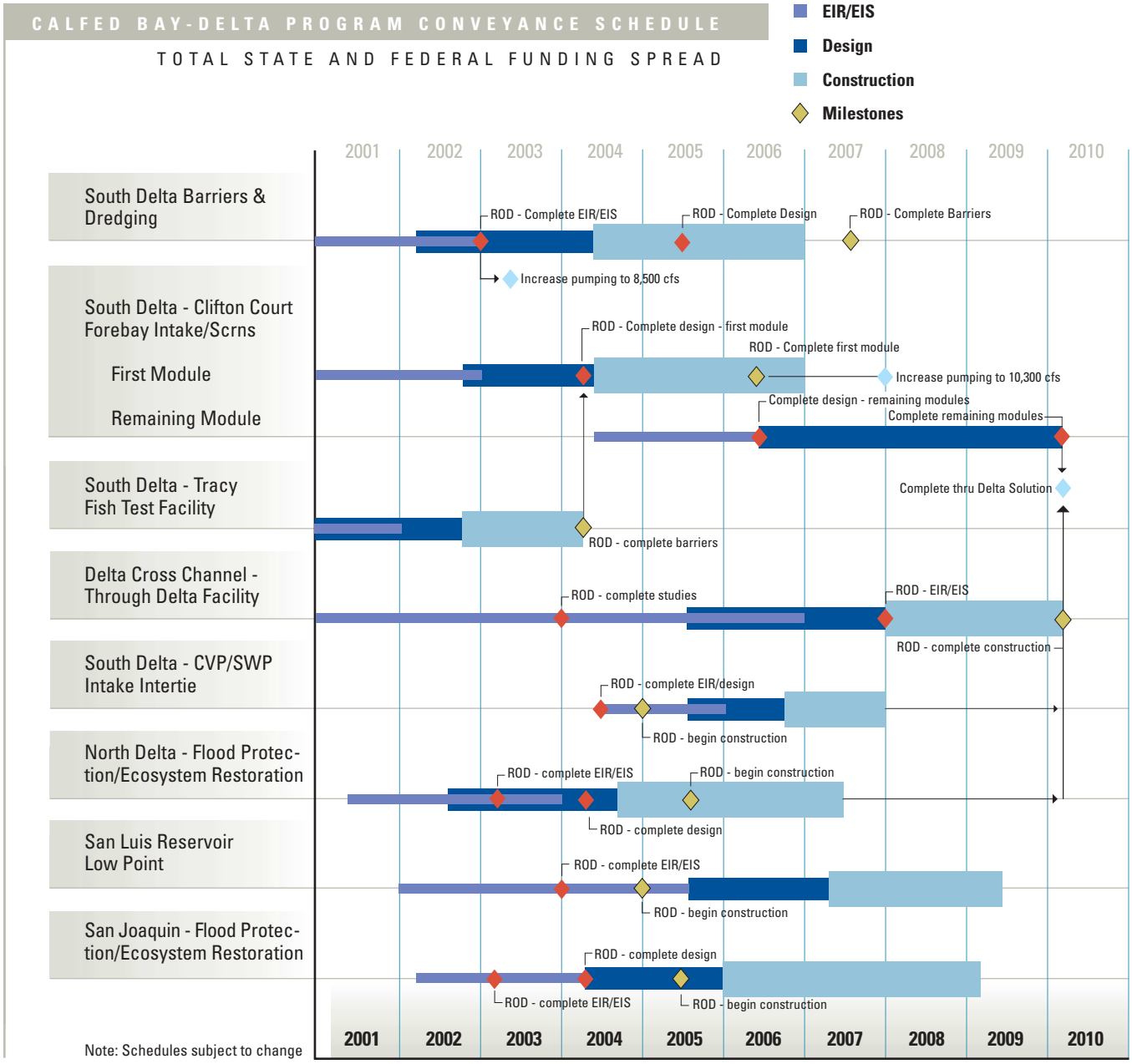
- Program review by North and South Delta Improvements Teams and North Delta Agency Team
- Monitoring by North Delta Stakeholders Group and Mokelumne-Cosumnes Watershed Alliance
- Regular reporting of progress on conveyance improvements at Delta Protection Commission Public Meetings

PERFORMANCE MEASURES

- Performance measures for the conveyance program may include overall survival rates for fish entering the Tracy Fish Test Facility. Increased survival rates mean fewer fish are being lost as a result of water project pumping. Other performance measures may be drinking water quality, flood protection, and ecosystem values.

NEXT STEPS

- Continue work on draft EIR/S and permit for South Delta
- Start construction at TFTF
- Begin testing and research for Through-Delta facility (TDF) ladders
- Continue second year studies at Delta Cross Channel and TDF
- Continue draft EIR/S for North Delta Flood Protection and Ecosystem Restoration
- Develop work plan and funding on Lower San Joaquin flood protection
- Begin scoping for San Luis Low Point Project
- Initiate study of CVP/SWP Intertie



WATER USE EFFICIENCY

Through a competitive process that will fast-track water conservation and recycling projects, the CALFED Bay-Delta Program aims to generate significant water supply, water quality and ecosystem benefits in the short term.

GOALS

- Reduce water demand through "real water" conservation
- Improve water quality by altering volume, concentration, timing and location of return flows
- Improve ecosystem health by increasing in-stream flows where necessary to achieve targeted benefits

ACCOMPLISHMENTS

- Awarded $13.3 million in water conservation grants and loans for 65 projects in 2001—including 37 urban and 28 agricultural projects. These projects were geographically diverse and were matched with over $9.1 million in local funding
  - Urban projects range from a voucher incentive program for clothes washers to more efficient landscape water programs
  - Agricultural projects range from canal lining to buried drip irrigation
  - Funded projects will collectively save 30,000 acre-feet of water, improve water quality, and save energy
- Awarded two water recycling grants
- Established 60 out of 200 quantifiable objectives for agricultural water use efficiency actions (on track to develop 30 more by 2003)
- Convened Independent Review Panel to assist in developing a definition of appropriate water measurement
- Successfully negotiated cooperative agreement with the Agricultural Water Management Council, U.S. Bureau of Reclamation and California Department of Water Resources to support locally cost-effective agricultural water conservation
- Laid groundwork for establishing a Water Use Efficiency Public Advisory Committee, approach to WUE monitoring and Urban BMP Certification
- Developed draft agricultural WUE milestones as part of overall assurances framework
- Forged an effective water use efficiency team with key CALFED agencies

PUBLIC AND PEER REVIEW

- Independent Review Panel for Agricultural Measurement
- Agricultural Measurement Ad-hoc Group
- Urban Certification Ad-hoc Group

PERFORMANCE MEASURES

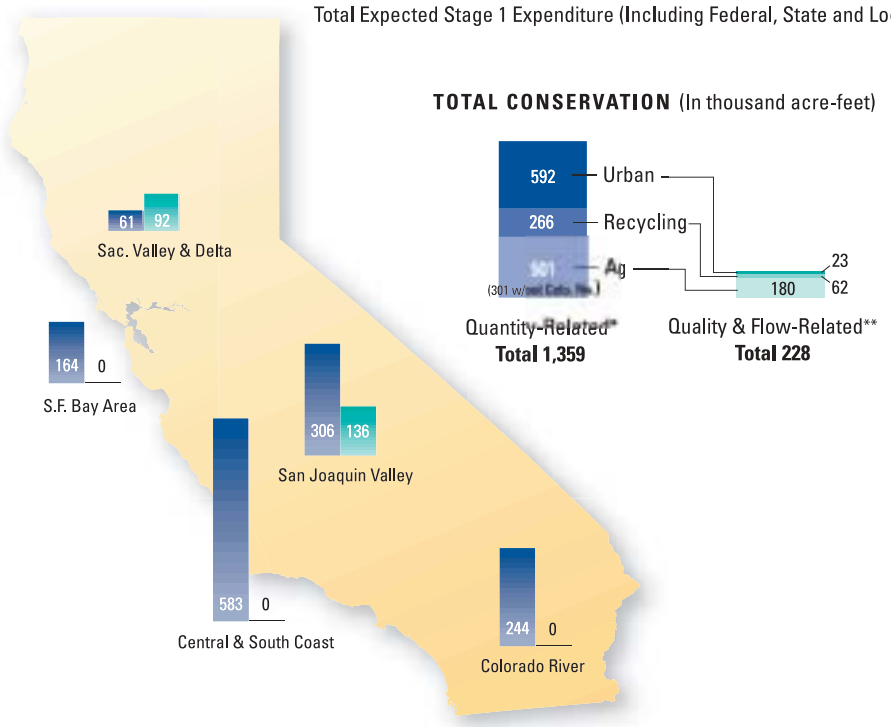
- Credible WUE performance data will be crucial to future discussions of overall program linkage and balance. WUE performance indicators will range from simple administrative measures to relatively complex measures of the outcome of WUE projects. These are expected to include the evaluation of progress toward meeting agricultural quantifiable objectives and similar measures for urban WUE such as changes in per capita water use, volume of in-stream flows and in-stream water quality.

NEXT STEPS

- Develop 2002 WUE Proposal Solicitation (grant) Process
- Seek advice from Water Use Efficiency Public Advisory Committee to better define WUE priorities, grant criteria, approaches to research and technical assistance and assurances processes (including ag milestones and urban BMP Certification)
- Work with Science Program to continue development of effective approaches to WUE monitoring, adaptive management, peer review and performance indicators (see figure)
- Refine quantifiable objectives
- Continue refining WUE implementation approach, including:
  - Finalize Agricultural WUE milestones through broad stakeholder involvement
  - Complete work of Independent Review Panel on appropriate measurement
  - Continue progress on Urban BMP Certification

EXPECTED STAGE 1 (2000–2007) WATER CONSERVATION BY TYPE AND REGION

Total Expected Stage 1 Expenditure (Including Federal, State and Local funds): **$2.96 billion**



*Quantity-Related Conservation is accomplished by reducing flows to salt-sinks or to evaporation.

**Quality & Flow Related Conservation is accomplished by rerouting flows to improve water quality and in-stream flows.

WATER TRANSFERS

Through development of an effective water transfer market, the CALFED Program aims to stretch existing water supplies by promoting transfers from willing sellers to buyers while protecting other water users, local economies and the environment.

GOALS

- Develop a more effective water transfer market
- Protect water rights, the environment and local economic interests
- Streamline the approval process of state and federal agencies for water transfers

ACCOMPLISHMENTS

- Supported the Governor's Advisory Drought Planning Panel in developing a Critical Water Shortage Contingency Plan. Implemented state and federal dry year programs that provided nearly 300,000 acre-feet to areas suffering from water shortages
- Developed "ON TAP" web site, an on-line water market information resource for water transfers
- Convened a stakeholder panel and drafted recommendations to streamline the transfer process
- Initiated technical review of "carriage water" requirements governing the transfer of water through the Bay-Delta
- Working to define transferable water and carriage water requirements

PUBLIC AND PEER REVIEW

- Monitor web site with Water Transfer Information Clearinghouse
- Review by CALFED agencies and State Water Resources Control Board Water Transfer Work Group

PERFORMANCE MEASURES

- Performance measures may include: number of proposed water transfers; ratio between water transfers proposed and approved; volume of water being transferred; reduced time needed to approve proposed transfers; and total regional water supply.

http://ontap.ca.gov

NEXT STEPS

- Establish fair and equitable "wheeling" terms
- Establish shared place-of-use between Central Valley Project & State Water Project
- Encourage coordination of multiple transfer within single approval processes
- Identify standard mitigation measures suitable for addressing socio-economic and cumulative impacts.
- Continue refinements and improvement to "ON TAP" web site
- Establish Water Transfer Clearinghouse

ECOSYSTEM RESTORATION PROGRAM

Ecosystem restoration actions help restore and improve the health of the Bay-Delta system for all native species while reducing its water management constraints.

GOALS

- Recover 19 at-risk native species and contribute to the recovery of 25 additional species
- Rehabilitate natural processes related to hydrology, stream channels, sediment, floodplains and ecosystem water quality
- Maintain and enhance fish populations critical to commercial, sport and recreational fisheries
- Protect and restore functional habitats, including aquatic, upland and riparian, to allow species to thrive
- Reduce the negative impacts of invasive species and prevent additional introductions that compete with and destroy native species
- Improve and maintain water and sediment quality to better support ecosystem health and allow species to flourish

ACCOMPLISHMENTS

- Established a "single blueprint" or framework for coordinating resource management, conservation and regulatory actions between state and federal agencies
- Since 1995, CALFED agencies and stakeholders have funded 326 ecosystem projects for $336 million including projects funded through the Anadromous Fish Restoration Program of the CVPIA. In 2001, $195 million was spent on activities including ecosystem water quality, ecosystem science, strategy planning, and 74 individual ecosystem restoration projects selected through a public solicitation process. Specific highlights include:
  - Began fish passage improvements along 182 river miles of three streams (Battle, Butte and Clear creeks) and three rivers (Cosumnes, Guadalupe and Mokelumne)
  - Installed 64 fish screens to protect fish at diversion points throughout the Bay-Delta system
  - Conducted 23 studies at $26.5 million on the effects of dissolved oxygen, mercury, pesticides, selenium and dissolved organic carbon on the Bay-Delta system
- Launched the Environmental Water Program with steering committee
- Continued to develop scopes of work for the Upper Yuba River Studies Program
- Facilitated approval of dissolved oxygen studies in the Stockton Deep Water Ship Channel in conjunction with the science program
- Began revised Ecosystem Restoration Implementation Plan for the Delta
- Developed Draft Stage 1 Implementation Plan for the Ecosystem Restoration Program

Butte Creek

PUBLIC AND PEER REVIEW

- Agency Stakeholder Ecosystem Team provides technical oversight
- Stakeholder and public oversight achieved through Ecosystem Roundtable
- Independent Ecosystem Science Board comprised of 12 independent scientists monitors scientific integrity of program
- Coordination and integration with other CALFED programs and agencies

PERFORMANCE MEASURES

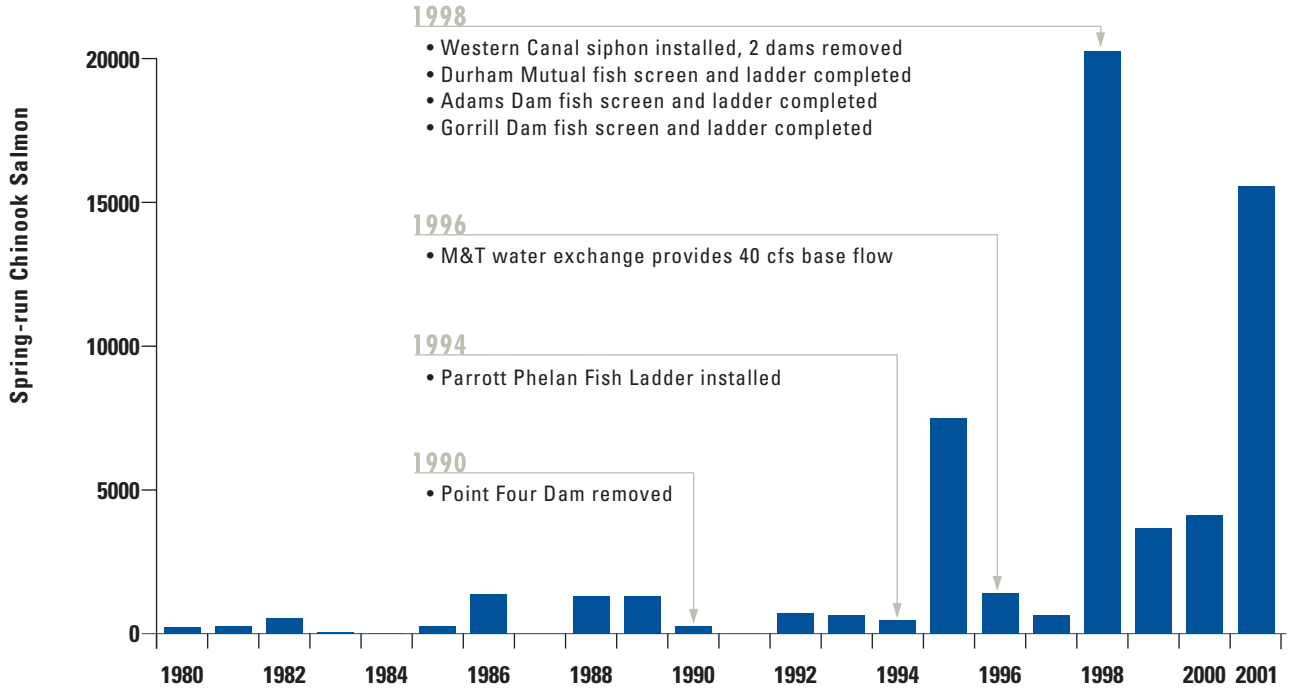
- Performance measures for the Ecosystem Restoration Program are being developed and include: number of funded restoration projects to benefit at-risk fish species; number of restoration projects funded; acres of enhanced or protected habitat leading to improved ecological processes; population trends for listed fish species dependent on the Delta, and percentage of the volume of diverted water screened.

NEXT STEPS

- Continue strategic planning and program management
- Continue project implementation
- Integrate science and initiate special studies

BUTTE CREEK PROGRESS

This graphic shows an increase in Spring-run Chinook salmon population trends on the Butte Creek that correlate with ecosystem restoration activities.



Delta Cross Channel Studies

ENVIRONMENTAL WATER ACCOUNT

Providing water at critical times is key to meeting ecosystem needs. Through its Environmental Water Account, CALFED is obtaining water and the flexibility to benefit the environment and minimize water supply impacts on cities, farms and businesses.

GOALS

- Reduce conflicts between environmental needs and water project operations by providing water and flexibility
- Better protection for fish and habitats at critical times by providing water in a flexible manner other than through strict requirements
- Increase water supply reliability by allowing projects to meet environmental and water supply needs at the same time

ACCOMPLISHMENTS

- Provided 287,000 acre-feet for environmental purposes without reducing allocations to farmers and cities
- Received commitments that water supplies would not be further reduced because of Endangered Species Act requirements

PUBLIC AND PEER REVIEW

- First annual panel review and scientific evaluation conducted to examine how much water was acquired, how it was used and whether it had an impact
- Ongoing review of EWA provided by scientific advisors
- Program review by CALFED member agencies as part of a cooperative management agreement

PERFORMANCE MEASURES

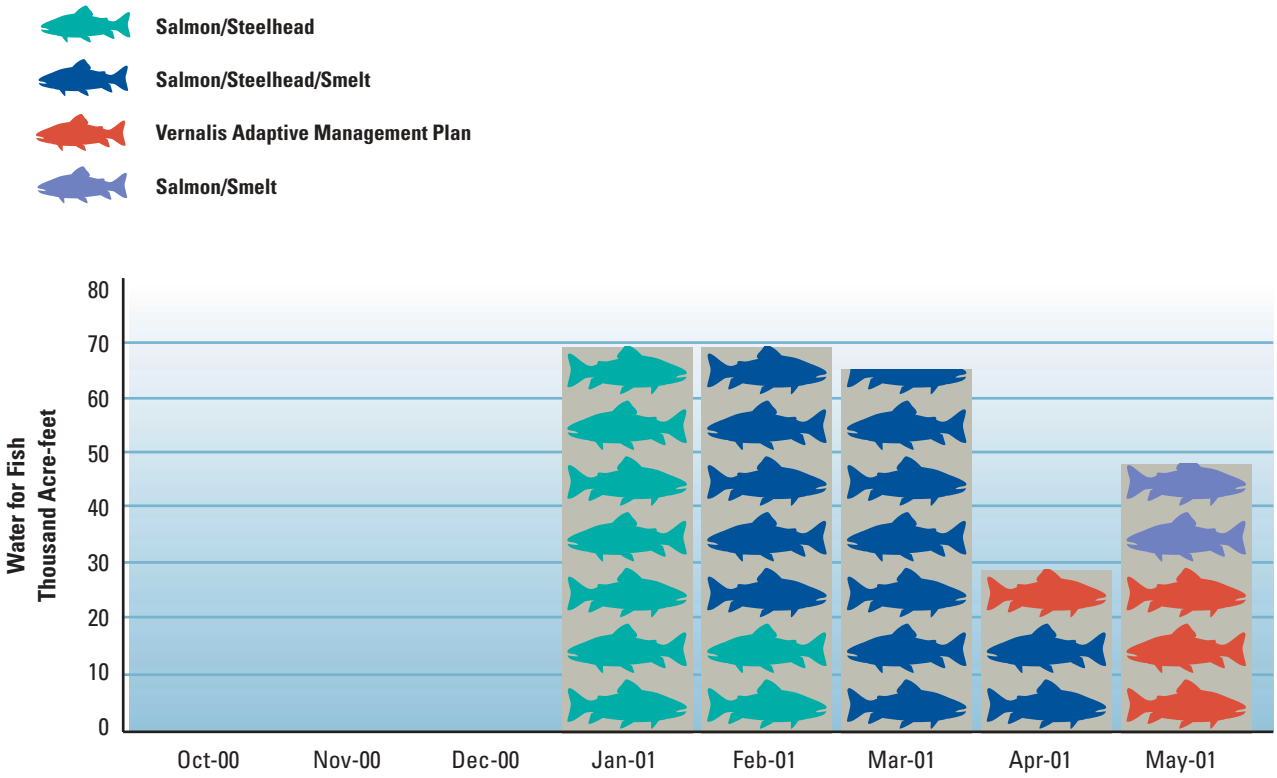
- Performance measures for the EWA may include: estimated effect on fish population levels because of use of EWA water and export reductions (by species); take of fish at the state and federal pumps; and estimated amount of EWA water used to help supplement reduced pumping and protect fish.

NEXT STEPS

- Acquire 255,000 acre-feet of water and source shift water in Year 2
- Continue to use acquired water for Endangered Species Act and other protection
- Complete long-term environmental documentation for EWA
- Acquire Tier 3 reserve water
- Continue work on acquisitions for the EWA in 2002

ENVIRONMENTAL WATER ACCOUNT USAGE

WATER YEAR 2000-2001



WATERSHED MANAGEMENT

By providing financial and technical assistance for local watershed programs, the CALFED Program aims to support watershed management efforts that reduce water quality problems, restore and protect watershed functions and improve water supply reliability.

The program also seeks to foster local leadership by encouraging landowners, community members, environmental organizations and local public agencies to come together on watershed projects.

GOALS

- Assist local programs that help achieve overall Program objectives
- Promote integration and collaboration between programs, efforts and people at the watershed level

ACCOMPLISHMENTS

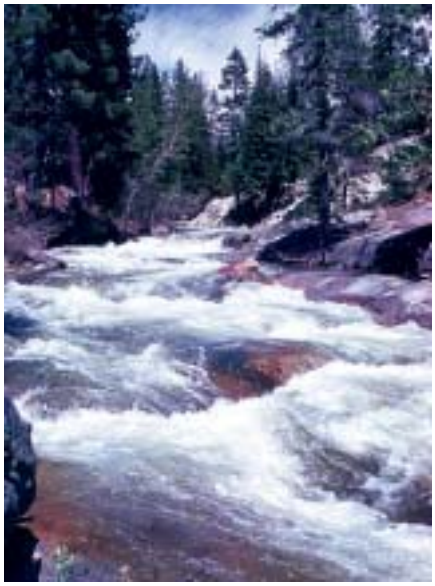
- Developed 2001 grant program for locally based watershed projects, funding 54 projects at approximately $18 million
- Provided funding in coordination with the Ecosystem Restoration Program to support projects in more than 50 watersheds
- Developed a Memorandum of Understanding to ensure better coordination between state and federal watershed programs

PUBLIC AND PEER REVIEW

- Formed Interagency Watershed Advisory Team to improve access to and effectiveness of technical assistance to local watershed groups
- All projects reviewed by Watershed Selection Committee that includes 17 representatives from member agencies, stakeholders and the academic community

PERFORMANCE MEASURES

- Performance measures for the Watershed Program may include: total number of watershed assessments completed or supported through the Program; total number of new local watershed management programs formed or supported by the Program; number of workshops and training sessions supported by CALFED for local and tribal governments; and improved performance of watersheds, as measured by level, timing and variability of flows.



NEXT STEPS

- Continue to implement a grant program using $10 million Prop 13 monies administered jointly with the State Water Resources Control Board
- Deliver expanded technical assistance from state agencies
- Support Watershed Working Group outreach efforts to further education and information to local communities
- Continue to define comprehensive set of performance measures and develop annual implementation plan

CALFED WATERSHED PROGRAM

DRINKING WATER QUALITY

The Drinking Water Quality Program is unique in addressing water quality from source to tap in order to improve drinking water supplies for the 22 million Californians who rely on the Bay-Delta watershed for all or part of their water.

GOALS

- Improve the quality of water at its source
- Seek advancements in treatment technology
- Find innovative ways to manage and deliver water
- Support health effects research and perform comprehensive monitoring and assessment of Bay-Delta drinking water quality

ACCOMPLISHMENTS

- Implemented seven projects in 2001 totaling $26 million
  Projects Include:
  - The Salinity and Selenium Project to build a pilot plant to treat agricultural drainage and produce water for reuse
  - The Bay Area Blending/Exchange study aimed at improving water quality by blending and exchanging source waters among water utilities
  - Studies of the sources and concentrations of contaminants in Bay-Delta water
  - Studies on Veale and Byron Tracts exploring options for addressing drainage problems in the Delta
  - Water Quality Exchange for Friant-MWD
  - Desalination Research and Innovation Partnership (MWD)
- Developed solicitation and selection process to fund additional drinking water quality projects
- Facilitated approval of Memorandum of Understanding among key state and federal agencies to coordinate actions to address water quality problems
- Negotiated approval of a Memorandum of Understanding between state agencies and local partners for Bay Area Blending/Exchange Studies
- Conducting first grant process
  - Threshold and Science reviews completed
  - 28 proposals to continue through the review process

PUBLIC AND PEER REVIEW

- Review by the Delta Drinking Water Council and Drinking Water Constituents Work Group

PERFORMANCE MEASURES

- Performance measures may include: water quality as indicated by monitoring and testing at key points; frequency or occurrence of advanced treatment technologies at local treatment facilities, and consumer water rates.

NEXT STEPS

- Help form new Drinking Water subcommittee that will operate under the new advisory group
- Make project recommendations for SWRCB Proposition 13 Nonpoint Source grants
- Issue Drinking Water Quality Program grants and directed actions for Years 2 and 3
- Initiate demonstration scale projects for ultraviolet disinfection and regional desalination
- Initiate feasibility study for Bay Area Blending/Exchange
- Develop and implement a plan to meet Delta water quality standards for which the state and federal projects have responsibility

Flood Emergency Response

LEVEE SYSTEM INTEGRITY

With its focus on improving Bay-Delta levees, CALFED is acting to protect water supplies needed for the environment, agriculture and urban uses by reducing the threat of levee failure and seawater intrusion. Delta levees also protect major interstates, roadways, cities, towns, agricultural lands and environmental and aquatic habitat.

GOALS

- Improve levees to a higher standard for greater flood protection
- Improve emergency response capabilities
- Ensure levee maintenance and habitat needs are met
- Improve coordination of permit processes
- Develop adequate and reliable funding for levee maintenance

ACCOMPLISHMENTS

- Awarded more than $18 million in Year 1 to improve levees on 50 Delta islands while $14.6 million was invested in special projects like ecosystem and levee restoration for water quality and flood protection
- Continued work on Delta Dredge and Reuse Strategy
- Developed a Memorandum of Understanding between agencies on the management of the levee program with DWR and the Army Corp of Engineers being co-leads
- Developed a charter for the Suisun Marsh to more effectively integrate multiple uses into a single plan
- Continuing work to develop practical ways to slow, stop and reverse island subsidence

PUBLIC AND PEER REVIEW

- Levee work approved at the State Reclamation Board public meetings
- Levee Program coordinated with stakeholders and peers through the Delta Levees and Habitat Advisory Committee and the Levees and Channels Technical Team

Levee Breach

Funds for Delta levees result in fewer requests for emergency recovery funds and fewer acres flooded.

PERFORMANCE MEASURES

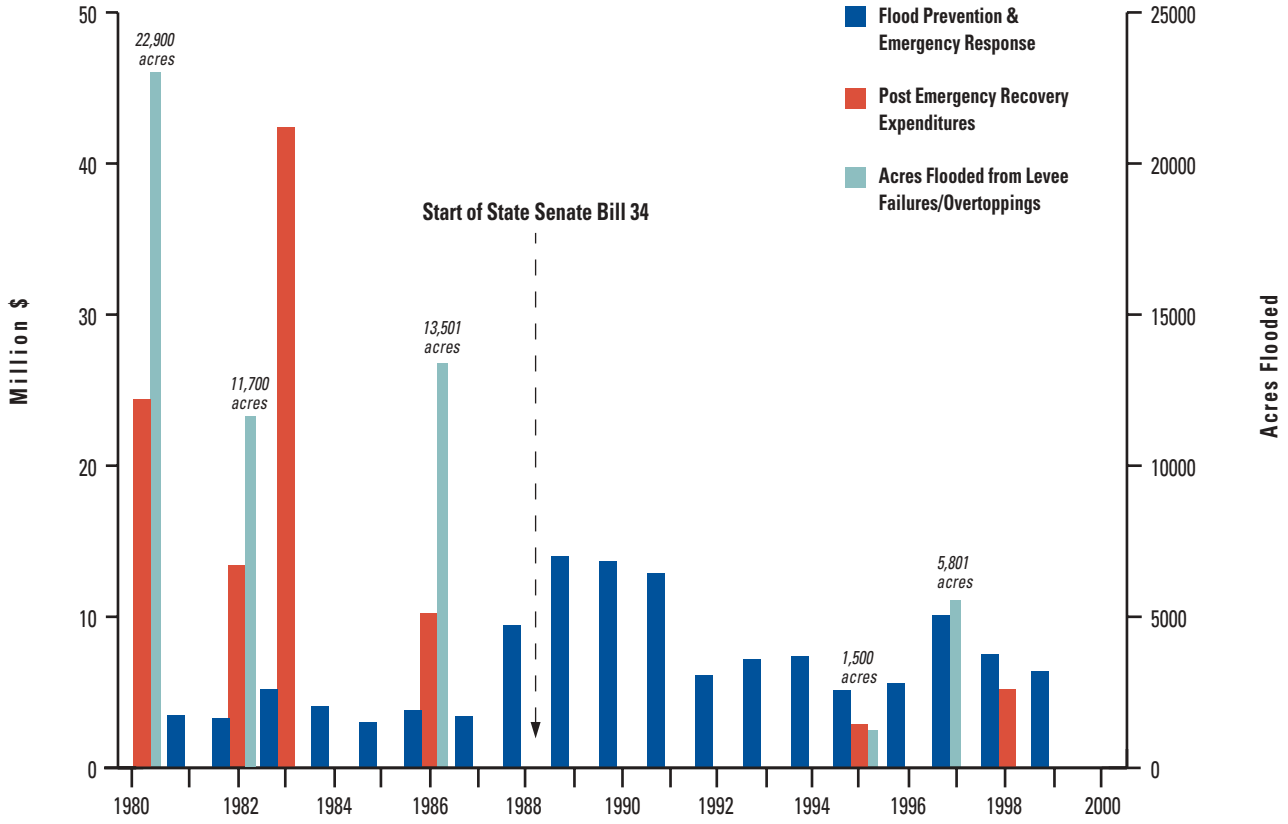
- Performance measures may include: number of levees improved to specific standards; emergency funding and flood response equipment secured and available; and acres and frequency of land flooded.

NEXT STEPS

- Support Levees Subvention and special projects programs
- Perform Risk Assessment
- Continue to refine program performance indicators
- Develop a Dredge Reuse Strategy
- Facilitate the Suisun Marsh Charter Process
- Plan for global climate changes
- Seek increased federal participation
- Continue regulatory coordination

DELTA LEVEE FLOOD COSTS

POST DISASTER ASSISTANCE COSTS AND ACRES FLOODED



Secretary of Resources Mary Nichols Meets With Media at the June 2001 Policy Group Meeting

program accountability and measuring success

The Bay-Delta Program brings a high level of public accountability and visible measures of success.

Performance measures are used to translate program goals and objectives into measurable benchmarks of success. They present information on conditions, trends and their significance. The Program uses performance measures to:

- Evaluate goals, progress and successes of restoration and management efforts
- Increase technical understanding of problems and trends in the Bay-Delta System
- Provide information that can help clarify management decisions
- Inform the public and policy makers about the progress of the program

goals

- Comprehensive project tracking
- Monitoring of each project's performance, cost and schedule
- Measurable progress to assure balance across all elements of the Program
- Monthly status information collected for every project

accomplishments

- Created and put in place a tracking system for evaluating and reporting on each individual program area
- Developed preliminary performance measures with ongoing development coordinated with the Science Program
- Crafted standard procedures for producing consistent data for each program area

example of program tracking information viewed from the web site

CALFED BAY DELTA PROGRAM
Delta Region

Project Title	Project Manager	Email	Phone Number
Tracy Fish Test Facility	Ron Brockman (USBR) Ron Ott (CALFED)		

Purpose of Project

The Tracy Fish Test Facility (TFTF) is being constructed as a state-of-the-art pilot program to test fish screen and salvage technologies, and more specifically fish sorting, handling, holding and transportation techniques preparatory to the design of the expanded Clifton Court Forebay and for expansion at Tracy.

Work Scope Summary

The work scope of this program requires the planning, design and construction of an improved fish processing facility which screens, hold, sorts, and transports a variety of fish species. A gravity line and a lift line operation are being tested with various fish salvage techniques.

Click Here for Detailed

Status of Work

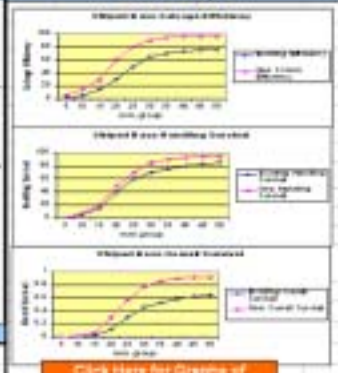
YEAR 1
A Project Management Plan was completed. A Draft Environmental Assessment/Initial Study was issued for public review and three workshops were conducted for comment from the public on this subject. Fishery Engineering Planes were developed. Numerous ongoing research studies related to Tracy Fish Test Facility were initiated for the advancement of necessary technologies. Two sheet pile tests were completed for determination of pile driving performance and noise/vibration characteristics. Approximately 80% of the final design of Tracy Fish Test Facility was completed.

YEAR 2
Continue research addressing the testing and evaluation of new facilities for fish screening, holding, sorting, and transportation in the South Delta. Begin Tracy Fish Test Facility construction, excavation, utility relocation and foundation dewatering; and order "critical path" mechanical equipment.

Progress Against ROD Milestones

TFTF has delayed construction start until May 02 in order to obtain necessary federal funding. Construction completion is now scheduled for January 04, afterwhich operational testing will begin. This will allow time to provide design information to Clifton Court to complete in Stage 1, but will delay their work by 6 months.

Technical Graphic



Click Here for Graphs of Technical Performance

Technical Performance Indicators

Indicator
Prevention of fish loss at pumps and survival of fish that enter the fish facilities to their return to their natural environment

Metric
Survival % of fish that enter the fish facilities

Target

Baseline Available
Yes

State Resources Secretary Mary Nichols; Department of Interior Deputy Chief of Staff Sue Ellen Wooldridge; and State Senators Jim Costa and Mike Machado at the June 2001 Policy Group Meeting

legislative actions in 2001

During 2001, both the California Legislature and the Congress considered several bills related to the Bay-Delta Program's objectives.

water transfers

- **SB 621 (*Costa*) water transfers** would revise the definition of "unused capacity" related to water transfers under specific conditions. This measure has passed the Senate and has been referred to the Assembly Committee on Water, Parks and Wildlife and to the Assembly Committee on Local Government.
- **SB 1029 (*Perata*) water transfers** would revise the definition of the term "fair compensation" related to specific circumstances related to water transfers, and would provide an avenue for filing complaints with SWRCB in that regard. This measure has been held in the Senate Committee on Appropriations.

groundwater management

- **AB 599 (*Liu*) Groundwater contamination: quality monitoring program (Chapter 522, Statutes of 2001)** requires the State Water Resources Control Board to integrate existing monitoring programs and design new program elements to establish a comprehensive statewide groundwater quality monitoring program and to report to to the Governor and the Legislature, by March 1, 2003, on a comprehensive groundwater quality monitoring program for the state.

water use efficiency

- **AB 331 (*Goldberg*) 2002 Recycled Water Task Force (Chapter 590, Statutes of 2001)** requires the Department of Water Resources to convene the 2002 Recycled Water Task Force to advise DWR in investigating opportunities for using recycled water in industrial and commercial applications and in identifying constraints to increasing the industrial and commercial use of recycled water. The bill requires DWR to report to the Legislature with recommendations by July 1, 2003. The Task Force would be funded by Proposition 13 (2000).
- **SB 672 (*Machado*) California Water Plan: urban water management plans (Chapter 320, Statutes of 2001)** requires the Department of Water Resources to include in the California Water Plan (DWR Bulletin 160 series) a report on the development of regional and local water projects, to include water recycling projects, that will improve water supplies to meet municipal, agricultural, and environmental water needs. This bill also requires urban water suppliers to describe the water management tools and options they use that will maximize resources and minimize the need to import water from other regions.

program governance

- **SB 1115 (*Costa*) The CALFED Bay-Delta Program** would create the CALFED Bay-Delta Commission in the Resources Agency to manage implementation of the Bay-Delta Program. This bill is in the Senate Committee on Agriculture and Water Resources.

program financing

- **AB 1602 (*Keeley*) California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002 (Chapter 875, Statutes of 2001)** places a $2.6 billion general obligation bond act on the March 2002 Statewide Primary Election ballot to authorize issuance of bonds to finance resource management programs, including $300 million to the Wildlife Conservation Board for habitat projects that promote recovery of threatened and endangered species. To be voted on in the March 2002 Primary Election.
- **SB 23 (*Costa*) CALFED funds: Bay-Delta Program (Chapter 7, Statutes of 2001)** provided Legislative certification that projects and purposes funded from the State General Fund in Fiscal Year 2000-01 are consistent with the July 2000 Bay-Delta Program Programmatic Environmental Impact Statement/Environmental Impact Report. This certification allowed use of $135 million in General Funds appropriated by the Budget Act of 2000.
- **SB 739 (*Peace*) Budget Act of 2001 (Chapter 106, Statutes of 2001)** appropriated funds to finance California State government for Fiscal Year 2001-02. The Budget Act appropriated $571.9 million ($81 million from the General Fund) to various State agencies to carry out the Bay-Delta Program.
- **HR 2311 (*Callahan*) Energy and Water Development Appropriations Act, 2002 (Public Law 107-66)** appropriated funds to the Department of the Interior and the US Army Corps of Engineers for Federal Fiscal Year 2002 for water development projects.

pending federal legislation

- **HR 3208 (Calvert) Western Water Enhancement Security Act** to authorize funding through the Secretary of Interior for the implementation of a comprehensive program in California to achieve increased water yield and environmental benefits, as well as improved water system reliability, water quality, water use efficiency, watershed management, water transfers, and levee protection.
- **HR 2404 (George Miller) California Water Quality and Reliability Act of 2001** to authorize federal agency participation and financial assistance for programs and for infrastructure improvements for the purposes of increasing deliverable water supplies, conserving water and energy, restoring ecosystems, and enhancing environmental quality in the State of California, and for other purposes.
- **S. 1768 (Feinstein) California Ecosystem, Water Supply, and Water Quality Enhancement Act of 2001** to provide authorization and funding for the enhancement of ecosystems, water supply, and water quality of the State of California.

other topics

- **AB 776 (*Thomson*) State Water Resources Control Board** would direct parties to the Sacramento Valley Water Management Agreement, including the Department of Water Resources and the Bureau of Reclamation, to brief Legislative committees monthly on implementation of the Agreement. The Agreement is being implemented in lieu of proceedings in Phase 8 of the SWRCB Bay-Delta Water Rights Hearing. This measure is in the Assembly inactive file.
- **SB 221 (*Kuehl*) Land use**: water supplies (Chapter 642, Statutes of 2001) requires legislative bodies of cities or counties, under the Planning and Zoning Law, to include as a condition in a tentative map for a subdivision of more than 500 dwelling units a requirement that a "sufficient water supply" shall be available. This bill also specifies procedures and standards for determining if water supplies will be sufficient.
- **SB 610 (*Costa*) Water supply planning (Chapter 643, Statutes of 2001)** requires cities and counties, upon determining that a project is subject to the California Environmental Quality Act, to request applicable public water systems to determine whether projected water supplies will meet projected water demand associated with the project. This bill specifies procedures and standards for making this determination.
- **SB 727 (*Costa*) Environmental Water Account Act of 2001** would formally establish the Environmental Water Account program and create the Environmental Water Account Program Fund. This measure is in the Senate Committee on Agriculture and Water Resources.

litigation update

Summary of Laub v. Babbitt, et al. (E.D. Cal., No. CV-F-00-6601)

On September 28, 2000, the California Farm Bureau Federation and three individuals filed a lawsuit against several federal and state CALFED agencies and officials in federal district court. The Farm Bureau claimed that the agencies violated the National Environmental Policy Act and the California Environmental Quality Act when they acquired land and water under the CALFED program. In December 2000, the court dismissed the CEQA claim and the state agencies. After the Farm Bureau amended its complaint to include additional state officials, the court dismissed this complaint as well, in September 2001. The court agreed with the federal and state defendants that the NEPA claim was not ripe for adjudication, and it agreed with the state defendants that NEPA does not apply to state acquisitions of land and water. Further proceedings are pending.

Summary of Bay-Delta Programmatic EIR Cases (Jud. Council Coord. Proceeding No. 4152)

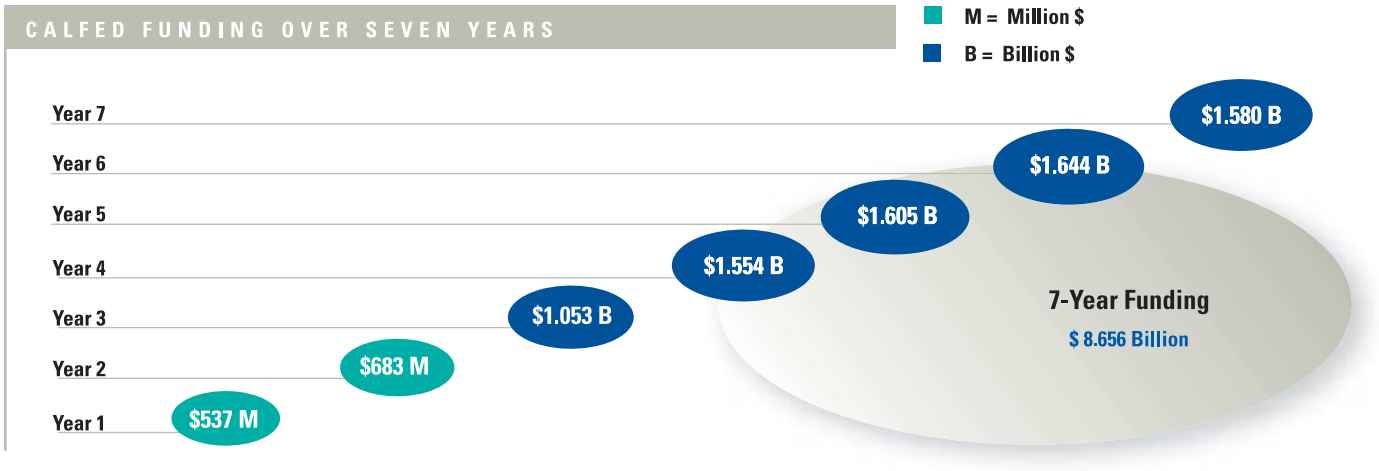
In September, 2000, the Regional Council of Rural Counties, Central and South Delta Water Agencies, and certain individuals filed suit in Sacramento Superior Court against the CALFED state and federal agencies (Case No. 00CS01331). The Municipal Water District of Orange County filed a related legal action in Los Angeles Superior Court at the same time (Case No. BC237574.) Following the dismissal of the Farm Bureau's legal claims from federal court, those petitioners refiled their legal action in Fresno Superior Court (Case No. 00 CE CG 11667). All three actions allege that the state agencies did not comply with CEQA in preparing the CALFED Programmatic Environmental Impact Statement/Environmental Impact and Record of Decision. The RCRC action also seeks to invalidate the CALFED ROD on various grounds.

On April 2, 2001, all three action were coordinated for hearing in the Sacramento Superior Court. The administrative record was filed in July, 2001, and various preliminary motions have been set for hearing in November and December, 2001.

On November 14, 2001, the Municipal Water District of Orange County dismissed its case following a settlement in which the parties acknowledged actions set forth in the CALFED ROD and the agencies' progress in implementing certain program areas.

fiscal information

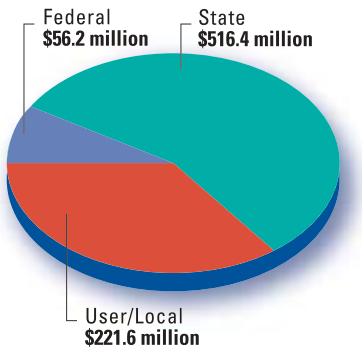
In the Record of Decision, CALFED projected expenditures for each program element over a 7 year period. In many cases the funding appropriated has not equaled the amount projected in the ROD. The primary source of funding in the first two years of CALFED implementation is from state bond funds. However, bond funds will be depleted by Year 3 and 4 in most cases.



stage 1

Projected Expenditures. Table 1, taken from the June 2000, Framework for Action, provides the Stage 1 estimates for CALFED projected expenditures. These estimates are in Year 2000 dollars. Actual funds appropriated for CALFED for Year 1 and 2 are shown in Tables 2 and 3. Proposed expenditures for Years 5-7 are estimates that will be adjusted after an evaluation is made of effectiveness of the program investments during Years 1-4. Table 1 does not include the funding projected for CALFED oversight and coordination. (see table 1 on page 66)

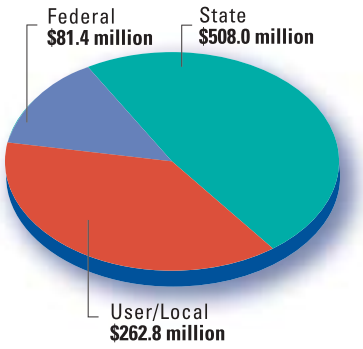
YEAR 1 FUNDING



year 1

Table 2 includes the funds appropriated for the CALFED Bay-Delta Program in the first year of the program (state fiscal year is July 1, 2000 – June 30, '01, federal fiscal year is October 1, 2000 – September 30, '01). Funding for CALFED in Year 1 was $766 million, primarily due to state bond funds ($323 million) and local cost sharing for recycling projects ($149 million). Year 1 funding was increased in some program elements because of revised cost estimates, such as for the Environmental Water Account, and because bond funds were being spent at a faster rate than planned in the ROD for groundwater projects and other programs. However, an increase in rate of spending in Year 1 funding does not affect the overall seven-year total reflected in Table 1. (see table 2 on page 67)

YEAR 2 FUNDING



year 2

Table 3 includes the funds appropriated for the CALFED Bay-Delta Program in the second year of the program (state fiscal year is July 1, 2001 – June 30, '02, federal fiscal year is October 1, 2001 – September 30, '02). Total funding budgeted for Year 2 is $852 million, primarily due to state bond funds ($385 million) and local cost sharing for recycling projects ($178 million). Again, in Year 2 as in Year 1, bond funds for ground-water storage are being spent at a faster rate than projected in Table 1. However, funding from the State General Fund was reduced by approximately $20 million in Year 2 due to state revenue shortfalls. (see table 3 on page 68)

fiscal information

The following three tables summarize the Stage I funding needs and the Year 1 and Year 2 appropriated funds for CALFED.

TABLE 1 CALFED BAY-DELTA PROGRAM
stage 1 projected expenditures ($ in millions)

	program year(s)								cost sharing		
program element	1	2	3	4	5	6	7	total	fed	state	other
Ecosystem Restoration[1]	$235	$198	$163	$168	$220	$218	$218	$1,420	$510	$510	$400
Environmental Water Account	$50	$50	$50	$50				$200	$100	$100	
Water Use Efficiency	$31	$62	$299	$641	$641	$641	$641	$2,956	$759	$759	$1,438
Water Transfers	$3	$3	$3	$2	$2	$1	$1	$15	$7.5	$7.5	
Watershed[2]	$40	$45	$45	$45	$45	$40	$40	$300	$138	$138	$24
Drinking Water Quality[3]	$41	$78	$82	$110	$116	$120	$128	$675	$200	$200	$275
Levees[4]	$33	$76	$78	$82	$45	$65	$65	$444	$142	$88	$34
Storage[5]	$50	$75	$138	$208	$266	$349	$339	$1,425	$237	$237	$200
Conveyance[6]	$29	$66	$150	$198	$220	$160	$98	$921	$188	$381	$193
Science	$25	$30	$45	$50	$50	$50	$50	$300	$150	$150	
total[7]	$537	$683	$1,053	$1,554	$1,605	$1,644	$1,580	$8,656	$2,432	$2,571	$2,564

[1]Proposed cost sharing for the ERP is a split between users (-$35 million per year from a new broad-based fee & $15 million per year in CVPIA Restoration Funds), and public dollars (assumed split equally between federal and state sources of funding). This table assumes revenues from new broad based fees would become available beginning in 2003.

[2]Cost shares include a 10% contribution from locals for community based watershed activities, with the rest funded equally between federal and state sources.

[3]In general cost sharing is assumed to be 50/50 fed/state or 33/33/33 fed/state/user, depending on the action. Some water quality actions assume federal and state funding in the initial 2 years, with 100% of the funding in the latter years from users.

[4]Total cost includes the Suisun Marsh Levee Program, which provides substantial ecosystem, water quality and flood protection benefits. Allocations of cost shares for this Program is not included in this table.

[5]Initial Funding will be largely state and federal sources. The cost share for surface storage construction has not been determined. Final cost shares (including reimbursements by beneficiaries) will depend on allocation of costs and identification of beneficiaries for individual projects. Cost sharing for full-scale groundwater storage projects assumes a 50% local match.

[6]Total includes rough estimate for construction of the San Luis Reservoir Low Point Project, but cost sharing is not included because cost shares have not been determined.

[7]Cost sharing dollars do not total $8.6 billion because allocation of cost shares have not determined for all levee, storage and conveyance activities.

TABLE 2 CALFED BAY-DELTA PROGRAM

year 1 funding by source ($ in millions)

	Year 1 Funding	state funding[1]					federal funding[2]				user/local funding[3]			
		GF	Prop 204	Prop 13	Other State	Subtotal	USBR/W&RR	USACE	Other Fed[2]	Subtotal	SWP	CVPIA RF	Local[4]	Subtotal
Ecosystem Restoration	$236	$3.5	$134.9	$46.2	$6.1	$190.7	$4.3	$0.4	$6.3	$11	$3.7	$17.1	$13.5	$34.3
Environmental Water Account	$59.1	$59.1				$59.1								
Water Use Efficiency	$204.1	$17.0		$12.3		$29.3	$26.0			$26.0			$148.8	$148.8
Water Conservation	($31.2)	($17.0)		($3.2)		($20.2)	($1.9)			($1.9)			($9.1)	($9.1)
Water Recycling	($172.9)			($9.1)		($9.1)	($24.1)			($24.1)			($139.7)	($139.7)
Water Transfers	$1.1	$1.1				$1.1								
Watershed	$33.0	$18.9	$1.3		$1.0	$21.2			$2.3	$2.3			$9.5	$9.5
Drinking Water Quality	$37.5	$13.5		$24.0		$37.5								
Levees	$35.4	$0.1	$1.7	$28.5		$30.3					$0.6		$4.5	$5.1
Storage	$95.5	$24.7		$69.0		$93.7	$1.8			$1.8				
WMS/Oversight & Coor.	($2.9)	($2.9)				($2.9)								
Surface	($13.8)	($12.0)				($12.0)	($1.8)			($1.8)				
Groundwater	($78.8)	($9.8)		($69.0)		($78.8)								
Conveyance	$22.3	$4.2		$4.8		$9.0	$2.6			$2.6	$9.7	$1.0		$10.7
Science	$28.2	$13.2			$2.3	$15.5	$4.0	$0.2	$1.9	$6.1	$6.2	$0.2	$0.2	$6.6
CALFED Science	($13.8)	($13.0)				($13.0)			($0.8)	($0.8)				
IEP	($14.4)	($0.2)			($2.3)	($2.5)	($4.0)	($0.2)	($1.1)	($5.3)	($6.2)	($0.2)	($0.2)	($6.6)
Oversight & Coordination	$13.8	$13.5				$13.5		$0.3		$0.3				
total	$765.9	$182.0	$137.9	$184.8	$11.7	$516.4	$42.7	$1.1	$12.4	$56.2	$26.4	$18.5	$176.7	$221.6

[1]State funding sources include General Fund (GF), bond funds (Proposition 204 & Proposition 13), and Other State funding sources (Other State). Other State includes State matching funds for projects funded through the ERP 2001 Proposal Solicitation Package ($6.1m) and Interagency Ecological Program (IEP) funding ($2.274m) from various departments that contributes to the Science Program.

[2]Federal funding sources include U.S. Bureau of Reclamation Water and Related Resources (USBR W&RR), U.S. Army Corps of Engineers appropriations (USACE), and Other Federal sources (Other Fed). Other Fed includes Federal matching funds for projects funded through the ERP 2001 Proposal Solicitation Package ($6.3m), USGS funding for the Science Program ($0.8), and IEP funding from U.S. Fish & Wildlife Service ($0.231), U.S. Geological Survey ($0.782), National Marine Fisheries Service ($0.035), and U.S. Environmental Protection Agency ($0.04) that contributes to the Science Program.

[3]User subtotal includes State Water Project Funds and CVPIA Restoration Funds that are collected from state water contractors and Central Valley Project water users. These funds are budgeted and appropriated through the federal and state governments. ERP amount includes local cost share for the 74 proposals recommended for funding this Year through the 2001 Proposal Solicitation Package. Water Use Efficiency and Watershed amounts include local cost sharing for grant projects funded through PSPs. Water Use Efficiency amount also includes non-Federal funding for Title XVI water recycling programs/projects. Levees amount includes local cost share for levee subventions. Science amount is SWP and other local contributions to the IEP. Additional local contributions in other program areas will be estimated as information is available.

TABLE 3 CALFED BAY-DELTA PROGRAM

year 2 funding by source ($ in millions)

		state funding					federal funding[2]				user/local funding[3]			
	Total Year 2 Funding	GF[5]	Prop 204	Prop 13	Other State[1]	Subtotal	USBR/W&RR[4]	USACE	Other Fed[2]	Subtotal	SWP	CVPIA RF	Local	Subtotal
Ecosystem Restoration	$188.2	$2.8	$126.3	$10.0		$139.1	$2.2	$1.2	$3.1	$6.5	$7.3	$18.8	$16.5	$42.6
Environmental Water Account	$48.0	$1.0	$28.2	$6.3		$35.5	$12.5			$12.5				
Water Use Efficiency	$333.7	$11.8		$43.3	$57.9	$113.0	$19.8		$18.2	$38.0			$182.7	$182.7
Water Conservation	($37.1)	($11.8)		($18.3)		($30.1)	($2.3)			($2.3)			($4.7)	($4.7)
Water Recycling	($296.6)			($25.0)	($57.9)	($82.9)	($17.5)		($18.2)	($35.7)			($178.0)	($178.0)
Water Transfers	$1.1	$0.9				$0.9	$0.2			$0.2				
Watershed	$17.3	$7.3		$10.0		$17.3								
Drinking Water Quality	$16.2	$4.1		$12.1		$16.2								
Levees	$17.2	$4.9	$8.4			$13.3		$0.3		$0.3	$0.6		$3.0	$3.6
Storage	$123.2	$14.1		$103.0		$117.1	$6.2			$6.2				
WMS/Oversight & Coor.	($1.5)	($1.5)				($1.5)								
Surface	($15.0)	($8.8)				($8.8)	($6.2)			($6.2)				
Groundwater	($106.8)	($3.8)		($103.0)		($106.8)								
Conveyance	$72.2	$3.3		$37.6		$40.9	$4.0			$4.0	$17.3	$10.0		$27.3
Science	$20.1	$5.1			$2.3	$7.4	$3.9	$0.2	$2.0	$6.1	$6.2	$0.2	$0.2	$6.6
CALFED Science	($6.6)	($4.9)				($4.9)			($1.7)	($1.7)				
IEP	($13.5)	($0.2)			($2.3)	($2.5)	($3.9)	($0.2)	($0.3)	($4.4)	($6.2)	($0.2)	($0.2)	($6.6)
Oversight & Coordination	$14.9	$7.3				$7.3	$7.5	$0.1		$7.6				
subtotal	$852.2	$62.6	$162.9	$222.3	$60.2	$508.0	$56.3	$1.8	$23.3	$81.4	$31.4	$29.0	$202.4	$262.8

[1]Includes State Revolving Funds ($57.9m) from the State Water Resources Control Board and Interagency Ecological Program (IEP) funding ($2.274m) from various departments that contributes to the Science Program.

[2]Includes U.S. Bureau of Reclamation Water and Related Resources (USBR W&RR), Central Valley Project Improvement Act Restoration Funds (CVPIA RF), U.S. Army Corps of Engineers appropriations (USACE), and other federal sources (Other Fed). Other Fed includes U.S. Fish and Wildlife Service funding that contributes to the Ecosystem Restoration Program (ERP- $2.242m), National Marine Fisheries Service funding that contributes to the ERP ($0.81m), U.S. Environmental Protection Agency funding ($18.2m) that contributes to the Water Use Efficiency Program, and IEP funding from U.S. Fish & Wildlife Service ($0.231), U.S. Geological Survey ($0.782), National Marine Fisheries Service ($0.035), and U.S. Environmental Protection Agency ($0.04) that contributes to the Science Program.

[3]User subtotal includes State Water Project Funds and CVPIA Restoration Funds that are collected from state water contractors and Central Valley Project water users. These funds are budgeted and appropriated through the federal and state governments. ERP and WUE amounts include estimates for local cost sharing for grant projects. WUE amount also includes local cost sharing for federal Title XVI recycling projects. Levees amount includes estimated local cost share for levee subventions. Science amount is SWP and other local contributions to the IEP. Additional local contributions in other program areas will be estimated as information is available.

[4]Includes $30 million for CALFED from P.L. 107-66. The allocation of the $30 million may be shifted between programs.

[5]A $20 million budget reduction in General Funds has been imposed by the Governor's Office in the following programs: WUE – $1.9 M; Watersheds – $2 M; DWQ – $5 M; Levees – $8.1 M; and Science – $3 M (numbers are approximations).

project	$
BAY REGION	
Alameda	
ACWD Schools & Water Conservation - Demonstration	$256,700
Oakland Zoo Recycling Feasibility Study	$204,600
Contra Costa	
A Straight Flush Commercial Ultra Low Flush Toilet Direct Install	$374,000
Contra Costa County Watershed Atlas and Creek Restoration Strategy	$50,000
The Save Our Delta Surveys (SODS)	$100,000
Walnut Creek Watershed	$260,000
Marin	
Local Watershed Stewardship: Steelhead Trout Plan	$47,500
Monterey	
Deep Aquifer Study and Management Plan	$260,000
Groundwater Recharge Feasibility Study	$100,000
Marina Coast Water District Water Conservation Feasibility Study	$143,256
On Farm Mobile Lab	$132,905
Napa	
Cullinan Ranch Restoration	$368,500
Ecological Monitoring of Tolay & Cullinan Ranch Tidal Areas	$593,931
Napa Creek Watershed Stewardship Year 3	$191,100
Napa River Watershed	$252,000
Napa River Watershed Mapping Partnership	$318,300
Napa River Wetlands Acquisition	$1,073,513
South Napa River Tidal Slough & Floodplain Restoration Project	$1,565,600
South Napa River Tidal Slough and Floodplain Restoration Project	$1,490,000
South Napa River Wetlands Acquisition and Restoration Program	$466,000
Stewardship Support & Watershed Assessment in the Napa River Watershed: A Two-Year Project	$360,900
Napa, Sonoma, Solano, Contra Costa, Marin	
IPM Partnership to Improve Water Quality in Suisun Bay and Local Creeks	$266,000
Sedimentation in the Delta and Suisun Bay	$1,367,684
San Francisco	
Yosemite Watershed Restoration Assessment Project	$771,000
San Francisco, Alameda, San Mateo	
Cold Water Fisheries and Water Quality Element	$200,000
Determine Biological, Physical & Chemical Characteristics of Ballast Water	$387,182
Preventing Exotic Introductions from Ballast Water	$222,830
Steelhead and Chinook Salmon Fish Passage Barrier Remediation on the Guadulupe River	$178,200
Santa Clara	
Almaden Reservoir Watershed Restoration Project	$300,000
Landscape & Agricultural Area Measurement & Water Budgets	$635,712
Stewardship Plans for the West Valley, Guadalupe, and Lower Peninsula Watersheds	$700,000
Upper Guadalupe River Tributary Monitoring Program and Pilot Restoration Project	$47,000
Santa Clara, Contra Costa, Alameda, Marin	
Regional High-Efficiency Washing Machine Rebate	$4,405,605
San Francisquito Creek Watershed Enhancement Program	$250,225
Westside Basin Groundwater Management Plan	$250,000
Santa Cruz	
Hydrogeologic Investigation and Monitoring in Scott's Valley	$250,000
Santa Cruz, Monterey	
Supplemental Wells/Injection Wells Water Quality Study	$30,450
Solano	
Adopt-a -Watershed Leadership Institute	$592,884
Bay Point shoreline Restoration Plan	$185,000
Benicia Waterfront Marsh Restoration	$59,000
Biological Restoration and Monitoring in the Suisun Marsh/North SF Bay Ecological Zone	$772,667
Chronic Toxicity of Envir. Contaminants in Sacramento Splittail - A Biomarker Approach	$673,684
Environmental Stewardship Educational Conferences & Tours	$48,500
Fish Screen Construction Suisun Marsh	$450,000
Fish Screen Construction Suisun Marsh (Phase 2)	$500,000
Hill Slough West Habitat Restoration. Demo Project	$87,000
Invasive Spartina Project	$1,793,661
Reintroduction of Endangered Soft Bird's Beak to Restored Habitat	$148,627
Suisun Marsh Property Acquisition & Restoration	$536,750
Estuary Action Challenge Environmental. Education Project	$50,000
Sonoma	
City of Santa Rosa Evapotranspiration Controllers Feasibility Study	$93,587
Culture of Delta Smelt	$1,025,015
Hill Slough West Habitat Demonstration Project	$200,000
Petaluma Marsh Expansion Project - Marin County	$352,135
Petaluma River Watershed Restoration Program	$220,000
Regional Wetlands Goals Project	$76,000
Sonoma Creek Watershed	$302,000
Sonoma Creek Watershed Conservancy	$438,923
Sonoma Creek Watershed Conservancy	$545,170
Sonoma Creek Watershed Conservancy: Outreach and Restoration	$270,541
Species & Community Profiles of the SF Bay Area Wetlands Ecosystem Goals Project	$45,320
Tolay Creek Restoration	$283,000

DELTA REGION	
Contra Costa	
Alhambra Creek Watershed CRMP Program	$138,500
Kirker Creek Watershed CRMP Program	$198,450
Stockton EWD & CCWD Fish Screen Facilities	$670,000
Franks Tract Restoration	$323,186
Rhode Island Floodplain Management and Habitat Restoration	$25,000
Study Associated with Restoration of Franks Tract	$1,218,105
Watershed Stewardship in Marsh Creek	$126,000
Contra Costa, San Joaquin	
Demo Project for Protection of Delta Islands	$928,150
Sacramento	
Arden-Cordova Evapotranspiration Controller/Rain Shut-off Program	$23,750
Cosumnes Floodplain Acquisition and Restoration	$3,500,000
Cosumnes River Acquisition, Restoration Planning and Demonstration	$750,000
Cosumnes River Preserve (Valensin Ranch Acquisition)	$1,500,000
Cosumnes River Salmoid Barrier Program Fishery	$188,255
Cosumnes River Watershed Inventory and Assessment	$556,325
Cosumnes Start-up Stewardship and Restoration	$1,985,100
Dry Creek Reclaimed Water Groundwater Recharge Feasibility Study	$287,500
Four Projects for Sacramento Area Water Use Efficiency	$16,661,950
Inventory of forest road systems, Cat Creek Watershed	$45,320
Juvenile Salmon Migratory Behavior Study in Delta	$210,000
McCormack-Williamson Tract Acquisition	$5,356,000
McCormack-Williamson Tract, Ph. II Monitoring	$572,886
McCormack-William Tract Restoration Plan, Design & Monitoring	$365,650
McCormack-Williamson Tract Wildlife Levee Management	$122,014
Restore Habitat on McCormack-Williamson Levees	$860,778
Rio Linda, El Verta - Natomas In-Lieu Groundwater Recharge Feasibility Study	$189,750
Sherman Island - Levee Habitat Demonstration Project	$480,000
Stone Lakes NWR Land Acquisitions	$2,622,500
Tyler Island Levee Protection and Habitat Restoration Pilot Project	$885,202
Water-Wise Demonstration Landscape	$277,663
Sacramento, El Dorado	
Linked Hydrogeomorphic Ecosystem Models to Support Adaptive Management	$1,546,016
Sacramento, San Joaquin	
Cosumne/Mokelumne Corridor Floodplain Acquisitions	$3,044,342
Cosumnes River Feasibility Study	$1,007,800
Influence of Flood Regimes, Vegetative and Geomorphic Structures on the Links between Aquatic and Terrestrial Systems	$2,521,236
NPS Pollution Reduction in Vineyards	$365,300
Sacramento, Yolo, Solano	
Hastings Tract screen feasibility study	$27,000
North Delta Area - Juvenile Salmon Rearing	$24,500

project	$
Sacramento, Yolo, Solano, San Joaquin	
1999/2000 Bay-Delta Education Program	$33,269
Algal Toxicity	$500,000
Arundo Donax Eradication and Coordination.	$842,587
Assessing Ecological & Economic Impacts of the Chinese Mitten crab	$113,033
Assessment of Ecological and Human Health Impacts of Mercury in the Bay-Delta Watershed	$4,164,000
Assessment of organic matter in the habitat and its relationship to the food chain	$1,440,649
Assessment of Pesticide Effects on Fish & Their Food Resources	$1,586,894
Biological Assessment of Green Sturgeon	$211,164
Biological Assessment of Green Sturgeon in the Sacramento-San Joaquin Watershed	$241,000
Central Valley Steelhead Genetic Evaluation	$70,636
Contaminant Effects on Smelt	$437,326
Culture of Delta Smelts Phase II & III	$576,229
Determine Effects of Toxics	$110,000
Developing a Methodology to Accurately Simulate Entrainment of Fish	$200,000
Development of a Comprehensive Implementation Plan for a Statistically Designed Marking & Recovery Plan	$74,951
Digital Soil Survey and Mapping Imagery Develop	$502,100
Dissolved Organic Carbon Release from Delta Wetlands, Part 1	$1,434,449
Dissolved Organic Carbon Release-Delta Wetlands	$1,030,000
East Delta Habitat Corridor (Georgiana Slough)	$1,100,000
Effects of Introduced Clams on the Food Supply of Bay-Delta Fishes	$1,000,490
Effects of introduced Species of Zooplankton & clams on the Bay-Delta Food Web	$653,384
Effects of Wetlands Restoration on Methyl Mercury Levels	$546,171
Evaluation of Alternative Pesticide Use Reduction Practices	$1,113,781
Evaluation of Potential Impacts of Chinese Mitten Crab on Benthic Comm. In the Delta	$152,233
Evaluation of Selenium Sources, Levels, and Consequences in the Delta	$1,627,117
Evaluation of tagging data	$672,600
Expanding California Salmon Habitat to Alter Dams and Diversions	$49,000
Fathead Minnow Toxicity	$400,000
Food Reserve for Zooplankton in the S. San Joaquin River Delta	$576,422
Genetic Identification of Watershed Dependent Species	$851,669
In-Channel Island Restoration/demonstration	$270,270
Innovative Fish Screen for Small Diversions Demonstration Project	$90,000
Introduced Spartina Eradication Project	$275,000
Introduction of Non-indigenous Aquatic Species Research Program	$197,000
Levee Setback Geomorphic Model	$104,458
Monitoring of Delta contaminants	$100,000
Non-native Invasive Species Advisory Council	$50,000
Practical Guidebook to Prevent & Control for Non-native Invasive Plants in Shallow Water Habitats of the Bay-Delta Ecosystem	$76,750
Purple Loosestrife Prevention, Detection & Control Actions for the Sacramento-San Joaquin River Delta System	$127,473
Purple Loostrife Prevention, Detection & Control in the Sac/San Joaquin Delta & Associated Hydrologic Units	$201,306
Rainbow Trout Toxicity Monitoring	$530,000
Reducing Risk of Importation & Distribution on Non-native Invasive Species Through Outreach & Education	$105,466
Research to Predict Evolution of Restored Diked Wetlands	$575,172
Delta Sediment Water Quality	$24,000
Delta Sediment Water Quality	$276,000
Delta Sediment Water Quality	$200,000
Sedimentation movement and availability and monitoring in the Delta	$1,047,010
Small Diversion Fish Screen Program	$900,000
Twitchell Island Subsidence Study	$194,870
Understanding Tidal Marsh Restoration Processes & Patterns	$1,042,246
Water Hyacinth Education Program	$64,500
Water Quality Criteria for Chlorpyrifos and Diazinon (Designated Action)	$67,753
Winter-run Chinook Salmon Captive Broodstock Program	$300,000
Zebra Mussel Detection & Outreach Project	$100,000

San Joaquin	
Canal Ranch Habitat Restoration Phase II	$135,940
Fay Island Restoration Project	$744,148
Fern-Headreach Tidal Perennial Aquatic and Shaded River Aquatic Conservation Project	$425,000
Lower Mokelumne River Restoration Program	$680,000
Lower Mokelumne River Watershed Education Project	$70,140
Proposal to Develop Local Watershed Stewardship Plan for the Lower Mokelumne River	$159,000
Staten Island Acquisition	$35,220,873
Task 1.1: Program Coordination	$277,000
Transport, Transfer & Effects of Selenium and Carbon in the Delta	$2,600,000
Woodbridge fish screen and passage	$1,575,000
San Joaquin, Stanislaus, Merced, Madera, Fresno	
Determination of the Causes of Dissolved Oxygen Depletion in the San Joaquin River	$892,400
Solano	
Cache Slough habitat enhancement	$85,000
Hastings Tract Fish Screen Phase II: Construction	$271,250
Jepson Prairie Restoration and Conservation Plan	$244,801
Lagoon Valley Watershed Restoration	$431,000
Liberty Island Acquisition	$8,926,000
Liberty Island Acquisition & Restoration Phase II	$2,701,734
Prospect Island - Develop Monitoring Plan	$35,000
Prospect Island - Shallow Water Habitat/Wetlands Restoration Plan	$2,500,000
Prospect Island Habitat Protection Project	$2,000,000
Prospect Island Monitoring Project	$915,000
Stanislaus	
Restore Special Run Pool 10 Reach	$165,000
Tuolumne River Natural Resources Program	$3,583,000
Yolo	
Discover the Flyway	$49,000
Educating Farmers & Landowners in Biological Reserve Management	$1,066,593
Inundation of a Section of the Yolo Bypass to Restore Sacramento Splittail & Other Native Species	$912,309
The Virtual Science Center and Hands-on Learning Programs	$9,600
Watershed Restoration Strategy for the Yolo Bypass	$244,188
Yolo Bypass - Habitat Restoration Study	$226,000
Yolo Bypass Management Strategy Phase II	$210,000
Yolo Bypass Watershed Planning Project	$288,081
Yolo County (FCWCD) Yolo Zamora Water District Conjunctive water use Project	$427,800

SACRAMENTO VALLEY REGION

Butte	
Adams Dam Fish Screen & Ladder	$70,304
Adams Dam Screen and Passage	$217,000
Butte Cr/Sanborn Slough Bifurcation Upgrade Project	$1,000,000
Butte Creek - Watershed Management Strategy Plan	$83,000
Butte Creek Acquisition and Riparian Restoration	$187,128
Butte Creek Acquisition and Riparian Restoration	$125,000
Butte Creek Riparian Restoration Demonstration	$76,348
Butte Creek Watershed	$302,867
Butte Creek Watershed Floodplain Management Plan	$582,510
Cherokee Watershed Organizational Capacity and Citizen Monitoring Project	$93,815
Construct Fish Ladder on Parrott-Phelan Dam	$0
Construct Siphon & Associated Improvements on Western Canal	$3,095,873
Fish Screen and Ladder Construction	$316,500
Gorrill Dam Fish Screen & Ladder	$67,990
Gorrill Dam Screen and Ladder	$369,641
OWID Palermo Canal Lining Project	$251,000
Watershed Education Program	$100,865
Western Canal Water District Tailwater Recovery System Feasibility Study	$125,000
Butte, Colusa, Glen	
The Butte Creek Watershed Educational Workshops and Field Tours Series	$33,000

project	$
Butte, Glenn	
WCWD Water Use Efficiency Project	$285,524
Butte, Yuba, Sutter	
Ferris Meadow Reach-Feather R. Corridor Restoration Management	$1,009,400
Colusa	
Maxwell ID-Tuttle Pump Relocation Project	$440,737
Sand and Salt Creek Watershed Project	$599,000
Colusa, Sutter	
RD 108 screen construction	$2,500,000
Wilkins Slough - Fish Screen Prelim. Design	$100,000
Small Fish Screen Evaluation	$95,000
El Dorado	
ARC Water Quality Assessment: South Fork American and Cosumnes River Basins	$96,700
Ultra Low Flush Toilet Rebates for Low-Income Customers	$104,300
Glenn	
Glenn County Installation of Dedicated Multicompletion Groundwater Monitoring System with Extensometers and Observation Wells	$265,000
Orland Project Water Conservation Feasibility Study	$140,000
Regional Water Use Efficiency Project	$296,800
Glenn, Butte, Colusa	
Fish Screen Construction	$5,500,000
Fish Screen -Feasibility Engineering	$75,000
Princeton Fish Screen Construction	$1,750,000
Princeton Pumping Plant Fish Screen (Phase 1-Feas.)	$75,000
Sac River Fish Small Screen Project	$1,800,000
Glenn, Colusa, Yolo	
Colusa Basin Watershed Program	$492,500
Glenn-Colusa	
GCID System Optimization for Fisheries, etc.	$1,322,000
Humboldt	
City of Rio Dell Water Conservation Feasibility Study	$100,000
City of Trinidad Water Conservation Feasibility Study	$100,000
Fieldbrook Community Services District Water Conservation Feasibility Study	$100,000
Lake	
Big Valley Groundwater Recharge Investigation Update	$179,004
Middle Creek Ecosystem Restoration Project- Design Phase	$135,818
Nevada	
South Yuba River Comprehensive Management Plan	$524,671
Yuba River Conservancy Planning and Public Outreach Proposal	$192,300
Orange	
Water Softener Pilot Program	$357,005
Placer	
City of Roseville Creek and Riparian Management and Restoration Plan	$228,470
Douglas/Long Canyon Paired - Watershed Project	$86,108
North/Middle Forks American River Watershed EUI-Based Watershed Management Plan	$554,500
Real-time Canal Flow Monitoring and Canal Lining	$1,325,488
Western Placer Watersheds Coordination, Planning & Assessment	$425,764
Plumas	
The Last Chance Assessment of Model Protocol	$582,000
Plumas, Sierra	
Hydrogeology and Groundwater Monitoring in Sierra Valley	$250,000
Sacramento	
Assessment and Implementation of Urban Use Reduction of Diazion and Chlorpyrifos	$663,500
Watershed Management Planning for Sacramento River Riparian Program	$200,000
Development of River Corridor Management Plan (RCMP)	$250,000
Sacramento, El Dorado, Placer	
American River Integrated Watershed Stewardship Strategy	$220,750
Shasta, Tehama, Butte, Glenn, Colusa, Sutter, Yolo	
Arundo Donax: Survey and Eradication	$360,000
Floodplain Acquisition. & Management on Sacramento River	$534,570
Promotion of Farming Best Management Practices and Calibration Technology to Mitigate OP Pesticide Runoff into the Sacramento River Watershed	$308,000
Riparian Corridor Acquisition & Restoration Assessment	$2,240,250
Sacramento River Acquisition and Riparian Forest Restoration	$780,000
Sacramento River and Major Tributaries.- Corridor Mapping Project	$145,200
Sacramento River Conservation Area Program	$326,991
Sacramento River Floodplain Acquisition and Riparian Restoration	$9,879,800
Sacramento River Meander Restoration	$898,700
Sacramento River Valley	
Sacramento River Floodplain Acquisition and Riparian Restoration	$512,500
Sacramento, Yolo, Solano, San Joaquin	
Fish Treadmill Developed Fish screen Criteria for Native Sacramento-San Joaquin Watershed Fishes	$823,000
Sacramento River Discovery Center	$39,552
Shasta	
ACID Churn Creek Lateral Improvement Project Feasibility Study	$100,000
City of Redding Water Utility Fish Screen Rehabilitation.	$510,262
Clear Creek Juvenile Salmon Monitoring Project	$871,026
Clear Creek Prescription	$256,260
Genetic Comparison of Steelhead Stocks in Clear Creek	$45,493
Gravel Restoration Project	$0
Lower Clear Creek Floodway Restoration Project	$3,559,596
Redding Area Water Resources Master Plan - Phase 2C	$250,000
Saeltzer Dam Fish Passage	$238,200
Sulphur Creek Coordinated Resource Management Planning Group	$23,828
Interactive Watershed Information Model for Education and Adaptive Management	$378,899
Shasta West Watershed Assessment	$131,600
Shasta, Modoc, Lassen	
Pit River Watershed Alliance Watershed Management Program	$542,456
Shasta, Glenn, Colusa, Yolo, Sutter, Butte, Sacramento	
Sub-basin Level Water Measurement Program	$7,756,000
Shasta, Tehama	
ACID Fish Passage	$325,000
ACID Fish Passage and Fish Screen Improvement Project, Phase II, Final Design	$860,000
ACID Fish Passage and Fish Screen Improvement Project, Phase III	$5,253,000
ACID Fish Screen	$5,100,000
Battle Creek - Chinook Salmon & Establish Watershed Conservancy	$50,000
Battle Creek - Chinook Salmon & Steelhead Restoration Study	$306,000
Battle Creek Anadromous Salmonid Monitoring Projects	$1,576,152
Battle Creek Riparian Protection	$1,000,000
Battle Creek Salmon and Steelhead Restoration Project	$28,000,000
Battle Creek Screens and Fish Passage	$395,000
Battle Creek Screens and Fish Passage	$395,000
Battle Creek Watershed Stewardship	$145,000
Cottonwood Creek Watershed Group Formation	$161,000
Cottonwood Cr. Watershed Monitoring. & Assessment	$360,500
Cottonwood Creek Channel Restoration Planning	$61,000
Fish Passage Improvement Project at the Red Bluff Diversion Dam	$340,600
Fish Passage Improvement Project at the Red Bluff Diversion Dam	$1,030,000
Improve Upstream Ladder & Barrier Weir @Coleman Nat'l Fish Hatchery at Battle Creek	$2,500,000
Lake Red Bluff Riparian Area Restoration & Education Support Project	$29,114
Main Canal Modernization	$4,113,000
Monitoring Spring and Winter-run Chinook Salmon and Steelhead in Battle Creek	$150,000
Sacramento River Winter Chinook Salmon Carcass Survey	$305,273
Selected fish screens	$374,850
Spawning Areas of Green Sturgeon in the Upper Sacramento River	$60,801
Solano	
Lower Putah Creek Watershed Assessment and Stewardship Implementation Program	$600,000
Sutter	
Lower Butte Creek Project Phase III	$4,783,719
Sutter County Integrated Watershed Coordinator	$195,200
Sutter National Wildlife Refuge Water Conveyance Restoration Project	$521,250
Sutter, Placer, Sacramento	
American Basin Fish Screen & Habitat Improvement	$950,000
Project Management & Scoping	$203,250

project	$
Restoration planning (M and N Fork American River, Auburn Ravine, Coon Creek)	$222,530
Sutter, Sacramento	
American Basin Fish Screen and Habitat Improvement Project	$200,000
City of Sac. Fish screen Program	$6,020,995
City of Sacramento Fish Screen Replacement Project Phase 2 - Design	$654,500
RD 2035 Fish Screen	$100,000
Sutter, Yuba, Sacramento	
Riparian Habitat Restoration Verona-Collinsville (Phase 1-Feas.)	$500,000
Tehama	
Anadromous Fish Passage at Clough Dam on Mill Creek	$1,215,000
Deer and Mill Creeks Acquisition and Enhancement	$1,000,000
Lassen Natl. Forest Watershed Stewardship	$849,845
Lower Mill Creek riparian Restoration	$69,000
Lower Mill Creek riparian Restoration	$30,000
Water Inventory and Analysis for Tehama County	$272,500
Watershed Planning (Deer Creek)	$196,554
Lassen National Forest Watershed Stewardship within the Anadromous Antelope Creek Watershed	$673,000
Tehama, Butte	
Boeger Family Farm Fish screen Phase II: Construction	$139,500
Butte Creek Big Chico & Sutter Sal & Steelhead Evaluation	$280,951
Estimated Abundance of Juvenile to Adult Escapement in Sacramento River	$1,081,638
Pump Station Relocation Construction	$1,610,000
Real Time Flow Monitoring	$418,700
Watershed Plan (Big Chico Creek)	$422,830
Watershed improvements/sediment stabilization (Deer, Mill, Antelope Creeks)	$371,000
Deer Creek Watershed Conservancy Rangeland and Riparian Management Program	$212,000
Tehama, Butte, Glenn, Sutter, Colusa	
Lower Butte Creek Project Phase II	$775,000
White Mallard Dam & Associated Diversions	$84,938
Yolo	
A Management Program for Tamarix & Arundo don ax on Cache Creek	$222,200
Capay Valley Community Action Plan	$40,000
Capay Valley Watershed Improvement Program	$118,000
Metering El Macero Water Service Area of Davis	$356,250
RD 2035 Fish Screen Design & Environ. Review	$1,820,000
Sustaining Agriculture & Wildlife Beyond Riparian Corridor	$1,464,167
Union School Slough Watershed Improvement Program	$636,000
Willow Slough Watershed Rangeland Stewardship Program	$1,800,668
Yolo, Solano	
Lower Putah Creek Watershed Stewardship Program	$100,500
Yuba	
Development of Implementation Plan for Lower Yuba River Anadromous Fish Habitat Restoration	$3,000,000
Life History and Stock Composition of Steelhead Trout	$120,000
South Yuba River Coordinated Watershed Management Plan	$264,000
Yuba County Conjunctive Use Program	$1,500,000
Yuba River Fish Screen Replacement	$114,750
Yuba Watershed Council	$142,618
Sac River Small Diversion Fish Screen Program	$322,081
Wilson Ranch Screen	$200,000

SAN JOAQUIN REGION

San Joaquin	
Biological Agricultural Systems in Cotton-BASIC-Reducing Synthetic Pesticides & Fertilizers in the N. San Joaquin Valley	$460,000
Calaveras	
Calaveras River Watershed Management Plan Implementation Program (Phase II)	$195,000
Camanche/Valley Springs Groundwater Study	$241,180
Contra Costa, Alameda, San Joaquin, Stanislaus, Merced	
Bacterial treatment of Selenium in the Panoche Drainage	$1,149,000
Fresno	
Arroyo Pasajero/Cantua Creek Conjunctive Use Hydrologic Study	$72,900
Current Condition Assessment of the Silver Creek Drainage and Panoche Alluvial Fan Areas of the Panoche/Silver Creek Watershed	$200,000
Dedicated Recharge Basin	$2,145,750
Groundwater Monitoring and Recharge Investigation Project	$249,895
McMillan Recharge Project	$136,500
Millerton Area Watershed Coalition	$102,154
On-farm Integrated Irrigation & Drainage Management	$1,122,385
Pleasant Valley Groundwater Storage Pilot Project	$590,550
Variability of Soil Salinity on Farms	$281,410
Waldron Pond Expansion Project	$97,500
Fresno, Kings	
Total Utilization of Drainage & Minimization of Evaporation	$148,030
Fresno, Kings, Kern	
Irrigation Scheduling	$1,365,000
Fresno, Kings, Tulare	
Monitoring Well Replacement	$250,000
Inyo	
Development of Hydrologic and Vadose Models to Improve Groundwater management in the Owens Valley	$375,750
Kern	
B-369 Distribution System and Lateral / B-230-D Extension	$5,763,410
Groundwater Management in Indian Wells Valley Basin	$207,000
Groundwater Recharge Feasibility Report	$280,000
Groundwater Storage Program	$1,583,094
P-667 Distribution System	$4,309,808
Service Area 3 Distribution System Improvement	$650,100
Service Area 5 Distribution System Improvement	$894,900
Water Quality Study	$282,246
Kern-Tulare	
Water Use Efficiency Project	$8,000,000
Kings	
AWD In-Lieu Groundwater Recharge Feasibility Study	$97,500
Tulare	
Hannah Ranch Site - Recharge Feasibility Study	$94,000
Madera	
Gravely Ford Canal Dedicated Basin	$69,000
Groundwater Basin Data Management System	$245,000
In-Lieu Groundwater Recharge Feasibility Study	$68,000
Madera, Fresno	
On-farm Irrigation System Improvements	$467,706
Merced	
Merced River Corridor Restoration Plan	$300,000
Merced River Corridor Restoration Project Phase III	$235,870
Real Time WQ Management of Seasonal Wetlands	$671,900
Merced River Salmon Habitat Enhancement; Lower Stone	$130,000
Merced River Salmon Habitat Enhancement; Ratzlaff Reach	$1,586,350
Phase 3 - Merced River Salmon Habitat Enhancement	$2,433,759
Merced	$1,699,101
San Bernardino	
Groundwater Management Plan for the Mojave Water Agency	$550,000
San Joaquin	
Delta Studies Program for San Joaquin County Schools	$306,291
Demo of Passage Technology for Restoration of Newton CU Mine	$60,000
Enhancement of the San Joaquin County Groundwater Monitoring Program	$923,527
Murphy Creek Restoration Project	$282,500
SEWD Groundwater Storage Pilot Project	$1,788,000
Sub-surface Drip Irrigation of Asparagus	$2,400,500
The Arroyo Pasajero Watershed: Restoring the Land for the Water	$200,000
This River is Our River: Watershed Capacity Building	$373,875

project	$
San Joaquin, Sacramento	
Implementing programs to reduce the use of pesticides and fertilizers in Sacramento and San Joaquin watersheds	$1,680,631
Implementing programs to reduce the use of pesticides and fertilizers in Sacramento and San Joaquin watersheds (BIOS)	$660,000
San Joaquin, Stanislaus, Merced, Fresno	
Panoche/Silver Creek Watershed Management Action Plan	$873,440
San Joaquin, Stanislaus, Merced, Madera, Fresno	
Acquisition and Restoration of Refuge Lands (San Joaquin R NWR)	$10,827,000
Banta-Carbona fish screen	$938,875
Bear Creek Floodplain Restoration Demonstration Project (SLNWR)	$334,000
Developing a Genetic Baseline for San Joaquin Salmon	$387,003
Fish Screen Project	$100,000
Focused Action to Develop Ecol. Based Hydro Model	$304,803
Health Monitoring of Hatchery & Natural Fall-run Chinook in San Joaquin River	$38,996
Mechanistic Approach to Riparian Restoration	$230,376
River Studies Center Exhibits & Programs	$70,467
San Joaquin River Pilot Project	$2,575,000
San Joaquin River Real-Time Water Quality Management Program	$931,857
San Joaquin Valley Salmonids in the Classroom Program Enhancement	$3,000
Santa Barbara	
Wellhead Protection Demonstration Project and Pilot Demonstration A&R Program	$250,000
Stanislaus	
Chinook Salmon Movement in the Lower San Joaquin R and South Delta	$285,000
Floodplain Easements; Lower Tuolumne and San Joaquin (DA9)	$1,545,000
Gravel at Basso Bridge	$250,975
Grayson River Ranch Perpetual Easement and Restoration	$732,000
Hamilton Wetlands Restoration Planning	$830,500
Irrigation Mgmt. & Dormant Spray Reduction	$1,026,794
Lower San Joaquin River Floodplain Protection and Restoration Project	$1,100,000
Patterson ID Positive Barrier Fish Screen on San Joaquin	$175,000
Restore MJ Ruddy Reach	$3,332,050
San Joaquin R NWR Riparian Habitat Protection & Restor.	$7,646,233
Southwest Stanislaus County Regional Drainage Water Management	$848,138
Tuolumne R. Bobcat Flat Floodplain Acquisition	$2,043,850
Tuolumne R. Restoration: Special Run Pool 11	$543,530
Tuolumne River Channel Restoration (Pool 9)	$2,353,100
Tuolumne River Fine Sediment Management	$910,486
Tuolumne River Initiative: Developing an Integrated Plan	$250,000
Tuolumne River Mining Reach Restoration No.3 Warner-Dierdorf Segment	$910,486
Tuolumne River Setback Levees and Channel Restoration	$2,801,000
Water Challenge 2010	$94,213
Stanislaus, San Joaquin	
Knights Ferry Gravel Replenishment	$536,410
Tuolumne River Setback Levees and Channel Restoration	$1,362,000
Water Acquisition	$3,090,000
On-Farm Ditch and Cast-in-Place Replacement	$548,000
Tulare	
Groundwater Recharge Facilities Feasibility Study	$82,984
Kennedy Wasteway/Sandridge Canal Feasibility Study	$57,000

SOUTHERN CALIFORNIA REGION

All Counties	
Brookside Golf Course Water Management Project	$356,200
Claremont Evapotranspiration Controller/Rain Shut-off Program	$95,000
Commercial Rebate Program	$3,268,000
Community Water Education and Training (WET)	$3,900,000
Demo. of Water Cons. in Urban Supermarkets	$180,000
Dominguez Gap Enhanced Groundwater Recharge Feasibility Study	$176,446
High-efficiency Clothes Washer Rebates	$1,500,000
Live Oak Basin Pilot Project	$500,000
New Courses for Bilingual Landscape Education	$150,000
San Dimas Evapotranspiration Controller/Rain Shut-off Program	$95,000
San Gabriel River Watershed Citizen Monitoring Program	$51,120
San Gabriel Valley. Indoor/Outdoor Water Savings Survey	$43,757
Los Angeles	
LA, SE District Evapotranspiration Controller/Rain Shut-off Program	$47,501
Los Angeles & San Gabriel Rivers Watershed Council Organizational Development	$288,000
Study of Augmenting Groundwater Supplies Through Capture of Urban Runoff	$971,800
Sun Valley Watershed Management and Water Replenishment Project	$430,000
Orange	
Expansion of the Learning to be WaterWise Program	$58,245
Joint Agency X-Ray Processor Retrofit Model	$41,698
Riverside	
Back Basin Injection Pilot Project	$1,664,750
Cabazon Groundwater Recharge Project	$152,260
Coldwater Basin Groundwater Recharge Feasibility Study	$198,000
Development of a Groundwater Management Plan for the Elsinore Basin	$592,000
Feasibility Study for CVWD Irrigation System	$99,929
Hemet / San Jacinto Groundwater Storage Program	$400,000
Martinez Canyon Pilot Recharge Study	$1,629,521
Salt-Tolerant Crops Evaluation	$69,600
Upper Chuckwalla Groundwater Storage Program	$530,380
Riverside, San Bernardino	
Yucaipa Water Conservation Feasibility Study	$89,324
San Bernardino	
Groundwater Recharge Facilities Feasibility Study	$145,000
Transition Zone Mojave River Groundwater Recharge Feasibility Study	$200,000
San Diego	
Lower San Luis Rey River Valley Groundwater Storage and Recovery Pilot Project	$2,500,000
San Diego River System groundwater Management Program	$670,560
Voucher Incentive - Clothes Washers- Residential	$873,500
San Luis Obispo	
Los Osos Evapotranspiration Controller/Rain Shut-off Program	$47,500
Santa Barbara	
Weather TRAK Evapotranspiration Controller	$351,325
Ventura	
Inland Saline Intrusion Assessment Project	$248,600

MULTIPLE REGIONS

Sacramento, Yolo, Solano, San Joaquin	
Applied Research to Identify Chinook Salmon Runs via Genetics	$450,000
Bay-Delta Environmental Restoration Education Program	$40,000
Bay-Delta Learning Initiative	$126,668
Environmental Agriculture Conferences and Field Tours	$28,000
Estuary Action Challenge Environmental Education Project	$51,500
Traveling Film Festival Exhibit	$51,500
Traveling Film Festival/ San Joaquin River Oral History Film	$216,550
Traveling Film Festival/Heron Booth/Video Archive	$54,000
Water Challenge 2010 Exhibit	$52,015
Watershed Educational Training	$13,390
Statewide	
California Water Conservation Support Network	$210,000
Citizen Involvement and Regional Outreach Program	$608,132
Discover the Flyway	$197,987
Efficient Landscape Water Program	$1,022,639
Implementation of BMPs to Mitigate OP Pesticides Runoff	$400,000
Irrigation Districts' Technical Assistance	$600,000
Partnership for Sub-Regional Watershed Forums and a Watershed Center	$498,122
Public Information Program	$1,350,000
Quantifying Commercial Industrial Institution Demand Side Management Potential	$145,000
Sacramento River, Headwaters to the Ocean, Public Information and Education	$321,816
The Learning Watershed Project	$56,907
Water Conservation and Recycling Awareness	$241,593

reference documents

California's Water Future: A Framework for Action – June 9, 2000

Final Programmatic Environmental Impact Statement/Report (EIS/EIR) – July 21, 2000

- Main Document (Impact Analysis) – 1,200 pages
- Executive Summary of EIS/EIR Main Document – 40 pages
- Phase II Report – 200 pages
- Implementation Plan – 190 pages
- Ecosystem Restoration Program Plan – 1,200 pages, four volumes
- Levee System Integrity Program Plan – 500 pages
- Water Quality Program Plan – 300 pages
- Water Use Efficiency Program Plan – 190 pages
- Water Transfer Program Plan – 100 pages
- Watershed Program Plan – 100 pages
- Multi-species Conservation Strategy – 500 pages
- Comprehensive Monitoring Assessment & Research Program Plan – 150 pages
- Response to Comments – 1,500 pages, three volumes

Record of Decision – August 28, 2000

CALFED Bay-Delta Program Project Tracking

ERP Draft Stage 1 Implementation Plan

CALFED

BAY-DELTA

PROGRAM

ANNUAL REPORT

2001

CALIFORNIA WATER

CALFED AGENCIES

CALIFORNIA

The Resources Agency
- Department of Water Resources
- Department of Fish and Game
- The Reclamation Board
- Delta Protection Commission
- Department of Conservation
- San Francisco Bay Conservation and Development Commission

California Environmental Protection Agency
- State Water Resources Control Board

California Department of Health Services

California Department of Food and Agriculture

FEDERAL

Department of the Interior
- Bureau of Reclamation
- Fish and Wildlife Service
- Geological Survey
- Bureau of Land Management

Environmental Protection Agency

Army Corps of Engineers

Department of Agriculture
- Natural Resources Conservation Service
- Forest Service

Department of Commerce
- National Marine Fisheries Service

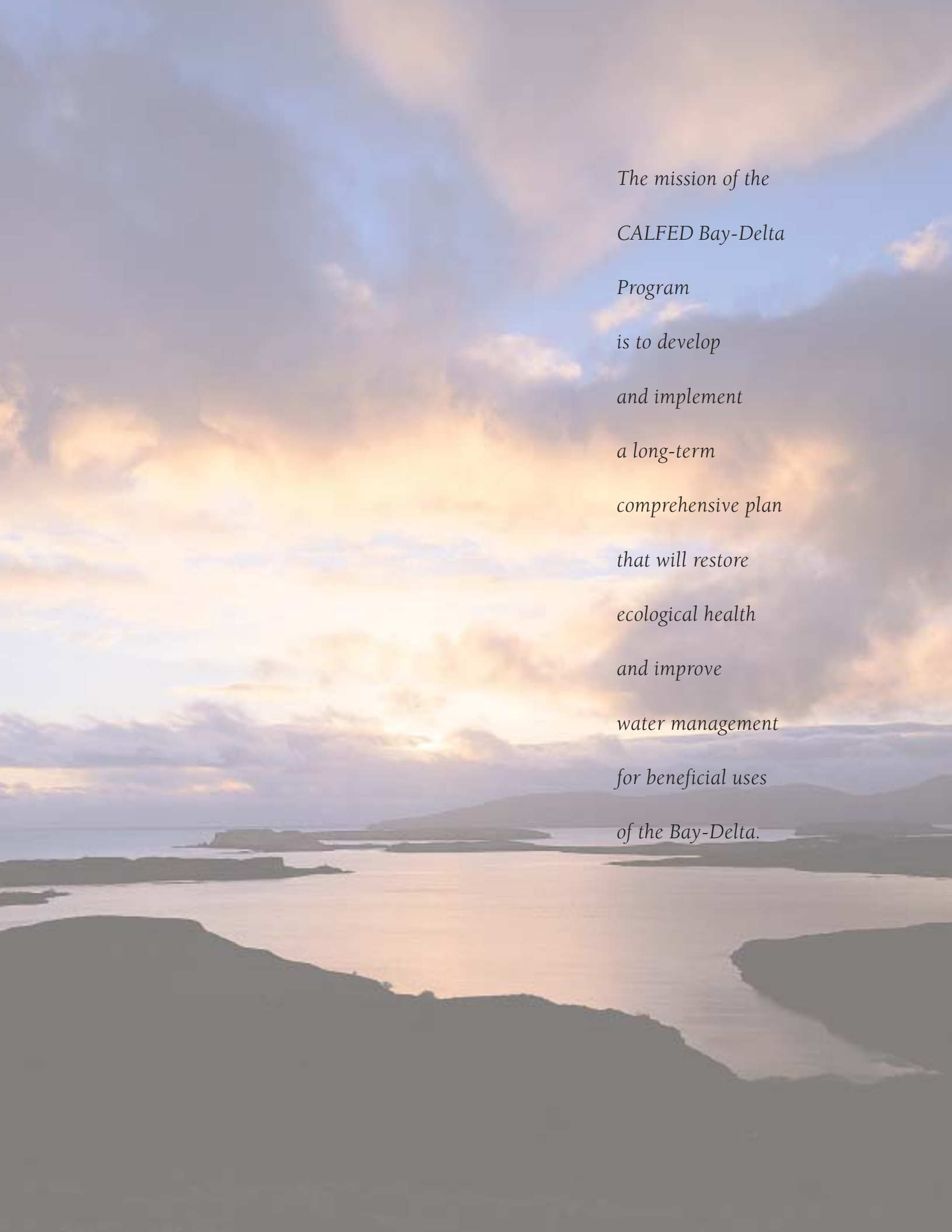
Western Area Power Administration

CALFED BAY-DELTA PROGRAM

The CALFED Bay-Delta Program is a collaborative effort among 23 state and federal agencies (CALFED agencies) to improve water supplies in California and the health of the San Francisco Bay-Sacramento-San Joaquin River Delta Watershed. Under the current governance structure, the CALFED agencies cooperatively implement the Program through their respective agency program authorities, e.g., Federal Central Valley Project Improvement Act, State Proposition 13, State Senate Bill 34, etc., and pertinent funding mechanisms.

In their totality, the individual actions of the CALFED agencies represent the projects and accomplishments shown throughout this report. Additionally, the report's accomplishments are in some instances cumulative in that actions and projects undertaken by CALFED agencies have been ongoing and often pre-date the formation of the CALFED Program.

A fundamental premise of the program is that the agencies can best meet their individual responsibilities by sharing information and cooperating with each other. The CALFED Program is not itself an agency and exercises no authority over the agencies. The program relies on the continuous cooperation of each participating agency, exercising its own legal authority.



The mission of the CALFED Bay-Delta Program is to develop and implement a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta.

TABLE OF CONTENTS

CALFED BAY-DELTA PROGRAM ANNUAL REPORT 2001

EXECUTIVE SUMMARY

Director's Message 1
Accomplishments in 2001 2
Program Highlights 4
Summary of Progress and Balance 12

INTRODUCTION

We All Depend on the Bay-Delta 14
Defining the Conflict 15
Resolving the Conflict 16
An Unprecedented Scope and Vision 17
Timeline 18
Shaping the Solution Through Partnerships 19

REGIONAL VIEW

The Sacramento Region 22
The Delta Region 24
Bay Area Region 26
San Joaquin Valley Region 28
Southern California Region 30

PROGRAM ELEMENTS

A Balanced Approach 32
Science 34
Water Management 37
Storage 40
Conveyance 43
Water Use Efficiency 45
Water Transfers 47
Ecosystem Restoration Program 49
Environmental Water Account 51
Watershed Management 53
Drinking Water Quality 55
Levee System Integrity 57

PROGRAM MANAGEMENT

Program Tracking and Accountability 59
Legislative Actions for 2001 61
Litigation Update 63
Fiscal Information 64
Grants and Loans Project List 69

REFERENCE DOCUMENTS 74

When the CALFED Bay-Delta Program concluded its five-year planning phase last year, many wondered if it could make the transition to a full-scale, cutting edge program capable of resolving ecosystem and water supply reliability problems in California.

As it completes its first full year of implementation, the CALFED Program is building a strong track record in several key areas. More than $500 million has been allocated for water supply, water quality, ecosystem restoration, and levee stability projects throughout California. CALFED's innovative Environmental Water Account provided nearly 300,000 acre-feet of water for environmental needs without reducing deliveries to cities and farms. And through state and federal dry year programs, nearly 300,000 acre-feet was made available to areas suffering from water shortages.

Regional strategies are also beginning to emerge. From the Sacramento Valley Water Management Agreement to water quality exchange programs in the Bay area and Southern California, local groups are developing collaborative, multiple purpose projects to meet their most pressing water needs. These strategies (described on pages 22-32) represent the future of CALFED—funding collaborative, locally-based initiatives to meet the Program's goals.

And perhaps most significant, the Science Program, led by Chief Scientist Sam Luoma, firmly established itself through a series of studies, workshops and panels as an independent, highly credible force for improving the scientific basis of all major projects and programs.

At the same time, however, a number of important program elements are behind schedule—primarily due to a lack of funding. Key projects to increase storage and improve water conveyance through the Bay-Delta system are behind, and the water use efficiency, water quality, watersheds, levee integrity, and science programs are underfunded.

The CALFED Program's commitment to a balanced and integrated approach is what sets this effort apart from any other large-scale restoration or water management program in the nation. It is what keeps diverse stakeholders engaged in the process; it is also what makes it so challenging at times to move ahead.

As we look forward to the year ahead, the CALFED agencies will seek to build upon the collaborative efforts that are well under way, and secure balanced funding from our state, federal, and local partners.

Patrick Wright
Director, CALFED Bay-Delta Program

CALFED BAY-DELTA PROGRAM ACCOMPLISHMENTS

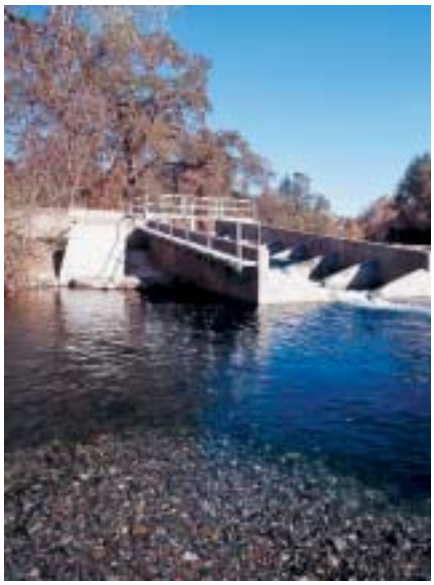
Six years after the signing of the Bay-Delta Accord and subsequent planning and public input, the Bay-Delta Program has met its first year implementation goals and objectives. Major Program accomplishments are listed below for Year 1, grouped by the four program objectives, science and overall program management:

WATER SUPPLY RELIABILITY

- Allocated approximately $200 million from Proposition 13 and other sources to local agencies for water supply, water quality and water use efficiency projects throughout the state
- Initiated or continued planning studies of 5 surface storage projects: Shasta enlargement; Sites Reservoir; In-Delta Storage; Los Vaqueros Expansion; and Upper San Joaquin Storage. Completed Memoranda of Understanding (MOU) with local partners for Sites Reservoir and Los Vaqueros Expansion planning studies
- Completed 16 Memoranda of Understanding or Letters of Intent with 30 local agencies throughout the state to study groundwater storage improvements
- Supported the Governor's Advisory Drought Planning Panel in developing a *Critical Water Shortage Contingency Plan*. Implemented state and federal dry year programs that provided nearly 300,000 acre-feet to areas suffering from water shortages
- Developed and implemented a comprehensive operations plan to coordinate actions and improve water supply reliability

ECOSYSTEM RESTORATION AND WATERSHEDS

- Since 1995, CALFED agencies and stakeholders have funded 326 ecosystem projects for $336 million including projects funded through the Anadromous Fish Restoration Program of the CVPIA. In 2001, $195 million was spent on activities including ecosystem water quality, ecosystem science, strategy planning, and 74 individual ecosystem restoration projects selected through a public solicitation process. Specific highlights include:
  - Began fish passage improvements along 182 river miles
  - Installed 64 fish screens at critical diversion points
  - Conducted 23 studies at $26.5 million for various effects on the Bay-Delta system
- Continued integration of the “single blueprint” for better coordination of ecosystem restoration activities between state and federal agencies
- Funded over 50 locally based watershed projects for $19 million, as well as provided funds in coordination with the Ecosystem Restoration Program to support projects in more than 50 watersheds
- Launched an innovative Environment Water Account that made available 287,000 acre-feet of water in the last year for fish without reducing allocations to farms and cities


Butte Creek Fish Passage

WATER QUALITY

- Developed grant programs for local agencies to address drinking water quality and watershed protection projects throughout the state
- Implemented seven projects in 2001 totaling $26 million for drinking water quality including salinity/selenium treatment and blending and exchanging source waters
- Developed solicitation and selection process for an additional $10 million in drinking water quality projects
- Implemented an ecosystem water quality project in 2001 in the Stockton Deep Water Ship Channel

LEVEE SYSTEM INTEGRITY

- Awarded more than $18 million in year 1 to improve levees on 50 Delta islands while $14.6 million was invested in special projects like ecosystem and levee restoration for water quality and flood protection

SCIENCE

- Conducted $2.5 million in Delta Cross Channel studies to evaluate fishery, water quality and water supply reliability issues
- Hosted the first CALFED Science Conference to engage the scientific community and the public and co-sponsored and participated in the October '01 State of the Estuary Conference
- Convened expert panel and conducted first annual review for the Environmental Water Account, as well as several scientific workshops and program reviews
- Supported and integrated the activities of the independent ecosystem science board, interagency ecological program, EWA science advisors and other independent peer review efforts
- Led the effort to develop an interagency Science Consortium to support common efforts to investigate and share information

PROGRAM MANAGEMENT

- Convened four public workshops throughout the state on Environmental Justice issues in an effort to identify any adverse impacts the Program may have on disadvantaged communities
- Developed new partnership with the Governor's Office for Innovation in Government to address streamlining traditional government business practices
- Established the Bay-Delta Public Advisory Committee, a new 28-member citizens group to advise state and federal agencies on Program implementation

2000-2001 CALFED WATER SUPPLY RELIABILITY HIGHLIGHTS

STRATEGY HIGHLIGHTS

Groundwater Grants & Loans
$23.5 million for 53 projects
(Prop. 13, Chapter 8 Article 4 and Chapter 9 Article 2 , and AB 303)

Groundwater MOUs
16 agreements with counties and local water management agencies

Water Use Efficiency Grants & Loans
$13.4 million for 66 projects

Interim Water Supply Grants
$72 million
(Prop. 13, Chapter 9 Article 4 includes groundwater, water use effciency and conveyance projects)

An on-line water market information and resource for water users

1. *Shasta Storage Evaluations*
2. *Sites Storage Memorandum of Understanding (MOU)*
3. *Delta Storage & Conveyance Evaluations*
4. *Environmental Water Account provided 287,000 acre-feet in transfers for fish without reducing allocations to farms and cities*
5. *Los Vaqueros Expansion Memorandum of Understanding*
6. *• Upper San Joaquin River Storage Evaluations*
   • MWDSC - Friant Water Quality Exchange Partnership
7. *LA urban runoff/groundwater study augmentation*
8. *State and federal dry year programs provided 298,000 acre-feet to water short areas*

New Construction Development

WATER SUPPLY RELIABILITY

PURPOSE

- Water Supply Reliability encompasses an array of projects and approaches to expand water supplies and ensure efficient use of the resource

GOALS

- Working with local and regional agencies, the Program has identified actions that could increase California water supplies by nearly 3 million acre-feet over the next 10 years—enough water to meet the needs of 6 million families annually

ACCOMPLISHMENTS

The CALFED Program made significant progress in the first year to improve California's water supply reliability by providing grants and loans totaling about $200 million which will improve statewide operational flexibility and increase water supply reliability and improve water quality

- **Storage**
  - Initiated or continued planning studies of 5 surface storage projects: Shasta enlargement; Sites Reservoir; In-Delta Storage; Los Vaqueros Expansion and Upper San Joaquin Storage. Completed Memoranda of Understanding with local partners for Sites Reservoir and Los Vaqueros Expansion planning studies
  - Completed 16 Memoranda of Understanding or Letters of Intent with 30 local agencies throughout the state to study groundwater storage improvements
  - Allocated $74 million in loans and grants to local agencies for planning and implementation of groundwater storage improvements
- **Conveyance**
  - Continued design of the Tracy Fish Test Facility to provide critical data on the effectiveness of screening state and federal water project facilities in the South Delta
  - Continued planning and design of permanent fish barriers to Clifton Court Forebay operable tidal and fish barriers in an effort to increase periodic pumping to 10,300 cubic feet per second
- **Transfers**
  - Provided public information and disclosure throughout the year for the "ON TAP" web site, an on-line water market information resource for water users
  - Oversaw development of a standardized method to establish transferable water
  - Continued meetings of interested stakeholders to address and resolve water transfer issues and explore changes to existing law
- **Water Use Efficiency**
  - Awarded $13.3 million for 65 projects—including 37 urban and 28 agricultural
  - Moving forward in defining "appropriate measurement" of water usage and certification of urban Best Management Practices
  - Continued refinement of quantifiable objectives regarding oversight and coordination for agricultural water use

ECOSYSTEM RESTORATION AND WATERSHED MANAGEMENT HIGHLIGHTS

ECOSYSTEM RESTORATION & WATERSHED HIGHLIGHTS

Ecosystem Restoration Grants to date
326 Projects for $336 million

- '97 Approved Projects
- '98 Approved Projects
- '99 Approved Projects
- '00 Approved Projects
- '01 Approved Projects

Watershed Management Grants
Over 50 projects approx. $19 million

- '01 Approved Projects

1. *Butte Creek*
2. *Battle Creek*
3. *Clear Creek*
4. *Sacramento River Conservation Area*
5. *Cosumnes River*
6. *Yolo Bypass*
7. *Tuolumne River*
8. *San Joaquin River*

Spring-Run Chinook Salmon in Butte Creek

ECOSYSTEM RESTORATION AND WATERSHED MANAGEMENT

PURPOSE

- Improving the health of the Bay-Delta system through restoring and protecting habitats and native species

GOALS

- **Ecosystem Restoration**
  - Recover at-risk species, rehabilitate natural hydrology processes to enhance ecosystem water quality, protect and restore functional habitats, reduce negative impacts of non-native species, and improve and maintain water sediment quality for a healthier ecosystem
- **Watershed Management**
  - Increase integration and collaboration of watershed programs with local leadership and continue to better coordinate local, state and federal watershed programs in order to achieve CALFED Program objectives

ACCOMPLISHMENTS

- **Ecosystem Restoration –** Since 1996, CALFED agencies have funded 326 ecosystem projects for $336 million including projects funded through the Anadromous Fish Restoration Program of the CVPIA. Of these projects, 74 were funded in 2001 for $115 million. Specific highlights include:
  - Began fish passage improvements along 182 river miles
  - Installed 64 fish screens at critical diversion points
  - Conducted 23 studies at $26.5 million for various effects on the Bay-Delta system
- **Watershed Management**
  - Funded over 50 locally based watershed projects for $19 million, as well as providing funds in coordination with the Ecosystem Restoration Program to support projects in more than 50 watersheds
  - Formed Interagency Watershed Advisory Team to provide assistance to local watershed groups

2000-2001 CALFED WATER QUALITY HIGHLIGHTS

ECOSYSTEM WATER SUPPLY GRANTS

Ecosystem Water Quality Grants
1 Project for $7 million

8. *Stockton Dissolved Oxygen Investigations*

DRINKING WATER QUALITY GRANTS

Drinking Water Quality Grants
7 Projects for $26 million

1. *Facilitate Water Quality Exchanges for So Cal*
2. *Desalination Research and Innovation Partnership (MWD)*
3. *Bay Area Blending/ Exchange*
4. *Veale-Byron Ag Drainage Reduction*
5. *Bay-Delta Evaluation of Water Quality*
6. *Real-Time Water Quality Monitoring*
7. *Salinity and Selenium Removal for Ag Drainage*

Water Treatment Plant

WATER QUALITY

PURPOSE

- Improve water quality from source to tap for the 22 million Californians whose drinking water supplies come from the Bay-Delta watershed

GOALS

- Collaborate and fund projects that seek to improve the quality of water at its source, seek advancements in treatment technology, research and perform monitoring of the Bay-Delta drinking water quality, continue to look for ways to better manage and deliver water

ACCOMPLISHMENTS

- Implemented seven projects in 2001 totaling $26 million for drinking water quality including salinity/selenium treatment and blending and exchanging source waters
- Developed solicitation and selection process for an additional $10 million in drinking water quality projects
- Worked with science program to facilitate studies and identify sources and solutions of low dissolved oxygen concentrations that hinder upstream migration of certain fish species and violate water quality standards in the Stockton Deep Water Ship Channel
- Implemented one project in 2001 to address ecosystem water quality in the Stockton Deep Water Ship Channel

2000-2001 CALFED DELTA LEVEE SYSTEM INTEGRITY

HIGHLIGHTS

- **CALFED Delta Levee Projects**

1. *McCormack-Williamson Tract (Reclamation District 2110)*
2. *Twitchell Island Levee Setback/Habitat Creation (Reclamation District 1601)*
3. *Decker Island Project*
4. *Franks Tract Channel Islands*

Widespread Flooding

LEVEE SYSTEM INTEGRITY

PURPOSE

- Improving Bay-Delta levees will provide flood protection, ecosystem benefits and protect water supplies needed for the environment, agriculture and urban users by reducing the threat of levee failure and seawater intrusion while lessening levee failures, damage to property and requests for emergency funds

GOALS

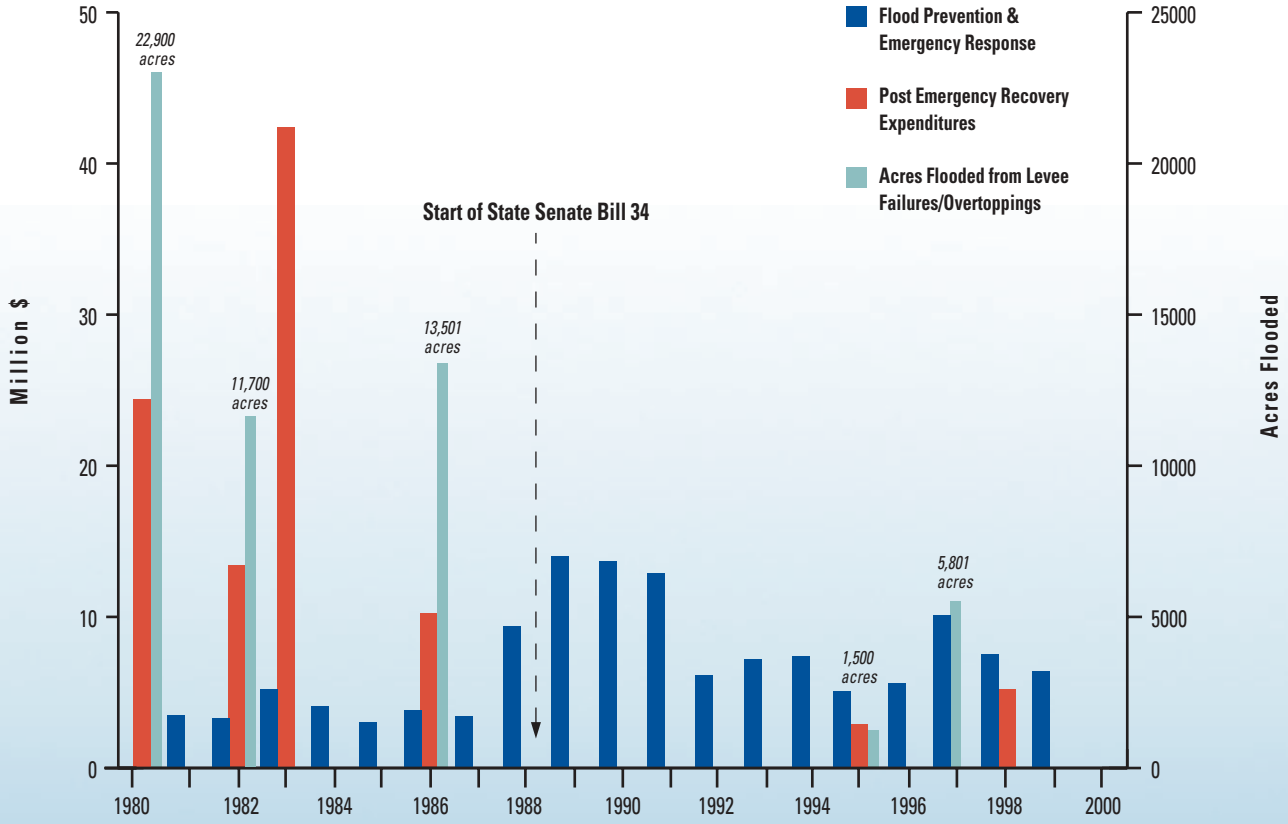
- Balance the need to improve levees to a higher standard for greater protection and fewer emergency responses, while maintaining habitat needs
- Develop adequate and reliable funding, as well as improve the permit process to increase levee stability in the Bay-Delta system

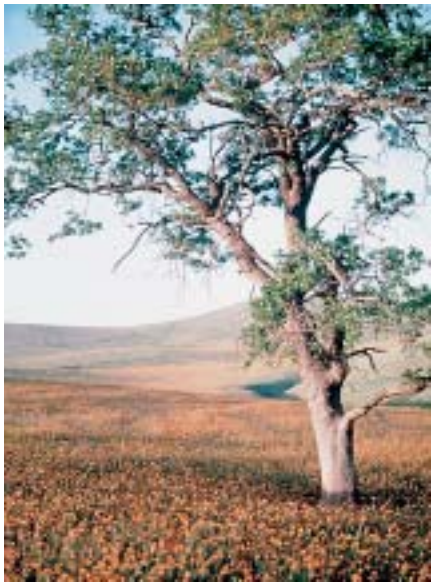
ACCOMPLISHMENTS

- Awarded more than $18 million in Year 1 to improve levees on 50 Delta islands while $14.6 million was invested in special projects like ecosystem and levee restoration for water quality and flood protection
- Efforts thus far to improve Delta levees have led to better water quality protection, enhanced habitat conditions, fewer requests for emergency funds and less acres of land flooded

DELTA LEVEE FLOOD COSTS

POST DISASTER ASSISTANCE COSTS AND ACRES FLOODED





SUMMARY OF PROGRESS AND BALANCE

As this year's report indicates, the CALFED Bay-Delta Program has made significant progress during its first year of implementation. State and federal CALFED agencies have secured and allocated more than $500 million in its first year, primarily from state bond funds. Key programs, such as ecosystem restoration, groundwater storage and recycling are meeting or exceeding their funding and program commitments. Milestones have been achieved in many key program areas, and tangible results of some projects already can be seen.

The following is a brief description of the status of each program element:

- **Storage**. Efforts to improve the use of groundwater storage are ahead of schedule, with $74 million provided to local agencies this year for planning and implementation of groundwater projects. The CALFED agencies signed agreements with local partners for Sites Reservoir and Los Vaqueros Expansion planning studies. Evaluation of a potential new off-stream storage reservoir at Sites and exploration of an In-Delta storage facility have missed some interim milestones, but increased funding in future years would allow planning studies for these projects to be completed on schedule. Studies of the expansion of Los Vaqueros Reservoir and Shasta Reservoir have also missed interim milestones due to lack of funding.
- **Conveyance**. Planning and design for installation of permanent fish barriers and other modifications in the Clifton Court Forebay are on track, and plans to increase periodic pumping are still on schedule. Although construction of the Tracy Fish Test Facility was delayed by six months due to the lack of funds, the project is back on course and expects to remain on schedule. However, the lack of funding has delayed a planned intertie between the State Water Project and the Central Valley Project near Tracy and the San Joaquin Flood Control Project.
- **Transfers**. The program is on track. Year 2 of implementation will focus on coordinating and streamlining the water transfer process and establishing the Water Transfer Information Clearinghouse.
- **Water Use Efficiency**. Efforts to define "appropriate measurement" of water usage, certify urban Best Management Practices and refine quantifiable objectives for water use efficiency are proceeding on schedule. More than $13 million in grants and loans was awarded for 65 projects in 2001, but participation in the loan program has been less than expected.
- **Ecosystem Restoration**. The program is on track, with over $150 million allocated in year 1 primarily from state and local funds as part of the "Single Blueprint" for ecosystem restoration and regulatory commitments. This is in addition to approximately $270 million of early implementation projects financed by the federal Bay-Delta Act and Category 3 funds in the prior years.
- **Environmental Water Account**. The EWA provided 287,000 acre-feet of water for environmental purposes during its first year of operation for Endangered Species Act purposes without reducing allocations to farmers and cities while meeting the commitments provided under the biological opinions (ESA) not to reduce water. The EWA expects to have Tier 3 water available for unforeseen emergencies in Year 2.

- **Watershed Management**. Progress has been made on outreach and technical assistance to local communities, with more than $18 million awarded this year to 54 grant recipients for watershed projects.
- **Drinking Water Quality**. Five early implementation projects—Bay Area Blending/Exchange, Veale-Byron Tract, Real-Time Water Quality Monitoring, Salinity/Selenium, and Delta Contaminant Sources/Load—are moving forward. About $20 million in grant funding is expected to be awarded for water quality projects in spring 2002.
- **Levees**. More than $18 million was awarded in Year 1 for levee maintenance on 50 Delta islands, while $14.6 million was invested in special projects for ecosystem, and levee restoration, water quality, flood protection and beneficial reuse and emergency response/preparedness. Although levee maintenance funding was available, the program is not funded at a level that allows progress toward Delta levee restoration. Efforts to improve all Delta levees to a base level of protection (Public Law 84-99 standard) are behind schedule, as are a planned Delta levee risk assessment and risk management plan, the Suisun Marsh levee program, and the dredge material reuse plan.
- **Science**. The Science Program conducted peer review for large projects and the EWA, conducted scientific workshops, provided oversight for the Delta Cross Channel investigations, and developed a framework for performance measures.
- **Program Oversight and Coordination**. This program element initially received adequate funding, but the state's hiring freeze and other general fund reductions will require the Program's oversight and coordination activities to be scaled back significantly. These activities include: regional coordination and implementation, environmental justice and other public outreach efforts, legal and litigation support, budget coordination and integration, finance planning and program tracking.

YEAR 1 CONCLUSION

In its first full year of implementation, the CALFED Bay-Delta Program moved forward aggressively to carry out the goals and objectives of the August 2000 Record of Decision. While many Program actions are just getting under way, significant progress has been made in every program area, but particularly those supported by state bond funds, including Groundwater Storage, Environmental Water Account, Ecosystem Restoration and Conveyance, and by federal Title XVI funds for water recycling. The Surface Storage, Levee, Water Quality, Science and Watershed Management Programs also made substantial progress at reduced funding levels.

YEAR 2 AND BEYOND

In year 2 (fiscal year 2001-'02), the Governor and the Legislature have contributed $508 million in funding for the Program, of which $62.6 million is from the state's general fund. Congress has approved $30 million in funding in the Energy and Water Development appropriations to support the goals of the Bay-Delta Program. Although the state and federal appropriations signal continued involvement and support in the effort, a larger amount of funding is required to meet the commitments across all program areas. Progress in Year 2 also will be impacted by a $20 million general fund reduction in the state CALFED budget and the moratorium on state hiring. These constraints on the ability to secure adequate staff and financial resources will translate into further delays in some program elements.

WE ALL DEPEND ON THE BAY-DELTA

The Bay-Delta provides drinking water for 22 million people. It supports California's trillion-dollar economy, including its $27 billion agricultural industry, and local homes and infrastructure. It is the largest estuary on the west coast—home to 750 plant and animal species—and it supports 80 percent of the state's commercial salmon fisheries.

DEFINING THE BAY-DELTA CONFLICT

California's Bay-Delta is an ecosystem in trouble:

- Straining under dual roles as critical habitat and water project crossroads, the Bay-Delta is in decline from decades of competing demands
- Today, it no longer functions as a healthy ecosystem or as a reliable source of water
- Several species—including Chinook salmon and steelhead trout—are in decline or endangered
- Water supplies are increasingly unreliable, jeopardizing the world's sixth-largest economy and 5 million acres of highly productive agricultural lands
- Water quality is degraded, making it difficult and expensive to meet drinking water standards

RESOLVING THE CONFLICT

The CALFED Bay-Delta Program is a cooperative effort involving more than 20 state and federal agencies. The Program will be implemented in stages over the next 30 years to solve California's environmental and water problems.

IMPLEMENTATION PRIORITIES INCLUDE:

- Apply independent scientific review and adaptive management to all major activities with accurate and frequent reports to the public
- Conduct early and continuous agency, stakeholder and public involvement
- Maintain a balanced and integrated Program
- Support local and regionally based strategies to achieve the Program's goals
- Develop performance standards and milestones for each program element
- Meet milestones and commitments in the Bay-Delta Plan

AN UNPRECEDENTED SCOPE AND VISION

- Strong commitment to independent scientific review, planning and tracking

- A coordinated approach by more than 20 state and federal agencies

- Eleven major program elements supporting multiple objectives

- Extensive public and local involvement in shaping each program element

- Funded projects in multiple watersheds encompassing more than 40,000 square miles—more than 70 percent of California's land

CALFED BAY-DELTA PROGRAM TIMELINE

December 1994
Bay-Delta Accord

November 1996
Prop 204 Funds Approved by Voters

March 2000
Prop 13 Funds Approved by Voters

June 2000
Framework Announced

July 2000
Year 1 Funding
State $516.4 million
Federal $56.2 million
Other $221.6 million

July 2000
Programmatic Environmental Document Finalized (EIS/EIR)

August 2000
Science Program Established

August 2000
Record of Decision Signed; CALFED Program Implementation Begins

July 2001
Year 2 Funding Begins
State $508.0 million
Federal $81.4 million
Other $262.8 million

November 2004
Major Decision and Review Points for Storage, Water Quality and Water Use Efficiency Elements

Completion of Stage 1 – First Seven Years
Foundation for Long Term Program Direction Completed

The CALFED Bay-Delta Program is a comprehensive collaborative effort that will take 30 years or more to complete.

Anderson Cottonwood Irrigation District Fsh Passage Improvement Project

SHAPING THE SOLUTION THROUGH PARTNERSHIPS

Extensive and sustained levels of public involvement have shaped every aspect of the CALFED Bay-Delta Program.

Partnerships with local communities and groups are being forged to combine resources, share knowledge and resolve problems at the local, regional and state level.

Merced River Restoration Project:

"You redesign the river, you restore it to a more naturally functioning (state), and hopefully you need less water to make the system work the way it's supposed to—everybody wins."
—Chris Robinson, General Partner Robinson Cattle Company

Potential Sites Reservoir Project:

"Local needs are going to be met first, you're going to have input as to how this is going to happen. We have a chance now to say what it is we want, what it is we need, and I think we darn well better get out and do that."
—Mary Wells, Farmer Sites, California

Upper Yuba River Studies Program:

"...In (Nevada) county, we have seized the opportunity that CALFED gave us. They've given us a lot of support and put a lot of money into the collaborative decision-making process in our own backyard."
—Elizabeth Martin, Nevada County Board of Supervisors Chairwoman

ACTIVITIES THAT SUPPORT PARTNERSHIPS

- Scoping Meetings
- Technical Workshops
- The Newly Formed Bay-Delta Public Advisory Committee and Related Work Group Meetings
- Media Events
- Annual Reports
- Newsletters
- Coordinating with Local Groups
- Environmental Justice
- Brochures
- Briefing Materials
- Comprehensive Web Site http://calfed.ca.gov
- Toll-free Public Information Telephone Line (800) 700-5752
- Presentations
- Technical Documents
- Tribal Participation
- Science Consortium

June 2001 Policy Group Meeting

Environmental Justice Workshop in Richmond

Delta Cross Channel News Coverage

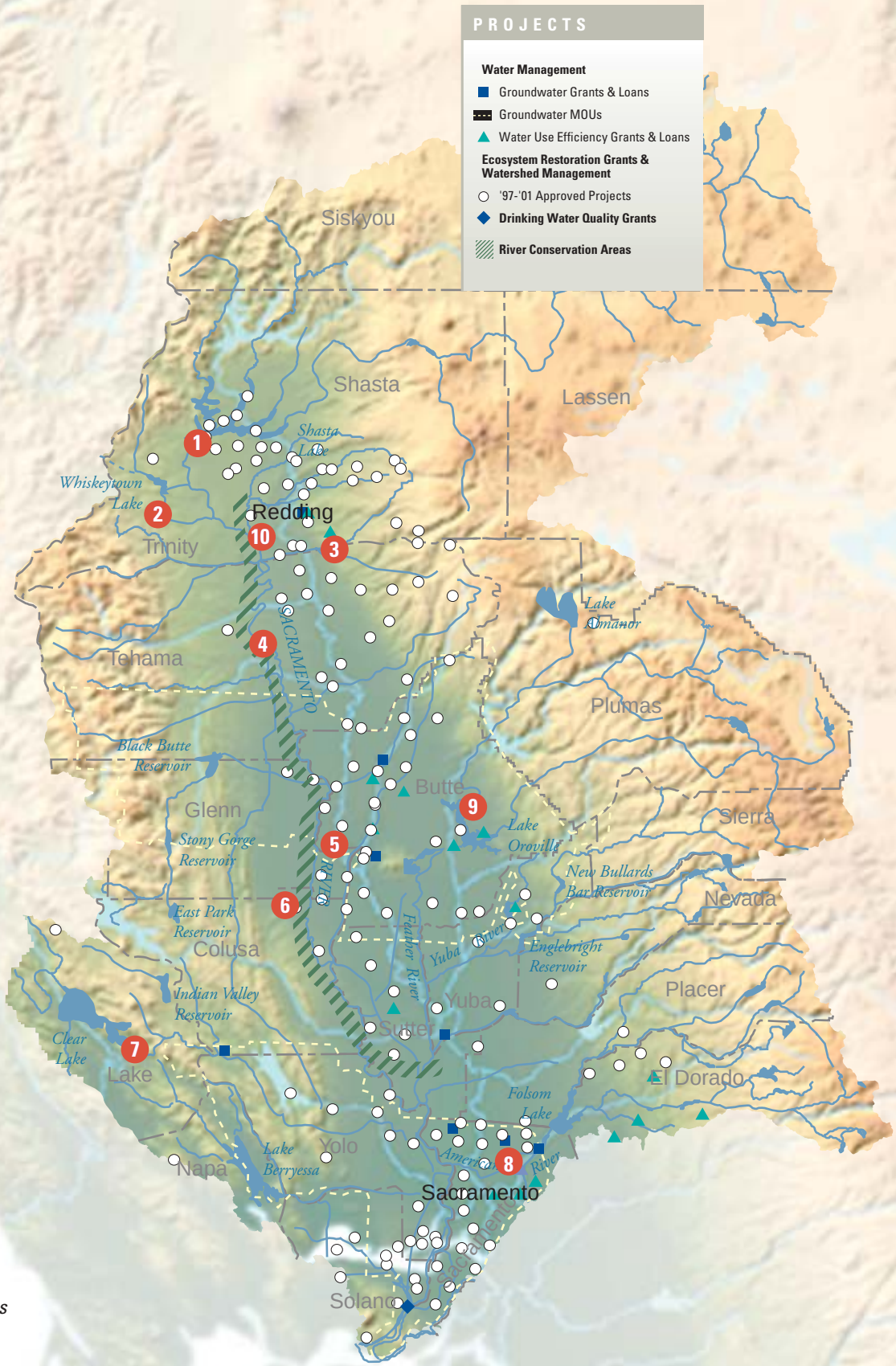
REGIONAL VIEW

The CALFED Agencies are investing in collaborative regional projects that provide local benefits while helping achieve overall Program objectives and commitments.

THE CALFED BAY-DELTA REGIONS

- The Sacramento Valley Region
- The Delta Region
- The Bay Region
- The San Joaquin Valley Region
- The Southern California Region

The Regional View provides information on regional CALFED Program highlights and accomplishments. Locally based projects have been funded through individual and collaborative resources by the CALFED agencies and stakeholders.



HIGHLIGHTS:

1. *Evaluate Enlargement of Shasta Dam*
2. *Saeltzer Dam Removal on Clear Creek*
3. *Battle Creek Fish Passage & Dam Removal*
4. *Improve Red Bluff Diversion Facilities*
5. *Sacramento River Conservation Area* (Continuous riparian corridor along 222 miles of the Sacramento River between Keswick and Verona)
6. *Sites Reservoir Memorandum of Understanding and Studies*
7. *Mercury Assessment—Clear Lake & Cache Creek*
8. *Lower American River Corridor Management Plan*
9. *Butte Creek Fish Passage and Dam Removal*
10. *Anderson-Cottonwood Irrigation District Fish Screens and Ladders*

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Participated in an agreement with local partners to study the 1.8 million acre-foot Sites Reservoir off-stream storage project
- Funded over 120 ecosystem restoration efforts to date, including 47 projects to improve fish passage on rivers and streams. A small dam that blocked salmon passage on Clear Creek was removed, and CALFED agencies provided more than $10 million for a state-of-the-art fish screen and ladder project for the Anderson-Cottonwood Irrigation District
- Dedicated more than $2 million for nine water use efficiency grants to help farmers irrigate more effectively and conserve water
- Signed agreements with six local water agencies to study groundwater storage improvements
- Funded over 10 groundwater loans and grants for recharge construction and storage pilot projects
- Worked with local stakeholders to determine feasibility of introducing Chinook salmon and Steelhead to the Upper Yuba River
- Began to assemble and interpret salmon data for individual tributaries and the Sacramento mainstem with the goal of relating trends in threatened groups to restoration actions

THE SACRAMENTO VALLEY REGION:

- Provides 60 percent, or 22 million acre-feet of the water flowing into the Delta
- Offers major habitat/spawning ground for several threatened and endangered fish species
- Contributes significantly to the state's farmlands and agricultural output

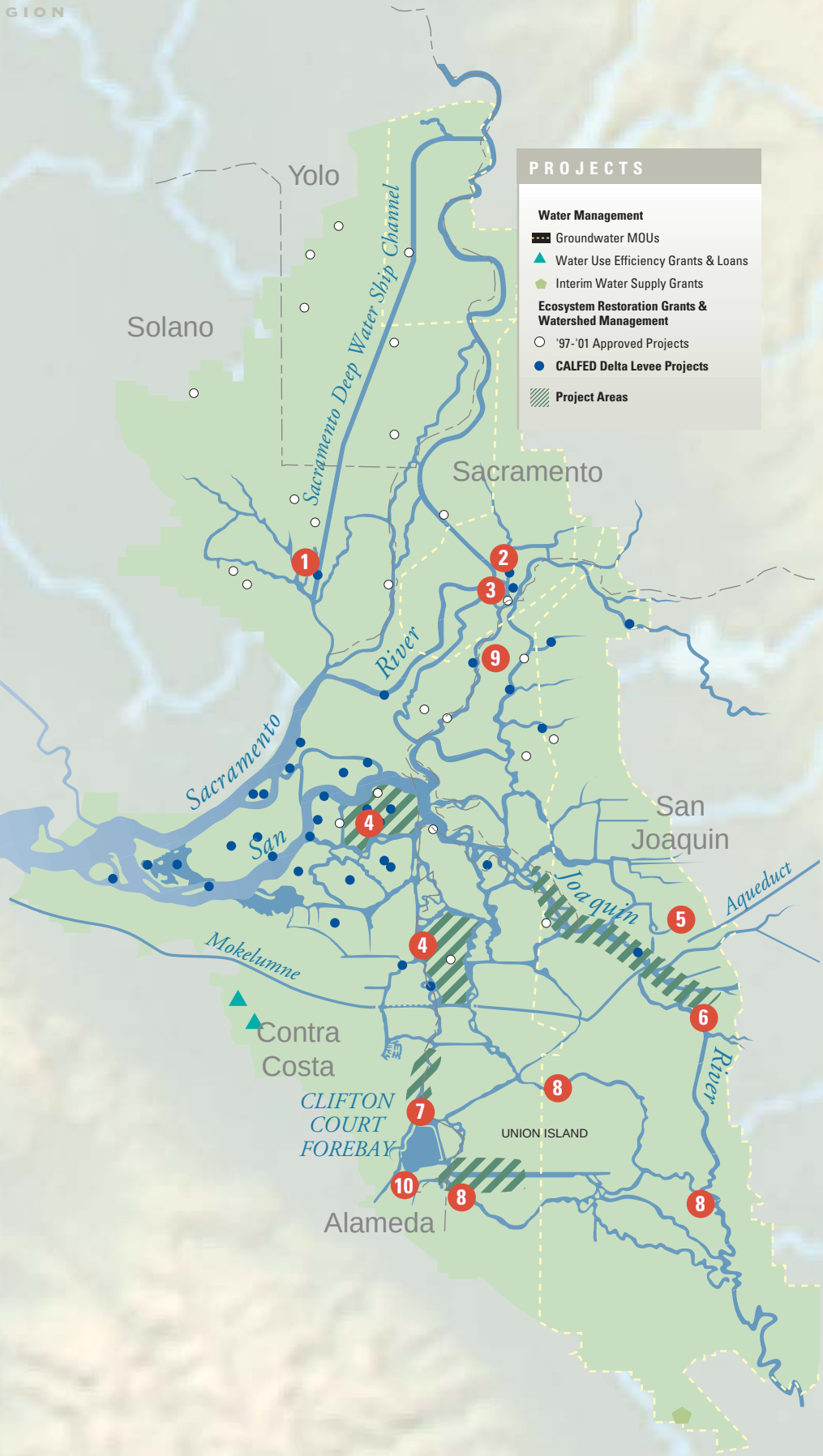
Red Bluff Diversion Dam

ACID Fish Screening and Ladders

YEAR 1 FUNDING
43 projects
$12,587,729.00

REGIONAL VIEW

THE DELTA REGION



HIGHLIGHTS:

1. *Yolo Bypass Habitat Restoration*
2. *McCormack Williamson Tract Habitat Restoration*
3. *Delta Cross Channel and Through Delta Facility Operational Studies*
4. *In Delta Storage (Potential) "Delta Wetlands Project"*
5. *Sub-Surface Drip Irrigation on Asparagus*
6. *Stockton Deep Water Dissolved Oxygen Investigation*
7. *Clifton Court Intake and Fish Screens*
8. *Fish & Flow Control Structures (Temporary / Permanent) & Dredging*
9. *Staten Island Restoration*
10. *Tracy Fish Test Facility*

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Invested $18 million to improve Delta levees on over 50 Delta islands resulting in better water-quality and flood protection and greatly enhanced habitat conditions
- Funded over 70 ecosystem restoration projects to date, including in-channel island restoration, fish screens, and riparian habitat restoration
- Funded seven watershed projects including flood protection, creek restoration strategies and stewardship
- Planned for construction of the Tracy Fish Test Facility to provide data on the effectiveness of screening facilities in the South Delta
- Worked on the South Delta Improvement Program to install permanent fish and flow control structures and modify Clifton Court Forebay to eventually increase periodic pumping to 10,300 cubic feet per second
- Began environmental documentation for North Delta Flood Protection improvements
- Explored options for addressing drainage problems in the Delta
- Continued work on the Delta Dredge and Reuse Strategy
- Continued work on developing practical ways to slow, stop, and reverse island subsidence
- Successfully implemented and reviewed an Environmental Water Account, designed to manage water operations so that they both improve water supply reliability and protect targeted fish species
- Initiated several studies:
  - Feasibility of a through-Delta diversion facility to the Sacramento River
  - Feasibility of alternatives for In-Delta storage
  - Operational studies to address fishery and water quality impacts
  - Approval to begin dissolved oxygen studies in the Stockton Deep Water Ship Channel
  - Sources and concentrations of contaminants in the Bay-Delta water
  - Evaluate factors influencing outcomes and impediments in restoring breached islands in the Delta
  - Identify mercury distributions and contamination patterns in the Delta

THE DELTA REGION:

- Up to 47 percent of the Delta's flow is diverted in dry years from the Delta for beneficial uses
- Supports 750 plant and animal species including 120 fish species
- Diversion point for irrigation water to California's $27 billion agricultural industry
- Contains the largest wetland habitat in the western United States

Delta Cross Channel

Tracy Fish Facility

YEAR 1 FUNDING
19 projects
5,916,272.00

REGIONAL VIEW

THE BAY REGION

HIGHLIGHTS:

1. Petaluma Marsh Expansion
2. Napa River Floodplain Restoration Project
3. Cullinan Ranch Project
4. Suisun Marsh Management and Restoration
5. Suisun Marsh Fish Screens
6. Los Vaqueros Expansion
7. Guadalupe River Restoration
8. San Pablo Baylands
9. Bay Area Blending/Exchange

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Completed a Memorandum of Understanding with local partners and initiated studies to evaluate the expansion of Los Vaqueros Reservoir
- Began studies on the feasibility of a San Luis Reservoir bypass to improve the quality of water imported to the Bay Area from the state and federal water projects
- Signed a Memorandum of Understanding and started feasibility studies for the Bay Area Blending and Exchange Study aimed at improving water quality by blending and exchanging source waters among local providers
- Hosted the first CALFED Bay-Delta Program Science Conference to engage the scientific community and the public. Co-sponsored and participated in the October 2001 State of the Estuary Conference
- Contributed to funding 40 ecosystem restoration projects to date, including Napa River floodplain restoration, fish screens in Suisun Marsh and improvements to the Petaluma Marsh
- Allocated nearly $2.5 million to provide rebates to Bay Area households that install ultra low-flow toilets
- Funded over five groundwater loans and grants for recharge construction and storage pilot projects
- Reviewed and supported plans for establishing a coordinated wetlands monitoring program in the Delta
- Reviewed and recommended future directions for the Bay Program of the Interagency Ecological Program, a premier aquatic monitoring program in the Bay
- Reviewed and began revision and multi-agency coordination of water quality monitoring conducted by the Interagency Ecological Program
- U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, Department of Fish and Game, Department of Water Resources and Suisun Resource Conservation District established a charter to begin work on a single blueprint for ecosystem restoration of Suisun Marsh

THE BAY REGION:

- The Bay and Delta form the west coast's largest estuary
- Drains more than 40 percent of the state's water
- Is America's fourth largest metropolitan area and location of Silicon Valley

Suisun Marsh

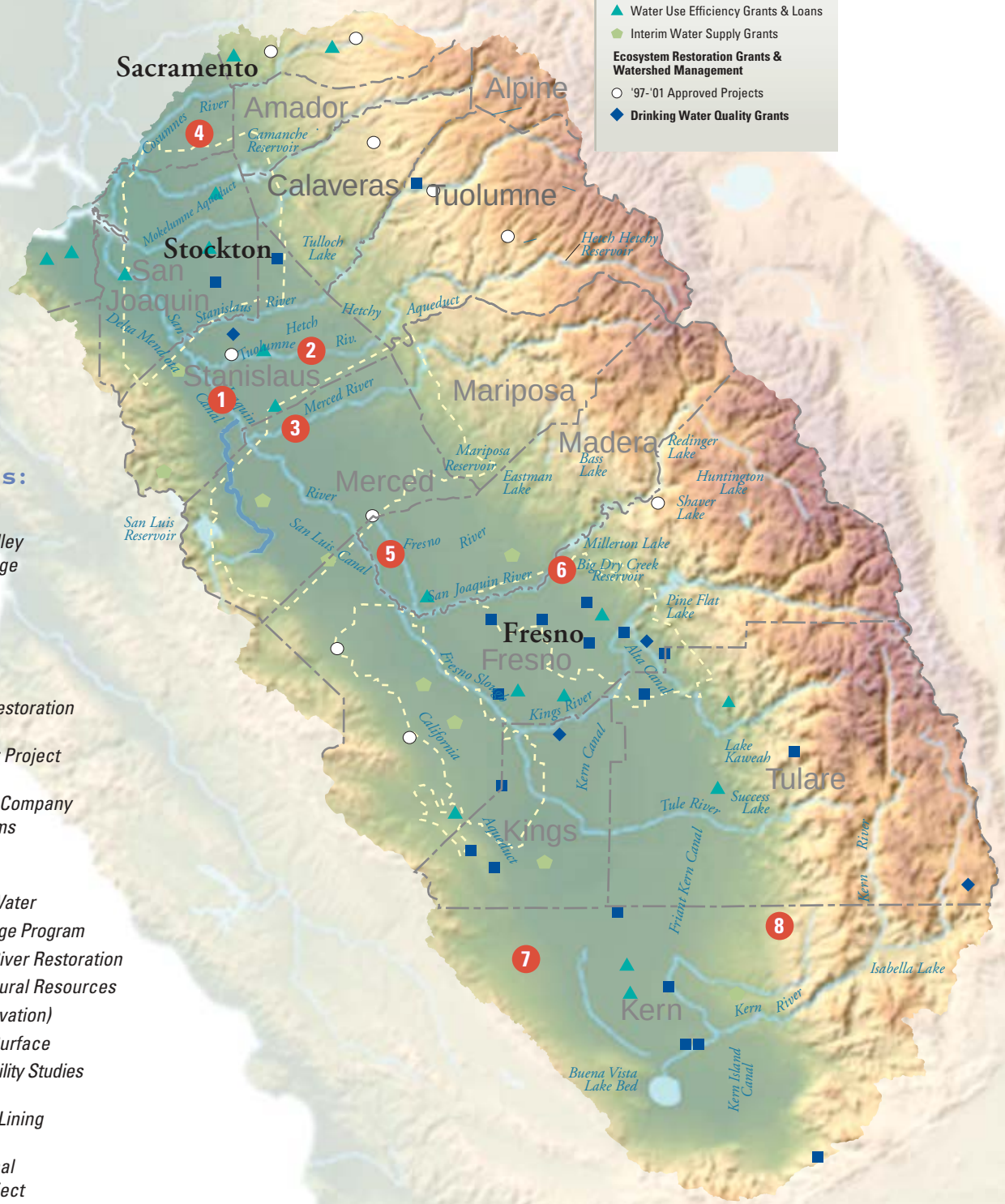
Los Vaqueros Reservoir

Recharge Pond

YEAR 1 FUNDING
17 projects
$5,916,354.00

REGIONAL VIEW

THE SAN JOAQUIN VALLEY REGION



HIGHLIGHTS:

1. San Joaquin Valley Regional Drainage Management
2. Tuolumne River Restoration
3. Merced River Restoration
4. Cosumnes River Project
5. Columbia Canal Company Irrigation Systems Improvement
6. • Friant-MWD Water Quality Exchange Program
   • San Joaquin River Restoration (Friant and Natural Resources District Conservation)
   • San Joaquin Surface Storage Feasibility Studies
7. Lost Hills Canal Lining
8. Kern-Tulare Canal Automation Project

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Funded 51 ecosystem restoration projects, including improving riparian and stream habitats on the San Joaquin, Merced, Tuolumne and Stanislaus rivers
- Approved $3.4 million in funding for 11 water use efficiency projects to help farmers save water
- Began feasibility studies for the lower San Joaquin River flood protection improvements
- Launched the Salinity and Selenium Project to build a pilot plant to treat agricultural drainage and produce water for reuse
- Signed agreements with four local water agencies to study groundwater-storage improvements
- Explored water quality exchange partnership between Friant Water Users Association and Metropolitan Water District
- Funded over 10 groundwater loans and grants for recharge construction and storage pilot projects
- Began evaluation of selenium effects from San Joaquin River discharges to the Delta
- Implemented state and federal dry year programs to provide over 200,000 acre-feet to water short areas

THE SAN JOAQUIN VALLEY:

- Produces 45 percent of the nation's fruits and vegetables
- Is the drainage for seven major Sierra Nevada rivers draining into it
- Anticipates population to double over the next 20 years

Water Use Efficiency for Irrigation

Merced River Restoration

Agriculture Production

YEAR 1 FUNDING
39 projects
$24,423,489.00

REGIONAL VIEW

THE SOUTHERN CALIFORNIA REGION

PROJECTS

Water Management

- Groundwater Grants & Loans
- Groundwater MOUs
- Water Use Efficiency Grants & Loans
- Interim Water Supply Grants

Watershed Management

- Approved Projects

HIGHLIGHTS:

1. *Water Conservation Recycling and Groundwater Desalination in San Diego*

2. *Conservation Rebate Programs*
   - *Commerical*
   - *Industrial*
   - *Institutional*

3. *Landscape Water Consumption Controller*

4. *Chino Basin Water Use Efficiency*

5. *Storm Water Augmentation Study*

6. *Wetland Restoration on the Santa Ana River*

7. *Desalination Research and Innovation Partnership (DRIP)*

8. *Water Quality Exchange Partnership with Friant Water District (MWD/Friant)*

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Signed agreements with five local water agencies to study ways to improve groundwater storage
- Provided nearly $1.9 million for 14 water use efficiency programs in urban areas
- Began a desalination research and innovation partnership at Metropolitan Water District resulting in three desalting facilities and final design plans for three more
- Funded over 20 groundwater loans and grants for recharge construction and storage pilot projects
- Funded restoration of wetlands and river systems to protect endangered and threatened fish in Southern California, reducing the demand for water from the Bay-Delta ecosystem
- Implemented state and federal dry year programs to provide approximately 80,000 acre-feet to water short areas

BENEFITS FLOW SOUTH AND NORTH

Implementation of CALFED's projects in the Southern California Region will:

- Produce more reliable, higher-quality water statewide
- Reduce the need for additional water from the Bay-Delta to meet the growing needs of the region
- Enhance ecosystem restoration in the Bay-Delta and in the region
- Expand groundwater storage and pumping capability
- Use water efficiently through conservation, recycling and water management

SOUTHERN CALIFORNIA REGION:

- Inland Southern California is among the fastest growing regions in North America
- Southland water users conserve 480,000 acre-feet of water a year and produce 230,000 acre-feet of recycled water—reducing the demand for additional Bay-Delta water and meeting the needs of a growing population
- Southern California's large contribution to the state's economy depends on a more reliable water supply, some of which is imported from the Delta

High Efficiency Clothes Washer Program

Santa Ana River in Riverside,
Arundo and Wetlands Improvement

YEAR 1 FUNDING
36 projects
$20,973,705.00

A BALANCED APPROACH

Launched in the summer of 2000 with broad public support, the CALFED Bay-Delta Program Record of Decision is a balanced, comprehensive approach to reduce conflicts over limited water supplies and to address California's long-term water needs.

The Bay-Delta Program is unique in its approach to solving California's environmental and water problems. The Bay-Delta solutions address four interrelated, interdependent program areas concurrently.

RESOURCE MANAGEMENT GOALS

Four resource management goals are implemented through 11 major program elements.

PROGRAM ELEMENTS

- Science
- Water Management
- Storage
- Conveyance
- Water Use Efficiency
- Water Transfers
- Ecosystem Restoration
- Environmental Water Account
- Watershed Management
- Drinking Water Quality
- Levee System Integrity

Fish are Dyed for Delta Cross Channel Studies

CALFED SCIENCE PROGRAM

Integrating world-class science and peer review into every aspect of the Bay-Delta Program, CALFED is developing the best scientific information possible to guide decisions and evaluate actions that are critical to its success.

GOALS

- To establish a body of knowledge that is unbiased, relevant, authoritative and integrated, while communicating that knowledge to the scientific community, agency managers, stakeholders and the public
- Establish protocols and incorporate independent peer review into all Program activities
- Develop science-based performance measures for each CALFED program

ACCOMPLISHMENTS

- Developed directed research processes to identify and provide independent peer review of CALFED research needs
- Developed plans for each program element in order to incorporate peer review into activities
- Initiated and compiled performance measures within and across individual programs
- Hosted the first CALFED Science Conference to engage the scientific community and the public and co-sponsored and participated in the October '01 State of the Estuary Conference
- Funded The Estuary Newsletter's publication of a Delta Cross Channel fact sheet
- Convened expert panel and conducted first annual review for the Environmental Water Account, as well as several scientific workshops and program reviews
- Supported and integrated the activities of the independent ecosystem science board, interagency ecological program, EWA science advisors and other independent peer review efforts
- Completed or solicited for several monitoring plans to identify existing needs
- Began applying adaptive management within the program
- Published two reviews of ecosystem restoration indicators
- Led the effort to develop an interagency Science Consortium to support common efforts to investigate and share information
- Continued operational studies to address fishery and water quality impacts of Delta Cross Channel (DCC)

Turlock Irrigation District Project Event

State of the Estuary Conference
Posterboard Session

PRIORITIES

- The Science Program's priorities include:
  - Conduct adaptive management experiments
  - Build population models for at-risk species
  - Establish integrated science programs in complicated field settings
  - Compare relative effectiveness of different restoration strategies
  - Understand intertwined implications of all CALFED actions
  - Advance the scientific basis of regulatory activities
  - Develop performance measures
  - Coordinate and extend existing monitoring
  - Increase relevant scientific analyses of existing data

Delta Cross Channel Studies

PROGRAM REVIEWS AND WORKSHOPS

The different goals of science must move forward together, integrated across the other program elements that spread across five regions with different needs.

ADAPTIVE MANAGEMENT

Interdisciplinary Knowledge of Critical Unknowns	Integrating Scientific Knowledge into Management	Monitoring	Broad Communication of Science Knowledge and Scientific Activities
PROGRAM REVIEWS ■ Mercury Program Review ■ Stockton Ship Channel Program Review ■ Delta Cross Channel Program Review ■ Upper Yuba Program ■ Environmental Water Account Annual Review	**WORKSHOPS** ■ Sacramento Splittail: Life History ■ EWA and Salmon ■ Common Data Management Strategy ■ Hydrodynamics and Salinity Response to Levee Breaches in Suisun Marsh ■ Large Scale Adaptive Management ■ EWA and Delta Smelt ■ Adaptive Management Concepts (ISB) ■ State of Estuary Conference ■ Instream Flow Modeling/Biological Links (Bay-Delta Modeling Forum)	**DEVELOP MONITORING PLAN** ■ Wetlands ■ Reviews of Ecosystem Restoration ■ Indicators ■ Aquatic Monitoring Plan ■ Terrestrial Amphibian Monitoring Plan ■ Performance Measure Protocol	**INVITED PRESENTATIONS** ■ State Water Association ■ Environmental Water Caucus ■ Bay Conservation and Development Commission ■ Department of Water Resources Environmental Specialists Conference ■ Technical Committee for Dredge Re-use ■ Educational Workshops on Watershed Restoration and on Monitoring ■ American Association for Advancement of Science: Organized "Science and Water Management in California" ■ California Division of the American Fisheries Society ■ Managing Rivers for Biodiversity ■ Annual IEP Workshop ■ State of Estuary Conference

Water Flow Measurements

WATER MANAGEMENT

Recognizing that no single strategy will resolve California's water and environmental problems, the CALFED Program encompasses an array of projects and approaches to expand water supplies and ensure efficient use of the resource.

Working with local and regional agencies, the Program has identified actions that could increase California water supplies by nearly 3 million acre-feet over the next 10 years—enough water to meet the needs of 6 million families annually.

GOALS

- Maximize use of available water supplies through conservation, water recycling and water quality improvements
- Increase the operational flexibility of water systems at the state, federal and local level through strategic improvements in conveyance and storage capacities
- Develop groundwater and surface water storage projects to boost flexibility and provide additional supplies for agricultural, urban and environmental use

ACCOMPLISHMENTS

- Allocated approximately $200 million from Proposition 13 and other sources to local agencies for water supply, water quality and water use efficiency projects throughout the state
- Initiated or continued planning studies of 5 surface storage projects: Shasta enlargement; Sites Reservoir; In-Delta Storage; Los Vaqueros Expansion and Upper San Joaquin Storage. Completed Memoranda of Understanding with local partners for Sites Reservoir and Los Vaqueros Expansion planning studies
- Completed 16 Memoranda of Understanding or Letters of Intent with 30 local agencies throughout the state to study groundwater storage improvements
- Supported the Governor's Advisory Drought Planning Panel in developing a *Critical Water Shortage Contingency Plan*. Implemented state and federal dry year programs that provided nearly 300,000 acre-feet to areas suffering from water shortages
- Developed and implemented a comprehensive operations plan to coordinate actions and improve water supply reliability

Shasta Lake and Dam

PUBLIC AND PEER REVIEW

- Overview in progress by stakeholders and review through the state's drought contingency plan and the Water Management Strategy Evaluation Framework

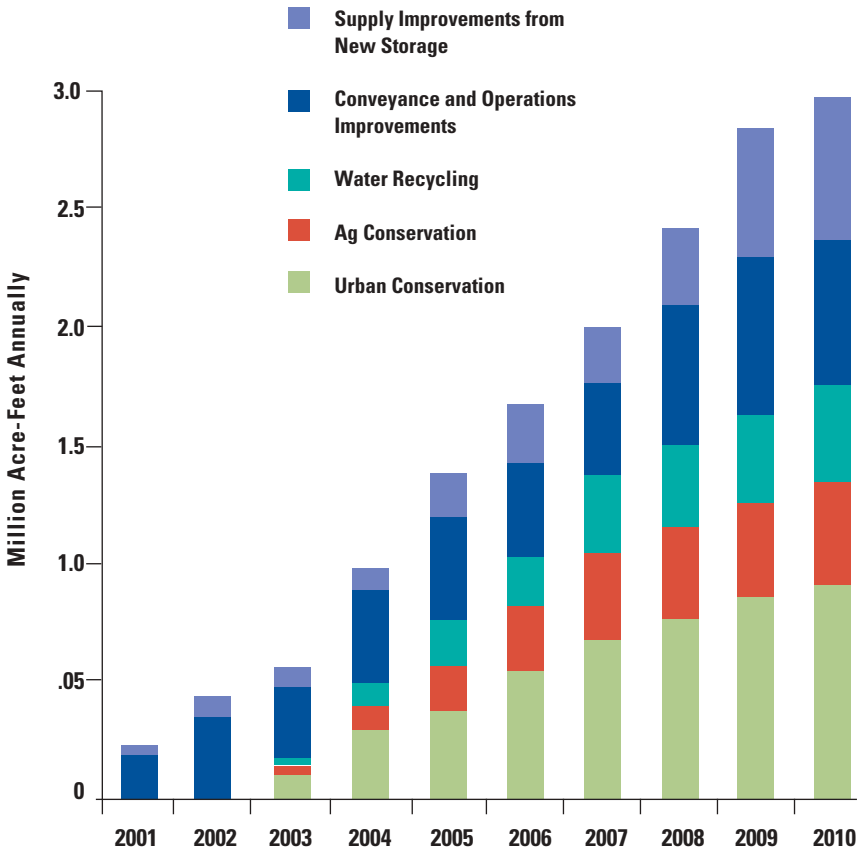
PERFORMANCE MEASURES

- Performance is tracked by overall increases in yield and the flexibility of California's water system through the four primary elements that contribute to the strategy: **storage**, **conveyance**, **water use efficiency**, and **water transfers.**

Water Reclamation

Urban Conservation

POTENTIAL IMPROVEMENTS IN WATER SUPPLY RELIABILITY



POTENTIAL IMPROVEMENTS IN WATER SUPPLY RELIABILITY

WATER MANAGEMENT ACTION

Water Use Efficiency (first 7 years)	**Acre-Feet/year**
Urban Conservation	520,000 to 690,000
Agricultural Conservation	260,000 to 350,000
Water Reclamation	255,000 to 310,000
Potential Increase from Water Use Efficiency	**Up to 1.4 Million Acre-Feet/year**
Conveyance and Operational Improvements	**Up to 600,000 Acre-Feet/year**
Includes: SWP Pumping of (b)(2) Upstream Releases, Export/Inflow Ratio Flexibility, Increased Banks Pumping Plant Capability, Joint Point of Diversion and San Luis Bypass	
Potential Increase from New Storage	**600,000 to 900,000 Acre-Feet/year***
Total Potential Increase in Water Supply Reliability from Water Use Efficiency, Conveyance and Operations Improvements and New Storage	**Up to 2.9 Million Acre-Feet/year**

POTENTIAL NEW STORAGE CAPACITY*

CALFED Storage Projects	**Acre-Feet**
Enlarge Shasta Lake	300,000
Enlarge Los Vaqueros Reservoir	400,000
In-Delta Storage	250,000
Sites Reservoir	1,800,000
Upper San Joaquin River Storage	250,000 to 700,000
Groundwater Storage and Conjuctive Use	500,000 to 1,000,000
Total Potential New Storage	**4.5 Million Acre-Feet**

Storage Capacity versus Water Supply Reliability

Total increase in storage capacity is not a direct measure of increased water supply reliability. The estimate of increased water supply reliability provided here is the quantity of water expected to be available annually from new storage during extended dry periods.

New storage capacity would also be used to provide improved flows and reduced effects of diversions for fish, improved water quality, and improved conjunctive management of surface and groundwater.

San Luis Reservoir

STORAGE

By pursuing more water storage capacity in both surface reservoirs and underground aquifers, CALFED seeks not only to meet the needs of California's growing population, but also to provide much-needed flexibility to improve water quality and restore ecosystems.

GOALS

- Provide financial and technical assistance to implement 1/2 million to one million acre-feet of new, locally managed groundwater storage
- Pursue specific opportunities for new off-stream storage sites and expansion of existing on-stream storage sites as identified in the Record of Decision

ACCOMPLISHMENTS

- Continued the Integrated Storage Investigations (ISI) to coordinate studies and evaluate the costs and benefits of specific storage projects in terms of water quality, water supply reliability and ecosystem restoration
- Completed an agreement with local partners to study the Sites Reservoir off-stream surface storage project and Los Vaqueros Reservoir expansion
- Continued study of Shasta Reservoir expansion
- Initiated feasibility study of alternatives for In-Delta storage
- Completed 16 Memoranda of Understanding or Letters of Intent with 30 local agencies throughout the state to study groundwater storage improvements
- Provided grants and loans to local agencies totaling $74 million to assist in planning and implementing groundwater projects. The projects will improve statewide operational flexibility and increase water supply reliability

PUBLIC AND PEER REVIEW

- Proposition 13 Groundwater Conjunctive Management Advisory Teams
- Public workshops, partnerships and stakeholder meetings

PERFORMANCE MEASURES

- Storage is part of the larger Water Management Strategy, and will increase the availability of water and improve the flexibility of the system. Performance measures for this program element may include new storage capacity implemented, changes in groundwater levels and groundwater overdraft status.

O'Neill Forebay

NEXT STEPS

- Develop North of the Delta feasibility analysis, project formulation and environmental documentation
- Determine how to pursue In-Delta storage options based on feasibility study results
- Begin Alternatives report for Los Vaqueros Expansion
- Undertake Enlargement feasibility study for Shasta Lake
- Negotiate Memorandum of Understanding and initiate planning study for Upper San Joaquin Storage
- Award $106 million under Proposition 13 and AB 303 for feasibility studies and pilot projects for Conjunctive Water Management
- Develop and implement projects for fish passage improvement

CALFED BAY-DELTA PROGRAM STORAGE SCHEDULE

Note: Schedules subject to change

POTENTIAL STORAGE OPTIONS

Storage is part of the larger water management strategy, and will increase the availability of water and improve the flexibility of the system.

POTENTIAL STORAGE PROJECTS

Shasta Enlargement
An increase in Shasta storage capacity by 300,000 acre-feet would increase the pool of cold water available to maintain lower Sacramento River temperatures for fish and improve water supply.

Sites Reservoir
This project, with a capacity of up to 1.9 million acre-feet, could enhance water management flexibility in the Sacramento Valley and provide storage and operational benefits for other CALFED programs including fisheries protection, Delta water quality, and the Environmental Water Account.

In Delta Storage
An In-Delta Storage facility of 250,000 acre-feet would provide both fishery benefits and enhanced water project flexibility.

Los Vaqueros Enlargement
Expanding Los Vaqueros reservoir from 100,000 acre-feet to 500,000 acre-feet would provide water quality and water supply reliability benefits to Bay Area water users. Storage in this location could also be integrated into the Environmental Water Account.

San Joaquin Storage
Additional storage between 250-700 thousand acre-feet in the upper San Joaquin River watershed would be designed to contribute to restoration of and improve water quality for the San Joaquin River and facilitate conjunctive water management and water exchanges that improve the quality of water.

Clifton Court Forebay

CONVEYANCE

Moving water through the Bay-Delta as efficiently as possible will increase the system's flexibility and boost ecosystem health, water quality and levee stability.

GOALS

- Modify the existing conveyance system for water supply, water quality, flood protection and ecosystem benefits
- Improve pumping operations of the State Water Project to increase reliability and enhance fish protection

ACCOMPLISHMENTS

- Maintain schedule for construction of the Tracy Fish Test Facility (TFTF) to provide data on the effectiveness of screening facilities in the South Delta
- Study plan for through-Delta diversion facility for Sacramento River
- Continue work on the South Delta Improvement Program (SDIP) to install permanent fish and flow control structures, and modify Clifton Court Forebay to eventually increase periodic pumping to 10,300 cubic feet per second
- Begin environmental documentation for North Delta Flood and Ecosystem Restoration Control improvements
- Begin feasibility studies for lower San Joaquin River flood protection improvement study
- Continue ongoing work on temporary barriers

PUBLIC AND PEER REVIEW

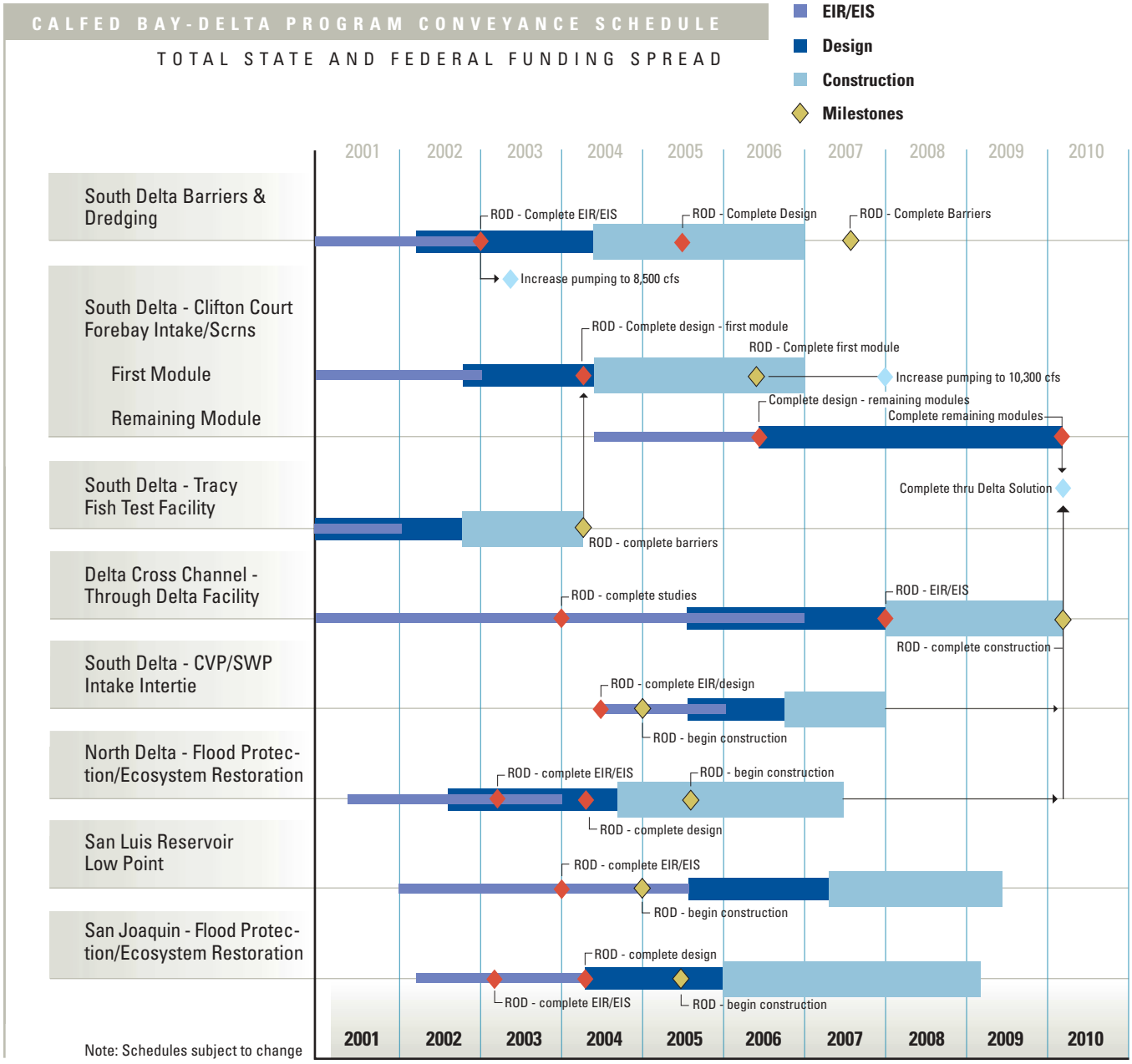
- Program review by North and South Delta Improvements Teams and North Delta Agency Team
- Monitoring by North Delta Stakeholders Group and Mokelumne-Cosumnes Watershed Alliance
- Regular reporting of progress on conveyance improvements at Delta Protection Commission Public Meetings

PERFORMANCE MEASURES

- Performance measures for the conveyance program may include overall survival rates for fish entering the Tracy Fish Test Facility. Increased survival rates mean fewer fish are being lost as a result of water project pumping. Other performance measures may be drinking water quality, flood protection, and ecosystem values.

NEXT STEPS

- Continue work on draft EIR/S and permit for South Delta
- Start construction at TFTF
- Begin testing and research for Through-Delta facility (TDF) ladders
- Continue second year studies at Delta Cross Channel and TDF
- Continue draft EIR/S for North Delta Flood Protection and Ecosystem Restoration
- Develop work plan and funding on Lower San Joaquin flood protection
- Begin scoping for San Luis Low Point Project
- Initiate study of CVP/SWP Intertie



WATER USE EFFICIENCY

Through a competitive process that will fast-track water conservation and recycling projects, the CALFED Bay-Delta Program aims to generate significant water supply, water quality and ecosystem benefits in the short term.

GOALS

- Reduce water demand through "real water" conservation
- Improve water quality by altering volume, concentration, timing and location of return flows
- Improve ecosystem health by increasing in-stream flows where necessary to achieve targeted benefits

ACCOMPLISHMENTS

- Awarded $13.3 million in water conservation grants and loans for 65 projects in 2001—including 37 urban and 28 agricultural projects. These projects were geographically diverse and were matched with over $9.1 million in local funding
  - Urban projects range from a voucher incentive program for clothes washers to more efficient landscape water programs
  - Agricultural projects range from canal lining to buried drip irrigation
  - Funded projects will collectively save 30,000 acre-feet of water, improve water quality, and save energy
- Awarded two water recycling grants
- Established 60 out of 200 quantifiable objectives for agricultural water use efficiency actions (on track to develop 30 more by 2003)
- Convened Independent Review Panel to assist in developing a definition of appropriate water measurement
- Successfully negotiated cooperative agreement with the Agricultural Water Management Council, U.S. Bureau of Reclamation and California Department of Water Resources to support locally cost-effective agricultural water conservation
- Laid groundwork for establishing a Water Use Efficiency Public Advisory Committee, approach to WUE monitoring and Urban BMP Certification
- Developed draft agricultural WUE milestones as part of overall assurances framework
- Forged an effective water use efficiency team with key CALFED agencies

PUBLIC AND PEER REVIEW

- Independent Review Panel for Agricultural Measurement
- Agricultural Measurement Ad-hoc Group
- Urban Certification Ad-hoc Group

PERFORMANCE MEASURES

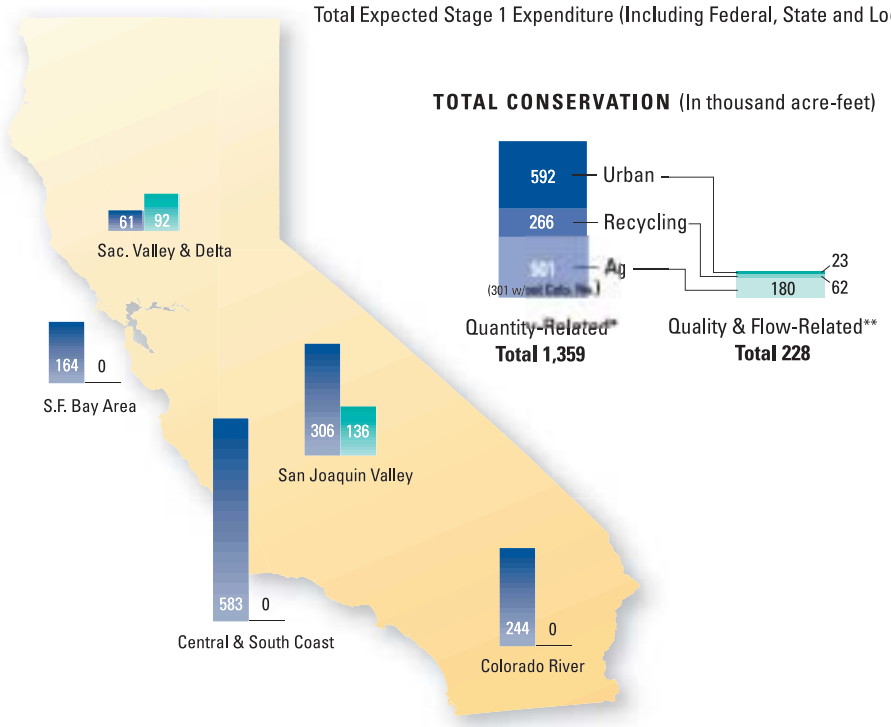
- Credible WUE performance data will be crucial to future discussions of overall program linkage and balance. WUE performance indicators will range from simple administrative measures to relatively complex measures of the outcome of WUE projects. These are expected to include the evaluation of progress toward meeting agricultural quantifiable objectives and similar measures for urban WUE such as changes in per capita water use, volume of in-stream flows and in-stream water quality.

NEXT STEPS

- Develop 2002 WUE Proposal Solicitation (grant) Process
- Seek advice from Water Use Efficiency Public Advisory Committee to better define WUE priorities, grant criteria, approaches to research and technical assistance and assurances processes (including ag milestones and urban BMP Certification)
- Work with Science Program to continue development of effective approaches to WUE monitoring, adaptive management, peer review and performance indicators (see figure)
- Refine quantifiable objectives
- Continue refining WUE implementation approach, including:
  - Finalize Agricultural WUE milestones through broad stakeholder involvement
  - Complete work of Independent Review Panel on appropriate measurement
  - Continue progress on Urban BMP Certification

EXPECTED STAGE 1 (2000–2007) WATER CONSERVATION BY TYPE AND REGION

Total Expected Stage 1 Expenditure (Including Federal, State and Local funds): **$2.96 billion**



*Quantity-Related Conservation is accomplished by reducing flows to salt-sinks or to evaporation.

**Quality & Flow Related Conservation is accomplished by rerouting flows to improve water quality and in-stream flows.

WATER TRANSFERS

Through development of an effective water transfer market, the CALFED Program aims to stretch existing water supplies by promoting transfers from willing sellers to buyers while protecting other water users, local economies and the environment.

GOALS

- Develop a more effective water transfer market
- Protect water rights, the environment and local economic interests
- Streamline the approval process of state and federal agencies for water transfers

ACCOMPLISHMENTS

- Supported the Governor's Advisory Drought Planning Panel in developing a Critical Water Shortage Contingency Plan. Implemented state and federal dry year programs that provided nearly 300,000 acre-feet to areas suffering from water shortages
- Developed "ON TAP" web site, an on-line water market information resource for water transfers
- Convened a stakeholder panel and drafted recommendations to streamline the transfer process
- Initiated technical review of "carriage water" requirements governing the transfer of water through the Bay-Delta
- Working to define transferable water and carriage water requirements

PUBLIC AND PEER REVIEW

- Monitor web site with Water Transfer Information Clearinghouse
- Review by CALFED agencies and State Water Resources Control Board Water Transfer Work Group

PERFORMANCE MEASURES

- Performance measures may include: number of proposed water transfers; ratio between water transfers proposed and approved; volume of water being transferred; reduced time needed to approve proposed transfers; and total regional water supply.

http://ontap.ca.gov

NEXT STEPS

- Establish fair and equitable "wheeling" terms
- Establish shared place-of-use between Central Valley Project & State Water Project
- Encourage coordination of multiple transfer within single approval processes
- Identify standard mitigation measures suitable for addressing socio-economic and cumulative impacts.
- Continue refinements and improvement to "ON TAP" web site
- Establish Water Transfer Clearinghouse

ECOSYSTEM RESTORATION PROGRAM

Ecosystem restoration actions help restore and improve the health of the Bay-Delta system for all native species while reducing its water management constraints.

GOALS

- Recover 19 at-risk native species and contribute to the recovery of 25 additional species
- Rehabilitate natural processes related to hydrology, stream channels, sediment, floodplains and ecosystem water quality
- Maintain and enhance fish populations critical to commercial, sport and recreational fisheries
- Protect and restore functional habitats, including aquatic, upland and riparian, to allow species to thrive
- Reduce the negative impacts of invasive species and prevent additional introductions that compete with and destroy native species
- Improve and maintain water and sediment quality to better support ecosystem health and allow species to flourish

ACCOMPLISHMENTS

- Established a "single blueprint" or framework for coordinating resource management, conservation and regulatory actions between state and federal agencies
- Since 1995, CALFED agencies and stakeholders have funded 326 ecosystem projects for $336 million including projects funded through the Anadromous Fish Restoration Program of the CVPIA. In 2001, $195 million was spent on activities including ecosystem water quality, ecosystem science, strategy planning, and 74 individual ecosystem restoration projects selected through a public solicitation process. Specific highlights include:
  - Began fish passage improvements along 182 river miles of three streams (Battle, Butte and Clear creeks) and three rivers (Cosumnes, Guadalupe and Mokelumne)
  - Installed 64 fish screens to protect fish at diversion points throughout the Bay-Delta system
  - Conducted 23 studies at $26.5 million on the effects of dissolved oxygen, mercury, pesticides, selenium and dissolved organic carbon on the Bay-Delta system
- Launched the Environmental Water Program with steering committee
- Continued to develop scopes of work for the Upper Yuba River Studies Program
- Facilitated approval of dissolved oxygen studies in the Stockton Deep Water Ship Channel in conjunction with the science program
- Began revised Ecosystem Restoration Implementation Plan for the Delta
- Developed Draft Stage 1 Implementation Plan for the Ecosystem Restoration Program

Butte Creek

PUBLIC AND PEER REVIEW

- Agency Stakeholder Ecosystem Team provides technical oversight
- Stakeholder and public oversight achieved through Ecosystem Roundtable
- Independent Ecosystem Science Board comprised of 12 independent scientists monitors scientific integrity of program
- Coordination and integration with other CALFED programs and agencies

PERFORMANCE MEASURES

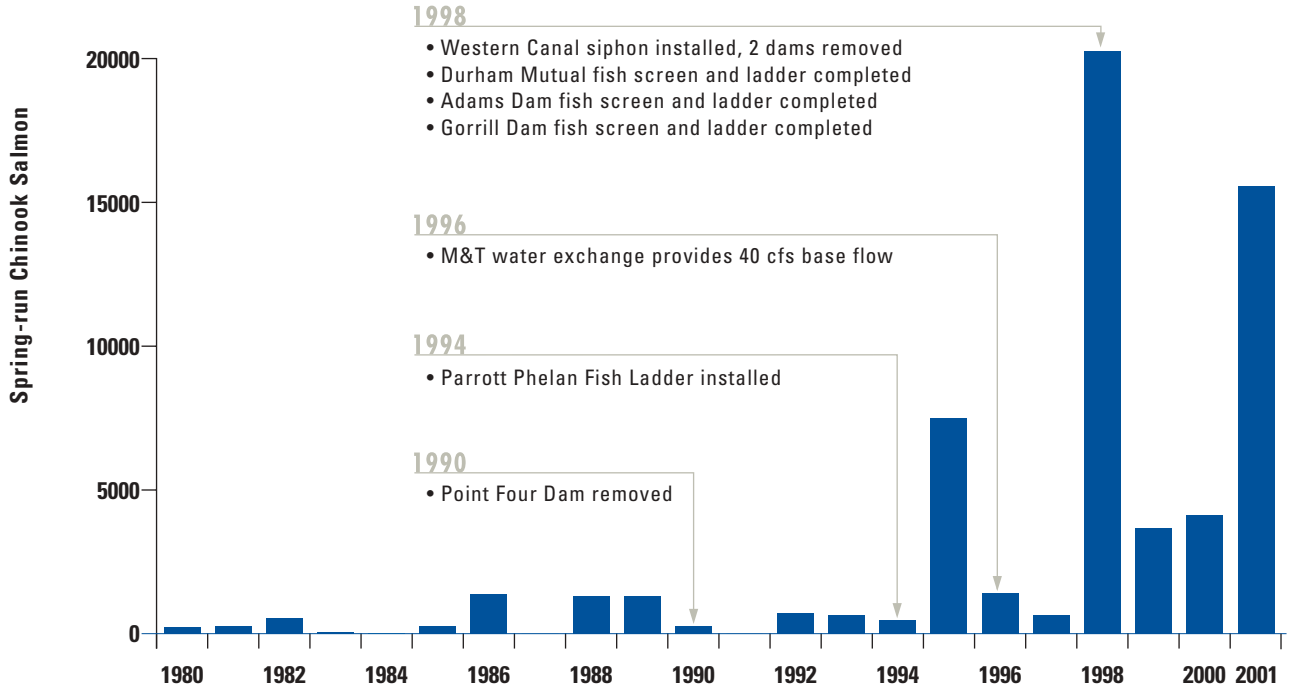
- Performance measures for the Ecosystem Restoration Program are being developed and include: number of funded restoration projects to benefit at-risk fish species; number of restoration projects funded; acres of enhanced or protected habitat leading to improved ecological processes; population trends for listed fish species dependent on the Delta, and percentage of the volume of diverted water screened.

NEXT STEPS

- Continue strategic planning and program management
- Continue project implementation
- Integrate science and initiate special studies

BUTTE CREEK PROGRESS

This graphic shows an increase in Spring-run Chinook salmon population trends on the Butte Creek that correlate with ecosystem restoration activities.



Delta Cross Channel Studies

ENVIRONMENTAL WATER ACCOUNT

Providing water at critical times is key to meeting ecosystem needs. Through its Environmental Water Account, CALFED is obtaining water and the flexibility to benefit the environment and minimize water supply impacts on cities, farms and businesses.

GOALS

- Reduce conflicts between environmental needs and water project operations by providing water and flexibility
- Better protection for fish and habitats at critical times by providing water in a flexible manner other than through strict requirements
- Increase water supply reliability by allowing projects to meet environmental and water supply needs at the same time

ACCOMPLISHMENTS

- Provided 287,000 acre-feet for environmental purposes without reducing allocations to farmers and cities
- Received commitments that water supplies would not be further reduced because of Endangered Species Act requirements

PUBLIC AND PEER REVIEW

- First annual panel review and scientific evaluation conducted to examine how much water was acquired, how it was used and whether it had an impact
- Ongoing review of EWA provided by scientific advisors
- Program review by CALFED member agencies as part of a cooperative management agreement

PERFORMANCE MEASURES

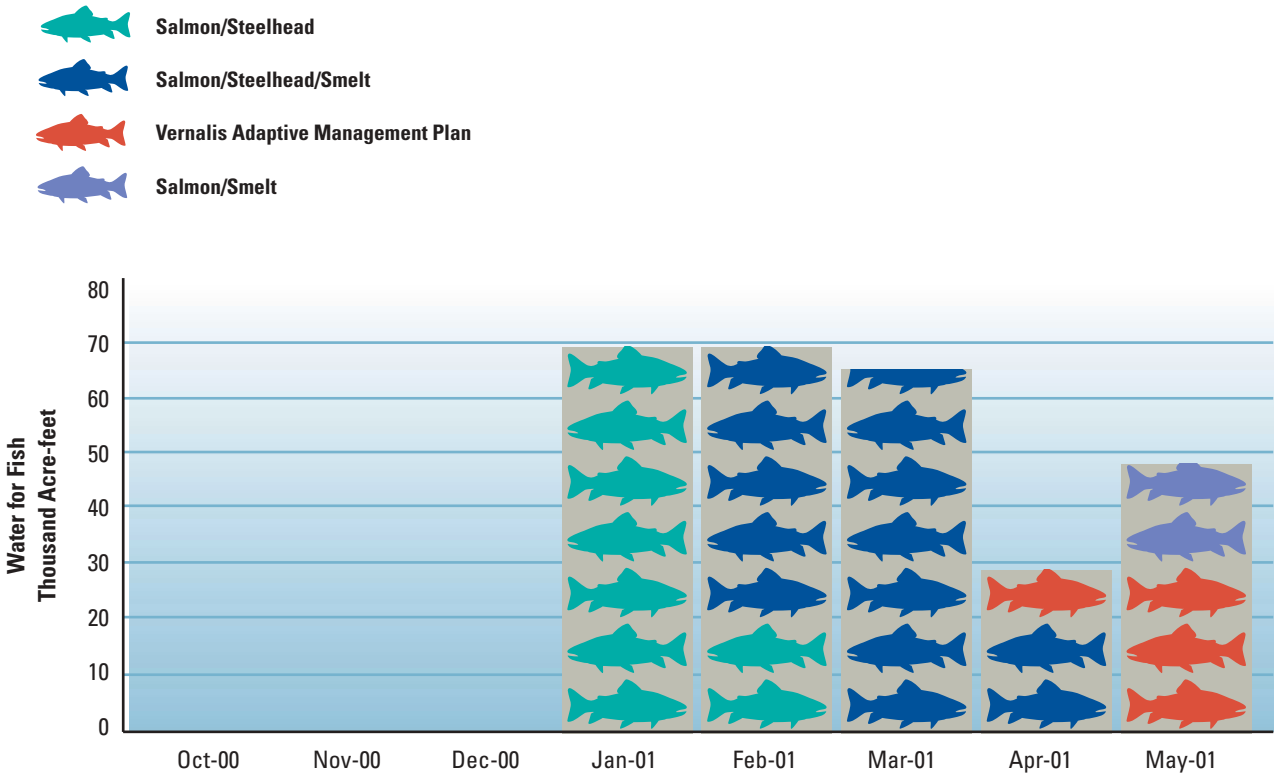
- Performance measures for the EWA may include: estimated effect on fish population levels because of use of EWA water and export reductions (by species); take of fish at the state and federal pumps; and estimated amount of EWA water used to help supplement reduced pumping and protect fish.

NEXT STEPS

- Acquire 255,000 acre-feet of water and source shift water in Year 2
- Continue to use acquired water for Endangered Species Act and other protection
- Complete long-term environmental documentation for EWA
- Acquire Tier 3 reserve water
- Continue work on acquisitions for the EWA in 2002

ENVIRONMENTAL WATER ACCOUNT USAGE

WATER YEAR 2000-2001



WATERSHED MANAGEMENT

By providing financial and technical assistance for local watershed programs, the CALFED Program aims to support watershed management efforts that reduce water quality problems, restore and protect watershed functions and improve water supply reliability.

The program also seeks to foster local leadership by encouraging landowners, community members, environmental organizations and local public agencies to come together on watershed projects.

GOALS

- Assist local programs that help achieve overall Program objectives
- Promote integration and collaboration between programs, efforts and people at the watershed level

ACCOMPLISHMENTS

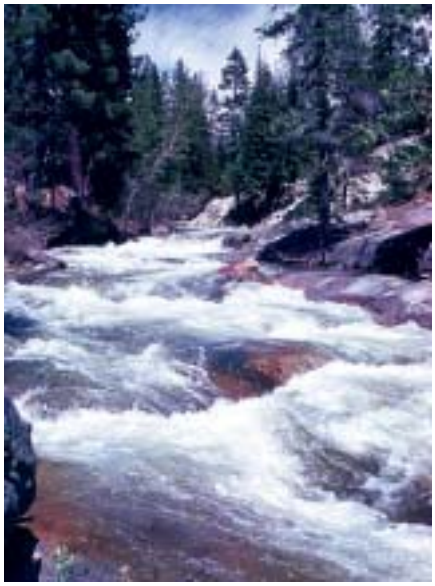
- Developed 2001 grant program for locally based watershed projects, funding 54 projects at approximately $18 million
- Provided funding in coordination with the Ecosystem Restoration Program to support projects in more than 50 watersheds
- Developed a Memorandum of Understanding to ensure better coordination between state and federal watershed programs

PUBLIC AND PEER REVIEW

- Formed Interagency Watershed Advisory Team to improve access to and effectiveness of technical assistance to local watershed groups
- All projects reviewed by Watershed Selection Committee that includes 17 representatives from member agencies, stakeholders and the academic community

PERFORMANCE MEASURES

- Performance measures for the Watershed Program may include: total number of watershed assessments completed or supported through the Program; total number of new local watershed management programs formed or supported by the Program; number of workshops and training sessions supported by CALFED for local and tribal governments; and improved performance of watersheds, as measured by level, timing and variability of flows.



NEXT STEPS

- Continue to implement a grant program using $10 million Prop 13 monies administered jointly with the State Water Resources Control Board
- Deliver expanded technical assistance from state agencies
- Support Watershed Working Group outreach efforts to further education and information to local communities
- Continue to define comprehensive set of performance measures and develop annual implementation plan

CALFED WATERSHED PROGRAM

DRINKING WATER QUALITY

The Drinking Water Quality Program is unique in addressing water quality from source to tap in order to improve drinking water supplies for the 22 million Californians who rely on the Bay-Delta watershed for all or part of their water.

GOALS

- Improve the quality of water at its source
- Seek advancements in treatment technology
- Find innovative ways to manage and deliver water
- Support health effects research and perform comprehensive monitoring and assessment of Bay-Delta drinking water quality

ACCOMPLISHMENTS

- Implemented seven projects in 2001 totaling $26 million
  Projects Include:
  - The Salinity and Selenium Project to build a pilot plant to treat agricultural drainage and produce water for reuse
  - The Bay Area Blending/Exchange study aimed at improving water quality by blending and exchanging source waters among water utilities
  - Studies of the sources and concentrations of contaminants in Bay-Delta water
  - Studies on Veale and Byron Tracts exploring options for addressing drainage problems in the Delta
  - Water Quality Exchange for Friant-MWD
  - Desalination Research and Innovation Partnership (MWD)
- Developed solicitation and selection process to fund additional drinking water quality projects
- Facilitated approval of Memorandum of Understanding among key state and federal agencies to coordinate actions to address water quality problems
- Negotiated approval of a Memorandum of Understanding between state agencies and local partners for Bay Area Blending/Exchange Studies
- Conducting first grant process
  - Threshold and Science reviews completed
  - 28 proposals to continue through the review process

PUBLIC AND PEER REVIEW

- Review by the Delta Drinking Water Council and Drinking Water Constituents Work Group

PERFORMANCE MEASURES

- Performance measures may include: water quality as indicated by monitoring and testing at key points; frequency or occurrence of advanced treatment technologies at local treatment facilities, and consumer water rates.

NEXT STEPS

- Help form new Drinking Water subcommittee that will operate under the new advisory group
- Make project recommendations for SWRCB Proposition 13 Nonpoint Source grants
- Issue Drinking Water Quality Program grants and directed actions for Years 2 and 3
- Initiate demonstration scale projects for ultraviolet disinfection and regional desalination
- Initiate feasibility study for Bay Area Blending/Exchange
- Develop and implement a plan to meet Delta water quality standards for which the state and federal projects have responsibility

Flood Emergency Response

LEVEE SYSTEM INTEGRITY

With its focus on improving Bay-Delta levees, CALFED is acting to protect water supplies needed for the environment, agriculture and urban uses by reducing the threat of levee failure and seawater intrusion. Delta levees also protect major interstates, roadways, cities, towns, agricultural lands and environmental and aquatic habitat.

GOALS

- Improve levees to a higher standard for greater flood protection
- Improve emergency response capabilities
- Ensure levee maintenance and habitat needs are met
- Improve coordination of permit processes
- Develop adequate and reliable funding for levee maintenance

ACCOMPLISHMENTS

- Awarded more than $18 million in Year 1 to improve levees on 50 Delta islands while $14.6 million was invested in special projects like ecosystem and levee restoration for water quality and flood protection
- Continued work on Delta Dredge and Reuse Strategy
- Developed a Memorandum of Understanding between agencies on the management of the levee program with DWR and the Army Corp of Engineers being co-leads
- Developed a charter for the Suisun Marsh to more effectively integrate multiple uses into a single plan
- Continuing work to develop practical ways to slow, stop and reverse island subsidence

PUBLIC AND PEER REVIEW

- Levee work approved at the State Reclamation Board public meetings
- Levee Program coordinated with stakeholders and peers through the Delta Levees and Habitat Advisory Committee and the Levees and Channels Technical Team

Levee Breach

Funds for Delta levees result in fewer requests for emergency recovery funds and fewer acres flooded.

PERFORMANCE MEASURES

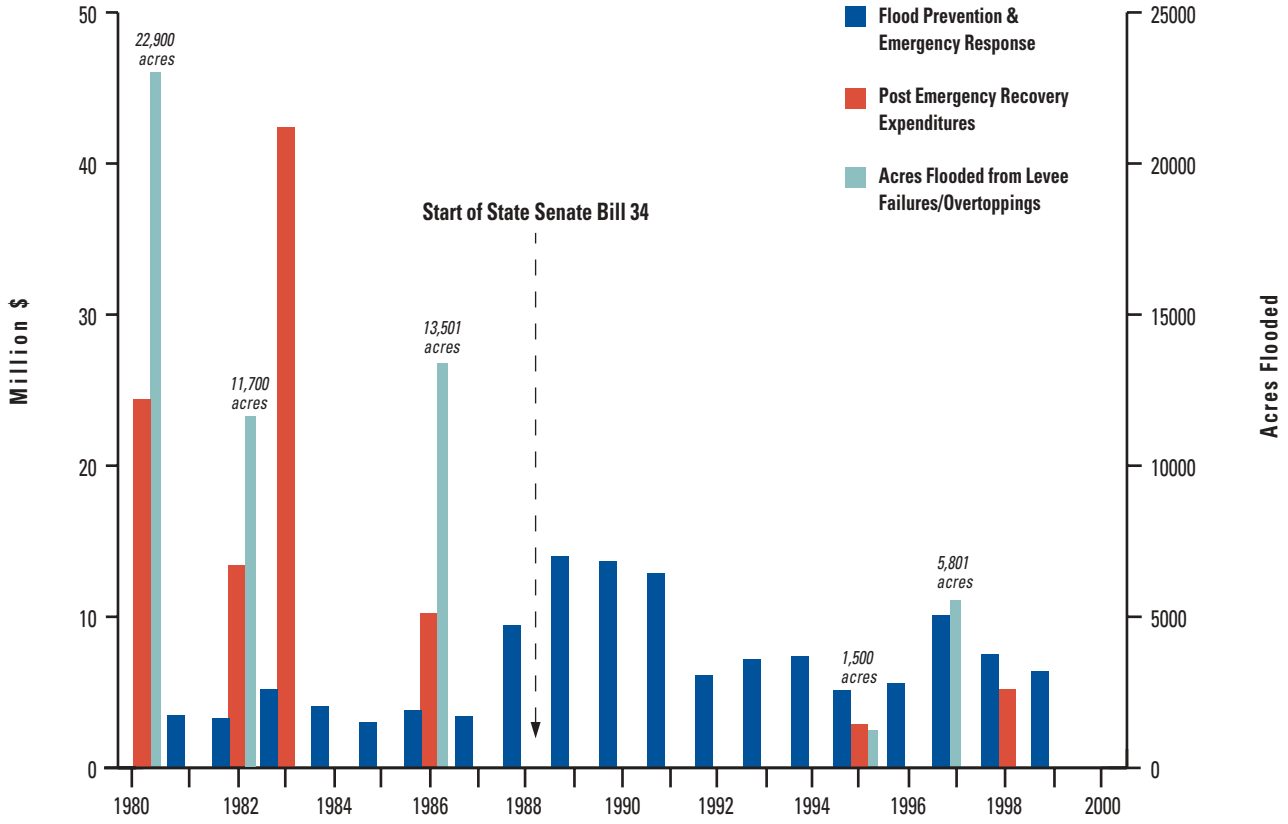
- Performance measures may include: number of levees improved to specific standards; emergency funding and flood response equipment secured and available; and acres and frequency of land flooded.

NEXT STEPS

- Support Levees Subvention and special projects programs
- Perform Risk Assessment
- Continue to refine program performance indicators
- Develop a Dredge Reuse Strategy
- Facilitate the Suisun Marsh Charter Process
- Plan for global climate changes
- Seek increased federal participation
- Continue regulatory coordination

DELTA LEVEE FLOOD COSTS

POST DISASTER ASSISTANCE COSTS AND ACRES FLOODED



Secretary of Resources Mary Nichols Meets With Media at the June 2001 Policy Group Meeting

program accountability and measuring success

The Bay-Delta Program brings a high level of public accountability and visible measures of success.

Performance measures are used to translate program goals and objectives into measurable benchmarks of success. They present information on conditions, trends and their significance. The Program uses performance measures to:

- Evaluate goals, progress and successes of restoration and management efforts
- Increase technical understanding of problems and trends in the Bay-Delta System
- Provide information that can help clarify management decisions
- Inform the public and policy makers about the progress of the program

goals

- Comprehensive project tracking
- Monitoring of each project's performance, cost and schedule
- Measurable progress to assure balance across all elements of the Program
- Monthly status information collected for every project

accomplishments

- Created and put in place a tracking system for evaluating and reporting on each individual program area
- Developed preliminary performance measures with ongoing development coordinated with the Science Program
- Crafted standard procedures for producing consistent data for each program area

example of program tracking information viewed from the web site

CALFED BAY DELTA PROGRAM
Delta Region

Project Title	Project Manager	Email	Phone Number
Tracy Fish Test Facility	Ron Brockman (USBR) Ron Ott (CALFED)		

Purpose of Project

The Tracy Fish Test Facility (TFTF) is being constructed as a state-of-the-art pilot program to test fish screen and salvage technologies, and more specifically fish sorting, handling, holding and transportation techniques preparatory to the design of the expanded Clifton Court Forebay and for expansion at Tracy.

Work Scope Summary

The work scope of this program requires the planning, design and construction of an improved fish processing facility which screens, hold, sorts, and transports a variety of fish species. A gravity line and a lift line operation are being tested with various fish salvage techniques.

Click Here for Detailed

Status of Work

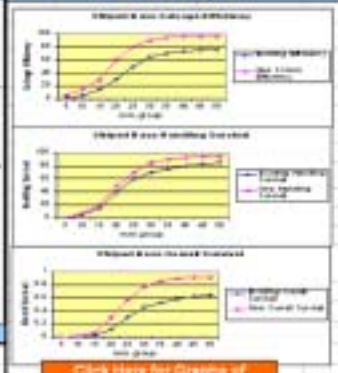
YEAR 1
A Project Management Plan was completed. A Draft Environmental Assessment/Initial Study was issued for public review and three workshops were conducted for comment from the public on this subject. Fishery Engineering Planes were developed. Numerous ongoing research studies related to Tracy Fish Test Facility were initiated for the advancement of necessary technologies. Two sheet pile tests were completed for determination of pile driving performance and noise/vibration characteristics. Approximately 80% of the final design of Tracy Fish Test Facility was completed.

YEAR 2
Continue research addressing the testing and evaluation of new facilities for fish screening, holding, sorting, and transportation in the South Delta. Begin Tracy Fish Test Facility construction, excavation, utility relocation and foundation dewatering; and order "critical path" mechanical equipment.

Progress Against ROD Milestones

TFTF has delayed construction start until May 02 in order to obtain necessary federal funding. Construction completion is now scheduled for January 04, afterwhich operational testing will begin. This will allow time to provide design information to Clifton Court to complete in Stage 1, but will delay their work by 6 months.

Technical Graphic



Click Here for Graphs of Technical Performance

Technical Performance Indicators

Indicator
Prevention of fish loss at pumps and survival of fish that enter the fish facilities to their return to their natural environment

Metric
Survival % of fish that enter the fish facilities

Target

Baseline Available
Yes

State Resources Secretary Mary Nichols; Department of Interior Deputy Chief of Staff Sue Ellen Wooldridge; and State Senators Jim Costa and Mike Machado at the June 2001 Policy Group Meeting

legislative actions in 2001

During 2001, both the California Legislature and the Congress considered several bills related to the Bay-Delta Program's objectives.

water transfers

- **SB 621 (*Costa*) water transfers** would revise the definition of "unused capacity" related to water transfers under specific conditions. This measure has passed the Senate and has been referred to the Assembly Committee on Water, Parks and Wildlife and to the Assembly Committee on Local Government.
- **SB 1029 (*Perata*) water transfers** would revise the definition of the term "fair compensation" related to specific circumstances related to water transfers, and would provide an avenue for filing complaints with SWRCB in that regard. This measure has been held in the Senate Committee on Appropriations.

groundwater management

- **AB 599 (*Liu*) Groundwater contamination: quality monitoring program (Chapter 522, Statutes of 2001)** requires the State Water Resources Control Board to integrate existing monitoring programs and design new program elements to establish a comprehensive statewide groundwater quality monitoring program and to report to to the Governor and the Legislature, by March 1, 2003, on a comprehensive groundwater quality monitoring program for the state.

water use efficiency

- **AB 331 (*Goldberg*) 2002 Recycled Water Task Force (Chapter 590, Statutes of 2001)** requires the Department of Water Resources to convene the 2002 Recycled Water Task Force to advise DWR in investigating opportunities for using recycled water in industrial and commercial applications and in identifying constraints to increasing the industrial and commercial use of recycled water. The bill requires DWR to report to the Legislature with recommendations by July 1, 2003. The Task Force would be funded by Proposition 13 (2000).
- **SB 672 (*Machado*) California Water Plan: urban water management plans (Chapter 320, Statutes of 2001)** requires the Department of Water Resources to include in the California Water Plan (DWR Bulletin 160 series) a report on the development of regional and local water projects, to include water recycling projects, that will improve water supplies to meet municipal, agricultural, and environmental water needs. This bill also requires urban water suppliers to describe the water management tools and options they use that will maximize resources and minimize the need to import water from other regions.

program governance

- **SB 1115 (*Costa*) The CALFED Bay-Delta Program** would create the CALFED Bay-Delta Commission in the Resources Agency to manage implementation of the Bay-Delta Program. This bill is in the Senate Committee on Agriculture and Water Resources.

program financing

- **AB 1602 (*Keeley*) California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002 (Chapter 875, Statutes of 2001)** places a $2.6 billion general obligation bond act on the March 2002 Statewide Primary Election ballot to authorize issuance of bonds to finance resource management programs, including $300 million to the Wildlife Conservation Board for habitat projects that promote recovery of threatened and endangered species. To be voted on in the March 2002 Primary Election.
- **SB 23 (*Costa*) CALFED funds: Bay-Delta Program (Chapter 7, Statutes of 2001)** provided Legislative certification that projects and purposes funded from the State General Fund in Fiscal Year 2000-01 are consistent with the July 2000 Bay-Delta Program Programmatic Environmental Impact Statement/Environmental Impact Report. This certification allowed use of $135 million in General Funds appropriated by the Budget Act of 2000.
- **SB 739 (*Peace*) Budget Act of 2001 (Chapter 106, Statutes of 2001)** appropriated funds to finance California State government for Fiscal Year 2001-02. The Budget Act appropriated $571.9 million ($81 million from the General Fund) to various State agencies to carry out the Bay-Delta Program.
- **HR 2311 (*Callahan*) Energy and Water Development Appropriations Act, 2002 (Public Law 107-66)** appropriated funds to the Department of the Interior and the US Army Corps of Engineers for Federal Fiscal Year 2002 for water development projects.

pending federal legislation

- **HR 3208 (Calvert) Western Water Enhancement Security Act** to authorize funding through the Secretary of Interior for the implementation of a comprehensive program in California to achieve increased water yield and environmental benefits, as well as improved water system reliability, water quality, water use efficiency, watershed management, water transfers, and levee protection.
- **HR 2404 (George Miller) California Water Quality and Reliability Act of 2001** to authorize federal agency participation and financial assistance for programs and for infrastructure improvements for the purposes of increasing deliverable water supplies, conserving water and energy, restoring ecosystems, and enhancing environmental quality in the State of California, and for other purposes.
- **S. 1768 (Feinstein) California Ecosystem, Water Supply, and Water Quality Enhancement Act of 2001** to provide authorization and funding for the enhancement of ecosystems, water supply, and water quality of the State of California.

other topics

- **AB 776 (*Thomson*) State Water Resources Control Board** would direct parties to the Sacramento Valley Water Management Agreement, including the Department of Water Resources and the Bureau of Reclamation, to brief Legislative committees monthly on implementation of the Agreement. The Agreement is being implemented in lieu of proceedings in Phase 8 of the SWRCB Bay-Delta Water Rights Hearing. This measure is in the Assembly inactive file.
- **SB 221 (*Kuehl*) Land use**: water supplies (Chapter 642, Statutes of 2001) requires legislative bodies of cities or counties, under the Planning and Zoning Law, to include as a condition in a tentative map for a subdivision of more than 500 dwelling units a requirement that a "sufficient water supply" shall be available. This bill also specifies procedures and standards for determining if water supplies will be sufficient.
- **SB 610 (*Costa*) Water supply planning (Chapter 643, Statutes of 2001)** requires cities and counties, upon determining that a project is subject to the California Environmental Quality Act, to request applicable public water systems to determine whether projected water supplies will meet projected water demand associated with the project. This bill specifies procedures and standards for making this determination.
- **SB 727 (*Costa*) Environmental Water Account Act of 2001** would formally establish the Environmental Water Account program and create the Environmental Water Account Program Fund. This measure is in the Senate Committee on Agriculture and Water Resources.

litigation update

Summary of Laub v. Babbitt, et al. (E.D. Cal., No. CV-F-00-6601)

On September 28, 2000, the California Farm Bureau Federation and three individuals filed a lawsuit against several federal and state CALFED agencies and officials in federal district court. The Farm Bureau claimed that the agencies violated the National Environmental Policy Act and the California Environmental Quality Act when they acquired land and water under the CALFED program. In December 2000, the court dismissed the CEQA claim and the state agencies. After the Farm Bureau amended its complaint to include additional state officials, the court dismissed this complaint as well, in September 2001. The court agreed with the federal and state defendants that the NEPA claim was not ripe for adjudication, and it agreed with the state defendants that NEPA does not apply to state acquisitions of land and water. Further proceedings are pending.

Summary of Bay-Delta Programmatic EIR Cases (Jud. Council Coord. Proceeding No. 4152)

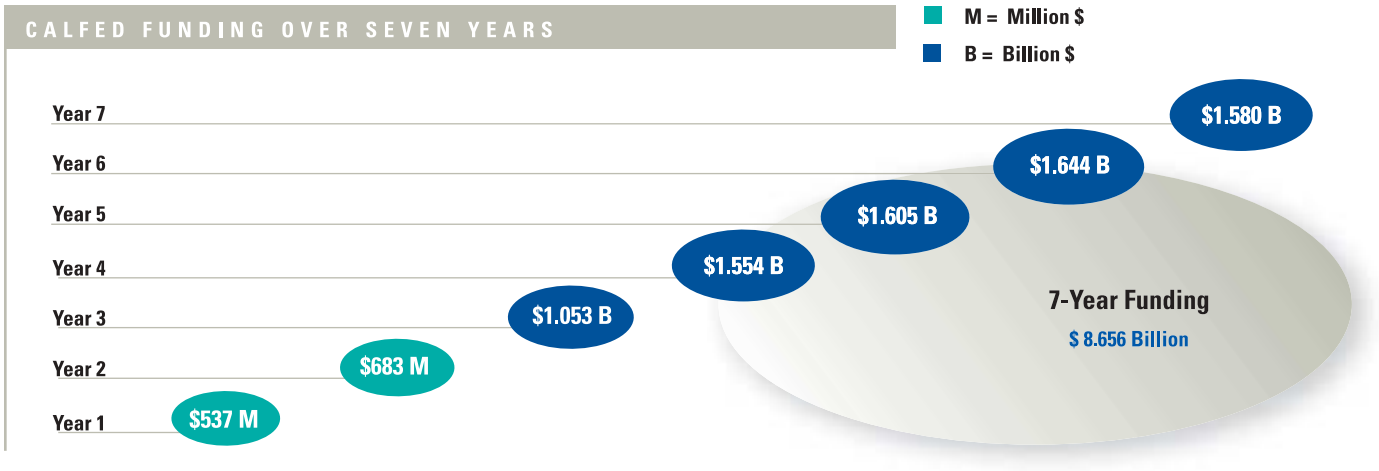
In September, 2000, the Regional Council of Rural Counties, Central and South Delta Water Agencies, and certain individuals filed suit in Sacramento Superior Court against the CALFED state and federal agencies (Case No. 00CS01331). The Municipal Water District of Orange County filed a related legal action in Los Angeles Superior Court at the same time (Case No. BC237574.) Following the dismissal of the Farm Bureau's legal claims from federal court, those petitioners refiled their legal action in Fresno Superior Court (Case No. 00 CE CG 11667). All three actions allege that the state agencies did not comply with CEQA in preparing the CALFED Programmatic Environmental Impact Statement/Environmental Impact and Record of Decision. The RCRC action also seeks to invalidate the CALFED ROD on various grounds.

On April 2, 2001, all three action were coordinated for hearing in the Sacramento Superior Court. The administrative record was filed in July, 2001, and various preliminary motions have been set for hearing in November and December, 2001.

On November 14, 2001, the Municipal Water District of Orange County dismissed its case following a settlement in which the parties acknowledged actions set forth in the CALFED ROD and the agencies' progress in implementing certain program areas.

fiscal information

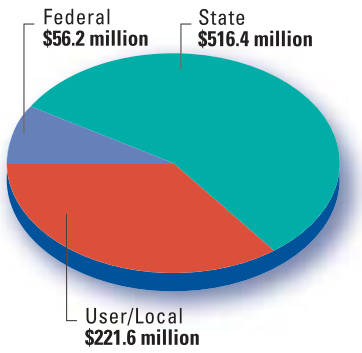
In the Record of Decision, CALFED projected expenditures for each program element over a 7 year period. In many cases the funding appropriated has not equaled the amount projected in the ROD. The primary source of funding in the first two years of CALFED implementation is from state bond funds. However, bond funds will be depleted by Year 3 and 4 in most cases.



stage 1

Projected Expenditures. Table 1, taken from the June 2000, Framework for Action, provides the Stage 1 estimates for CALFED projected expenditures. These estimates are in Year 2000 dollars. Actual funds appropriated for CALFED for Year 1 and 2 are shown in Tables 2 and 3. Proposed expenditures for Years 5-7 are estimates that will be adjusted after an evaluation is made of effectiveness of the program investments during Years 1-4. Table 1 does not include the funding projected for CALFED oversight and coordination. (see table 1 on page 66)

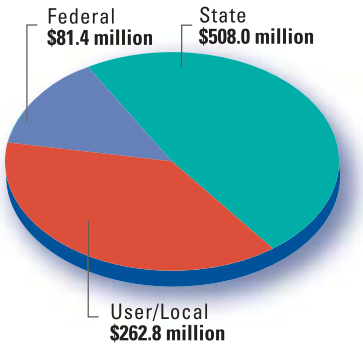
YEAR 1 FUNDING



year 1

Table 2 includes the funds appropriated for the CALFED Bay-Delta Program in the first year of the program (state fiscal year is July 1, 2000 – June 30, '01, federal fiscal year is October 1, 2000 – September 30, '01). Funding for CALFED in Year 1 was $766 million, primarily due to state bond funds ($323 million) and local cost sharing for recycling projects ($149 million). Year 1 funding was increased in some program elements because of revised cost estimates, such as for the Environmental Water Account, and because bond funds were being spent at a faster rate than planned in the ROD for groundwater projects and other programs. However, an increase in rate of spending in Year 1 funding does not affect the overall seven-year total reflected in Table 1. (see table 2 on page 67)

YEAR 2 FUNDING



year 2

Table 3 includes the funds appropriated for the CALFED Bay-Delta Program in the second year of the program (state fiscal year is July 1, 2001 – June 30, '02, federal fiscal year is October 1, 2001 – September 30, '02). Total funding budgeted for Year 2 is $852 million, primarily due to state bond funds ($385 million) and local cost sharing for recycling projects ($178 million). Again, in Year 2 as in Year 1, bond funds for ground-water storage are being spent at a faster rate than projected in Table 1. However, funding from the State General Fund was reduced by approximately $20 million in Year 2 due to state revenue shortfalls. (see table 3 on page 68)

fiscal information

The following three tables summarize the Stage I funding needs and the Year 1 and Year 2 appropriated funds for CALFED.

TABLE 1 CALFED BAY-DELTA PROGRAM
stage 1 projected expenditures ($ in millions)

	program year(s)								cost sharing		
program element	1	2	3	4	5	6	7	total	fed	state	other
Ecosystem Restoration[1]	$235	$198	$163	$168	$220	$218	$218	$1,420	$510	$510	$400
Environmental Water Account	$50	$50	$50	$50				$200	$100	$100	
Water Use Efficiency	$31	$62	$299	$641	$641	$641	$641	$2,956	$759	$759	$1,438
Water Transfers	$3	$3	$3	$2	$2	$1	$1	$15	$7.5	$7.5	
Watershed[2]	$40	$45	$45	$45	$45	$40	$40	$300	$138	$138	$24
Drinking Water Quality[3]	$41	$78	$82	$110	$116	$120	$128	$675	$200	$200	$275
Levees[4]	$33	$76	$78	$82	$45	$65	$65	$444	$142	$88	$34
Storage[5]	$50	$75	$138	$208	$266	$349	$339	$1,425	$237	$237	$200
Conveyance[6]	$29	$66	$150	$198	$220	$160	$98	$921	$188	$381	$193
Science	$25	$30	$45	$50	$50	$50	$50	$300	$150	$150	
total[7]	$537	$683	$1,053	$1,554	$1,605	$1,644	$1,580	$8,656	$2,432	$2,571	$2,564

[1]Proposed cost sharing for the ERP is a split between users (-$35 million per year from a new broad-based fee & $15 million per year in CVPIA Restoration Funds), and public dollars (assumed split equally between federal and state sources of funding). This table assumes revenues from new broad based fees would become available beginning in 2003.

[2]Cost shares include a 10% contribution from locals for community based watershed activities, with the rest funded equally between federal and state sources.

[3]In general cost sharing is assumed to be 50/50 fed/state or 33/33/33 fed/state/user, depending on the action. Some water quality actions assume federal and state funding in the initial 2 years, with 100% of the funding in the latter years from users.

[4]Total cost includes the Suisun Marsh Levee Program, which provides substantial ecosystem, water quality and flood protection benefits. Allocations of cost shares for this Program is not included in this table.

[5]Initial Funding will be largely state and federal sources. The cost share for surface storage construction has not been determined. Final cost shares (including reimbursements by beneficiaries) will depend on allocation of costs and identification of beneficiaries for individual projects. Cost sharing for full-scale groundwater storage projects assumes a 50% local match.

[6]Total includes rough estimate for construction of the San Luis Reservoir Low Point Project, but cost sharing is not included because cost shares have not been determined.

[7]Cost sharing dollars do not total $8.6 billion because allocation of cost shares have not determined for all levee, storage and conveyance activities.

TABLE 2 CALFED BAY-DELTA PROGRAM

year 1 funding by source ($ in millions)

	Year 1 Funding	state funding[1]					federal funding[2]				user/local funding[3]			
		GF	Prop 204	Prop 13	Other State	Subtotal	USBR/W&RR	USACE	Other Fed[2]	Subtotal	SWP	CVPIA RF	Local[4]	Subtotal
Ecosystem Restoration	$236	$3.5	$134.9	$46.2	$6.1	$190.7	$4.3	$0.4	$6.3	$11	$3.7	$17.1	$13.5	$34.3
Environmental Water Account	$59.1	$59.1				$59.1								
Water Use Efficiency	$204.1	$17.0		$12.3		$29.3	$26.0			$26.0			$148.8	$148.8
Water Conservation	($31.2)	($17.0)		($3.2)		($20.2)	($1.9)			($1.9)			($9.1)	($9.1)
Water Recycling	($172.9)			($9.1)		($9.1)	($24.1)			($24.1)			($139.7)	($139.7)
Water Transfers	$1.1	$1.1				$1.1								
Watershed	$33.0	$18.9	$1.3		$1.0	$21.2			$2.3	$2.3			$9.5	$9.5
Drinking Water Quality	$37.5	$13.5		$24.0		$37.5								
Levees	$35.4	$0.1	$1.7	$28.5		$30.3					$0.6		$4.5	$5.1
Storage	$95.5	$24.7		$69.0		$93.7	$1.8			$1.8				
WMS/Oversight & Coor.	($2.9)	($2.9)				($2.9)								
Surface	($13.8)	($12.0)				($12.0)	($1.8)			($1.8)				
Groundwater	($78.8)	($9.8)		($69.0)		($78.8)								
Conveyance	$22.3	$4.2		$4.8		$9.0	$2.6			$2.6	$9.7	$1.0		$10.7
Science	$28.2	$13.2			$2.3	$15.5	$4.0	$0.2	$1.9	$6.1	$6.2	$0.2	$0.2	$6.6
CALFED Science	($13.8)	($13.0)				($13.0)			($0.8)	($0.8)				
IEP	($14.4)	($0.2)			($2.3)	($2.5)	($4.0)	($0.2)	($1.1)	($5.3)	($6.2)	($0.2)	($0.2)	($6.6)
Oversight & Coordination	$13.8	$13.5				$13.5		$0.3		$0.3				
total	$765.9	$182.0	$137.9	$184.8	$11.7	$516.4	$42.7	$1.1	$12.4	$56.2	$26.4	$18.5	$176.7	$221.6

[1]State funding sources include General Fund (GF), bond funds (Proposition 204 & Proposition 13), and Other State funding sources (Other State). Other State includes State matching funds for projects funded through the ERP 2001 Proposal Solicitation Package ($6.1m) and Interagency Ecological Program (IEP) funding ($2.274m) from various departments that contributes to the Science Program.

[2]Federal funding sources include U.S. Bureau of Reclamation Water and Related Resources (USBR W&RR), U.S. Army Corps of Engineers appropriations (USACE), and Other Federal sources (Other Fed). Other Fed includes Federal matching funds for projects funded through the ERP 2001 Proposal Solicitation Package ($6.3m), USGS funding for the Science Program ($0.8), and IEP funding from U.S. Fish & Wildlife Service ($0.231), U.S. Geological Survey ($0.782), National Marine Fisheries Service ($0.035), and U.S. Environmental Protection Agency ($0.04) that contributes to the Science Program.

[3]User subtotal includes State Water Project Funds and CVPIA Restoration Funds that are collected from state water contractors and Central Valley Project water users. These funds are budgeted and appropriated through the federal and state governments. ERP amount includes local cost share for the 74 proposals recommended for funding this Year through the 2001 Proposal Solicitation Package. Water Use Efficiency and Watershed amounts include local cost sharing for grant projects funded through PSPs. Water Use Efficiency amount also includes non-Federal funding for Title XVI water recycling programs/projects. Levees amount includes local cost share for levee subventions. Science amount is SWP and other local contributions to the IEP. Additional local contributions in other program areas will be estimated as information is available.

TABLE 3 CALFED BAY-DELTA PROGRAM

year 2 funding by source ($ in millions)

		state funding					federal funding[2]				user/local funding[3]			
	Total Year 2 Funding	GF[5]	Prop 204	Prop 13	Other State[1]	Subtotal	USBR/W&RR[4]	USACE	Other Fed[2]	Subtotal	SWP	CVPIA RF	Local	Subtotal
Ecosystem Restoration	$188.2	$2.8	$126.3	$10.0		$139.1	$2.2	$1.2	$3.1	$6.5	$7.3	$18.8	$16.5	$42.6
Environmental Water Account	$48.0	$1.0	$28.2	$6.3		$35.5	$12.5			$12.5				
Water Use Efficiency	$333.7	$11.8		$43.3	$57.9	$113.0	$19.8		$18.2	$38.0			$182.7	$182.7
Water Conservation	($37.1)	($11.8)		($18.3)		($30.1)	($2.3)			($2.3)			($4.7)	($4.7)
Water Recycling	($296.6)			($25.0)	($57.9)	($82.9)	($17.5)		($18.2)	($35.7)			($178.0)	($178.0)
Water Transfers	$1.1	$0.9				$0.9	$0.2			$0.2				
Watershed	$17.3	$7.3		$10.0		$17.3								
Drinking Water Quality	$16.2	$4.1		$12.1		$16.2								
Levees	$17.2	$4.9	$8.4			$13.3		$0.3		$0.3	$0.6		$3.0	$3.6
Storage	$123.2	$14.1		$103.0		$117.1	$6.2			$6.2				
WMS/Oversight & Coor.	($1.5)	($1.5)				($1.5)								
Surface	($15.0)	($8.8)				($8.8)	($6.2)			($6.2)				
Groundwater	($106.8)	($3.8)		($103.0)		($106.8)								
Conveyance	$72.2	$3.3		$37.6		$40.9	$4.0			$4.0	$17.3	$10.0		$27.3
Science	$20.1	$5.1			$2.3	$7.4	$3.9	$0.2	$2.0	$6.1	$6.2	$0.2	$0.2	$6.6
CALFED Science	($6.6)	($4.9)				($4.9)			($1.7)	($1.7)				
IEP	($13.5)	($0.2)			($2.3)	($2.5)	($3.9)	($0.2)	($0.3)	($4.4)	($6.2)	($0.2)	($0.2)	($6.6)
Oversight & Coordination	$14.9	$7.3				$7.3	$7.5	$0.1		$7.6				
subtotal	$852.2	$62.6	$162.9	$222.3	$60.2	$508.0	$56.3	$1.8	$23.3	$81.4	$31.4	$29.0	$202.4	$262.8

[1]Includes State Revolving Funds ($57.9m) from the State Water Resources Control Board and Interagency Ecological Program (IEP) funding ($2.274m) from various departments that contributes to the Science Program.

[2]Includes U.S. Bureau of Reclamation Water and Related Resources (USBR W&RR), Central Valley Project Improvement Act Restoration Funds (CVPIA RF), U.S. Army Corps of Engineers appropriations (USACE), and other federal sources (Other Fed). Other Fed includes U.S. Fish and Wildlife Service funding that contributes to the Ecosystem Restoration Program (ERP- $2.242m), National Marine Fisheries Service funding that contributes to the ERP ($0.81m), U.S. Environmental Protection Agency funding ($18.2m) that contributes to the Water Use Efficiency Program, and IEP funding from U.S. Fish & Wildlife Service ($0.231), U.S. Geological Survey ($0.782), National Marine Fisheries Service ($0.035), and U.S. Environmental Protection Agency ($0.04) that contributes to the Science Program.

[3]User subtotal includes State Water Project Funds and CVPIA Restoration Funds that are collected from state water contractors and Central Valley Project water users. These funds are budgeted and appropriated through the federal and state governments. ERP and WUE amounts include estimates for local cost sharing for grant projects. WUE amount also includes local cost sharing for federal Title XVI recycling projects. Levees amount includes estimated local cost share for levee subventions. Science amount is SWP and other local contributions to the IEP. Additional local contributions in other program areas will be estimated as information is available.

[4]Includes $30 million for CALFED from P.L. 107-66. The allocation of the $30 million may be shifted between programs.

[5]A $20 million budget reduction in General Funds has been imposed by the Governor's Office in the following programs: WUE – $1.9 M; Watersheds – $2 M; DWQ – $5 M; Levees – $8.1 M; and Science – $3 M (numbers are approximations).

project	$
BAY REGION	
Alameda	
ACWD Schools & Water Conservation - Demonstration	$256,700
Oakland Zoo Recycling Feasibility Study	$204,600
Contra Costa	
A Straight Flush Commercial Ultra Low Flush Toilet Direct Install	$374,000
Contra Costa County Watershed Atlas and Creek Restoration Strategy	$50,000
The Save Our Delta Surveys (SODS)	$100,000
Walnut Creek Watershed	$260,000
Marin	
Local Watershed Stewardship: Steelhead Trout Plan	$47,500
Monterey	
Deep Aquifer Study and Management Plan	$260,000
Groundwater Recharge Feasibility Study	$100,000
Marina Coast Water District Water Conservation Feasibility Study	$143,256
On Farm Mobile Lab	$132,905
Napa	
Cullinan Ranch Restoration	$368,500
Ecological Monitoring of Tolay & Cullinan Ranch Tidal Areas	$593,931
Napa Creek Watershed Stewardship Year 3	$191,100
Napa River Watershed	$252,000
Napa River Watershed Mapping Partnership	$318,300
Napa River Wetlands Acquisition	$1,073,513
South Napa River Tidal Slough & Floodplain Restoration Project	$1,565,600
South Napa River Tidal Slough and Floodplain Restoration Project	$1,490,000
South Napa River Wetlands Acquisition and Restoration Program	$466,000
Stewardship Support & Watershed Assessment in the Napa River Watershed: A Two-Year Project	$360,900
Napa, Sonoma, Solano, Contra Costa, Marin	
IPM Partnership to Improve Water Quality in Suisun Bay and Local Creeks	$266,000
Sedimentation in the Delta and Suisun Bay	$1,367,684
San Francisco	
Yosemite Watershed Restoration Assessment Project	$771,000
San Francisco, Alameda, San Mateo	
Cold Water Fisheries and Water Quality Element	$200,000
Determine Biological, Physical & Chemical Characteristics of Ballast Water	$387,182
Preventing Exotic Introductions from Ballast Water	$222,830
Steelhead and Chinook Salmon Fish Passage Barrier Remediation on the Guadulupe River	$178,200
Santa Clara	
Almaden Reservoir Watershed Restoration Project	$300,000
Landscape & Agricultural Area Measurement & Water Budgets	$635,712
Stewardship Plans for the West Valley, Guadalupe, and Lower Peninsula Watersheds	$700,000
Upper Guadalupe River Tributary Monitoring Program and Pilot Restoration Project	$47,000
Santa Clara, Contra Costa, Alameda, Marin	
Regional High-Efficiency Washing Machine Rebate	$4,405,605
San Francisquito Creek Watershed Enhancement Program	$250,225
Westside Basin Groundwater Management Plan	$250,000
Santa Cruz	
Hydrogeologic Investigation and Monitoring in Scott's Valley	$250,000
Santa Cruz, Monterey	
Supplemental Wells/Injection Wells Water Quality Study	$30,450
Solano	
Adopt-a -Watershed Leadership Institute	$592,884
Bay Point shoreline Restoration Plan	$185,000
Benicia Waterfront Marsh Restoration	$59,000
Biological Restoration and Monitoring in the Suisun Marsh/North SF Bay Ecological Zone	$772,667
Chronic Toxicity of Envir. Contaminants in Sacramento Splittail - A Biomarker Approach	$673,684
Environmental Stewardship Educational Conferences & Tours	$48,500
Fish Screen Construction Suisun Marsh	$450,000
Fish Screen Construction Suisun Marsh (Phase 2)	$500,000
Hill Slough West Habitat Restoration. Demo Project	$87,000
Invasive Spartina Project	$1,793,661
Reintroduction of Endangered Soft Bird's Beak to Restored Habitat	$148,627
Suisun Marsh Property Acquisition & Restoration	$536,750
Estuary Action Challenge Environmental. Education Project	$50,000
Sonoma	
City of Santa Rosa Evapotranspiration Controllers Feasibility Study	$93,587
Culture of Delta Smelt	$1,025,015
Hill Slough West Habitat Demonstration Project	$200,000
Petaluma Marsh Expansion Project - Marin County	$352,135
Petaluma River Watershed Restoration Program	$220,000
Regional Wetlands Goals Project	$76,000
Sonoma Creek Watershed	$302,000
Sonoma Creek Watershed Conservancy	$438,923
Sonoma Creek Watershed Conservancy	$545,170
Sonoma Creek Watershed Conservancy: Outreach and Restoration	$270,541
Species & Community Profiles of the SF Bay Area Wetlands Ecosystem Goals Project	$45,320
Tolay Creek Restoration	$283,000

DELTA REGION	
Contra Costa	
Alhambra Creek Watershed CRMP Program	$138,500
Kirker Creek Watershed CRMP Program	$198,450
Stockton EWD & CCWD Fish Screen Facilities	$670,000
Franks Tract Restoration	$323,186
Rhode Island Floodplain Management and Habitat Restoration	$25,000
Study Associated with Restoration of Franks Tract	$1,218,105
Watershed Stewardship in Marsh Creek	$126,000
Contra Costa, San Joaquin	
Demo Project for Protection of Delta Islands	$928,150
Sacramento	
Arden-Cordova Evapotranspiration Controller/Rain Shut-off Program	$23,750
Cosumnes Floodplain Acquisition and Restoration	$3,500,000
Cosumnes River Acquisition, Restoration Planning and Demonstration	$750,000
Cosumnes River Preserve (Valensin Ranch Acquisition)	$1,500,000
Cosumnes River Salmoid Barrier Program Fishery	$188,255
Cosumnes River Watershed Inventory and Assessment	$556,325
Cosumnes Start-up Stewardship and Restoration	$1,985,100
Dry Creek Reclaimed Water Groundwater Recharge Feasibility Study	$287,500
Four Projects for Sacramento Area Water Use Efficiency	$16,661,950
Inventory of forest road systems, Cat Creek Watershed	$45,320
Juvenile Salmon Migratory Behavior Study in Delta	$210,000
McCormack-Williamson Tract Acquisition	$5,356,000
McCormack-Williamson Tract, Ph. II Monitoring	$572,886
McCormack-William Tract Restoration Plan, Design & Monitoring	$365,650
McCormack-Williamson Tract Wildlife Levee Management	$122,014
Restore Habitat on McCormack-Williamson Levees	$860,778
Rio Linda, El Verta - Natomas In-Lieu Groundwater Recharge Feasibility Study	$189,750
Sherman Island - Levee Habitat Demonstration Project	$480,000
Stone Lakes NWR Land Acquisitions	$2,622,500
Tyler Island Levee Protection and Habitat Restoration Pilot Project	$885,202
Water-Wise Demonstration Landscape	$277,663
Sacramento, El Dorado	
Linked Hydrogeomorphic Ecosystem Models to Support Adaptive Management	$1,546,016
Sacramento, San Joaquin	
Cosumne/Mokelumne Corridor Floodplain Acquisitions	$3,044,342
Cosumnes River Feasibility Study	$1,007,800
Influence of Flood Regimes, Vegetative and Geomorphic Structures on the Links between Aquatic and Terrestrial Systems	$2,521,236
NPS Pollution Reduction in Vineyards	$365,300
Sacramento, Yolo, Solano	
Hastings Tract screen feasibility study	$27,000
North Delta Area - Juvenile Salmon Rearing	$24,500

project	$
Sacramento, Yolo, Solano, San Joaquin	
1999/2000 Bay-Delta Education Program	$33,269
Algal Toxicity	$500,000
Arundo Donax Eradication and Coordination.	$842,587
Assessing Ecological & Economic Impacts of the Chinese Mitten crab	$113,033
Assessment of Ecological and Human Health Impacts of Mercury in the Bay-Delta Watershed	$4,164,000
Assessment of organic matter in the habitat and its relationship to the food chain	$1,440,649
Assessment of Pesticide Effects on Fish & Their Food Resources	$1,586,894
Biological Assessment of Green Sturgeon	$211,164
Biological Assessment of Green Sturgeon in the Sacramento-San Joaquin Watershed	$241,000
Central Valley Steelhead Genetic Evaluation	$70,636
Contaminant Effects on Smelt	$437,326
Culture of Delta Smelts Phase II & III	$576,229
Determine Effects of Toxics	$110,000
Developing a Methodology to Accurately Simulate Entrainment of Fish	$200,000
Development of a Comprehensive Implementation Plan for a Statistically Designed Marking & Recovery Plan	$74,951
Digital Soil Survey and Mapping Imagery Develop	$502,100
Dissolved Organic Carbon Release from Delta Wetlands, Part 1	$1,434,449
Dissolved Organic Carbon Release-Delta Wetlands	$1,030,000
East Delta Habitat Corridor (Georgiana Slough)	$1,100,000
Effects of Introduced Clams on the Food Supply of Bay-Delta Fishes	$1,000,490
Effects of introduced Species of Zooplankton & clams on the Bay-Delta Food Web	$653,384
Effects of Wetlands Restoration on Methyl Mercury Levels	$546,171
Evaluation of Alternative Pesticide Use Reduction Practices	$1,113,781
Evaluation of Potential Impacts of Chinese Mitten Crab on Benthic Comm. In the Delta	$152,233
Evaluation of Selenium Sources, Levels, and Consequences in the Delta	$1,627,117
Evaluation of tagging data	$672,600
Expanding California Salmon Habitat to Alter Dams and Diversions	$49,000
Fathead Minnow Toxicity	$400,000
Food Reserve for Zooplankton in the S. San Joaquin River Delta	$576,422
Genetic Identification of Watershed Dependent Species	$851,669
In-Channel Island Restoration/demonstration	$270,270
Innovative Fish Screen for Small Diversions Demonstration Project	$90,000
Introduced Spartina Eradication Project	$275,000
Introduction of Non-indigenous Aquatic Species Research Program	$197,000
Levee Setback Geomorphic Model	$104,458
Monitoring of Delta contaminants	$100,000
Non-native Invasive Species Advisory Council	$50,000
Practical Guidebook to Prevent & Control for Non-native Invasive Plants in Shallow Water Habitats of the Bay-Delta Ecosystem	$76,750
Purple Loosestrife Prevention, Detection & Control Actions for the Sacramento-San Joaquin River Delta System	$127,473
Purple Loostrife Prevention, Detection & Control in the Sac/San Joaquin Delta & Associated Hydrologic Units	$201,306
Rainbow Trout Toxicity Monitoring	$530,000
Reducing Risk of Importation & Distribution on Non-native Invasive Species Through Outreach & Education	$105,466
Research to Predict Evolution of Restored Diked Wetlands	$575,172
Delta Sediment Water Quality	$24,000
Delta Sediment Water Quality	$276,000
Delta Sediment Water Quality	$200,000
Sedimentation movement and availability and monitoring in the Delta	$1,047,010
Small Diversion Fish Screen Program	$900,000
Twitchell Island Subsidence Study	$194,870
Understanding Tidal Marsh Restoration Processes & Patterns	$1,042,246
Water Hyacinth Education Program	$64,500
Water Quality Criteria for Chlorpyrifos and Diazinon (Designated Action)	$67,753
Winter-run Chinook Salmon Captive Broodstock Program	$300,000
Zebra Mussel Detection & Outreach Project	$100,000

San Joaquin	
Canal Ranch Habitat Restoration Phase II	$135,940
Fay Island Restoration Project	$744,148
Fern-Headreach Tidal Perennial Aquatic and Shaded River Aquatic Conservation Project	$425,000
Lower Mokelumne River Restoration Program	$680,000
Lower Mokelumne River Watershed Education Project	$70,140
Proposal to Develop Local Watershed Stewardship Plan for the Lower Mokelumne River	$159,000
Staten Island Acquisition	$35,220,873
Task 1.1: Program Coordination	$277,000
Transport, Transfer & Effects of Selenium and Carbon in the Delta	$2,600,000
Woodbridge fish screen and passage	$1,575,000
San Joaquin, Stanislaus, Merced, Madera, Fresno	
Determination of the Causes of Dissolved Oxygen Depletion in the San Joaquin River	$892,400
Solano	
Cache Slough habitat enhancement	$85,000
Hastings Tract Fish Screen Phase II: Construction	$271,250
Jepson Prairie Restoration and Conservation Plan	$244,801
Lagoon Valley Watershed Restoration	$431,000
Liberty Island Acquisition	$8,926,000
Liberty Island Acquisition & Restoration Phase II	$2,701,734
Prospect Island - Develop Monitoring Plan	$35,000
Prospect Island - Shallow Water Habitat/Wetlands Restoration Plan	$2,500,000
Prospect Island Habitat Protection Project	$2,000,000
Prospect Island Monitoring Project	$915,000
Stanislaus	
Restore Special Run Pool 10 Reach	$165,000
Tuolumne River Natural Resources Program	$3,583,000
Yolo	
Discover the Flyway	$49,000
Educating Farmers & Landowners in Biological Reserve Management	$1,066,593
Inundation of a Section of the Yolo Bypass to Restore Sacramento Splittail & Other Native Species	$912,309
The Virtual Science Center and Hands-on Learning Programs	$9,600
Watershed Restoration Strategy for the Yolo Bypass	$244,188
Yolo Bypass - Habitat Restoration Study	$226,000
Yolo Bypass Management Strategy Phase II	$210,000
Yolo Bypass Watershed Planning Project	$288,081
Yolo County (FCWCD) Yolo Zamora Water District Conjunctive water use Project	$427,800

SACRAMENTO VALLEY REGION

Butte	
Adams Dam Fish Screen & Ladder	$70,304
Adams Dam Screen and Passage	$217,000
Butte Cr/Sanborn Slough Bifurcation Upgrade Project	$1,000,000
Butte Creek - Watershed Management Strategy Plan	$83,000
Butte Creek Acquisition and Riparian Restoration	$187,128
Butte Creek Acquisition and Riparian Restoration	$125,000
Butte Creek Riparian Restoration Demonstration	$76,348
Butte Creek Watershed	$302,867
Butte Creek Watershed Floodplain Management Plan	$582,510
Cherokee Watershed Organizational Capacity and Citizen Monitoring Project	$93,815
Construct Fish Ladder on Parrott-Phelan Dam	$0
Construct Siphon & Associated Improvements on Western Canal	$3,095,873
Fish Screen and Ladder Construction	$316,500
Gorrill Dam Fish Screen & Ladder	$67,990
Gorrill Dam Screen and Ladder	$369,641
OWID Palermo Canal Lining Project	$251,000
Watershed Education Program	$100,865
Western Canal Water District Tailwater Recovery System Feasibility Study	$125,000
Butte, Colusa, Glen	
The Butte Creek Watershed Educational Workshops and Field Tours Series	$33,000

project	$
Butte, Glenn	
WCWD Water Use Efficiency Project	$285,524
Butte, Yuba, Sutter	
Ferris Meadow Reach-Feather R. Corridor Restoration Management	$1,009,400
Colusa	
Maxwell ID-Tuttle Pump Relocation Project	$440,737
Sand and Salt Creek Watershed Project	$599,000
Colusa, Sutter	
RD 108 screen construction	$2,500,000
Wilkins Slough - Fish Screen Prelim. Design	$100,000
Small Fish Screen Evaluation	$95,000
El Dorado	
ARC Water Quality Assessment: South Fork American and Cosumnes River Basins	$96,700
Ultra Low Flush Toilet Rebates for Low-Income Customers	$104,300
Glenn	
Glenn County Installation of Dedicated Multicompletion Groundwater Monitoring System with Extensometers and Observation Wells	$265,000
Orland Project Water Conservation Feasibility Study	$140,000
Regional Water Use Efficiency Project	$296,800
Glenn, Butte, Colusa	
Fish Screen Construction	$5,500,000
Fish Screen -Feasibility Engineering	$75,000
Princeton Fish Screen Construction	$1,750,000
Princeton Pumping Plant Fish Screen (Phase 1-Feas.)	$75,000
Sac River Fish Small Screen Project	$1,800,000
Glenn, Colusa, Yolo	
Colusa Basin Watershed Program	$492,500
Glenn-Colusa	
GCID System Optimization for Fisheries, etc.	$1,322,000
Humboldt	
City of Rio Dell Water Conservation Feasibility Study	$100,000
City of Trinidad Water Conservation Feasibility Study	$100,000
Fieldbrook Community Services District Water Conservation Feasibility Study	$100,000
Lake	
Big Valley Groundwater Recharge Investigation Update	$179,004
Middle Creek Ecosystem Restoration Project- Design Phase	$135,818
Nevada	
South Yuba River Comprehensive Management Plan	$524,671
Yuba River Conservancy Planning and Public Outreach Proposal	$192,300
Orange	
Water Softener Pilot Program	$357,005
Placer	
City of Roseville Creek and Riparian Management and Restoration Plan	$228,470
Douglas/Long Canyon Paired - Watershed Project	$86,108
North/Middle Forks American River Watershed EUI-Based Watershed Management Plan	$554,500
Real-time Canal Flow Monitoring and Canal Lining	$1,325,488
Western Placer Watersheds Coordination, Planning & Assessment	$425,764
Plumas	
The Last Chance Assessment of Model Protocol	$582,000
Plumas, Sierra	
Hydrogeology and Groundwater Monitoring in Sierra Valley	$250,000
Sacramento	
Assessment and Implementation of Urban Use Reduction of Diazion and Chlorpyrifos	$663,500
Watershed Management Planning for Sacramento River Riparian Program	$200,000
Development of River Corridor Management Plan (RCMP)	$250,000
Sacramento, El Dorado, Placer	
American River Integrated Watershed Stewardship Strategy	$220,750
Shasta, Tehama, Butte, Glenn, Colusa, Sutter, Yolo	
Arundo Donax: Survey and Eradication	$360,000
Floodplain Acquisition. & Management on Sacramento River	$534,570
Promotion of Farming Best Management Practices and Calibration Technology to Mitigate OP Pesticide Runoff into the Sacramento River Watershed	$308,000
Riparian Corridor Acquisition & Restoration Assessment	$2,240,250
Sacramento River Acquisition and Riparian Forest Restoration	$780,000
Sacramento River and Major Tributaries.- Corridor Mapping Project	$145,200
Sacramento River Conservation Area Program	$326,991
Sacramento River Floodplain Acquisition and Riparian Restoration	$9,879,800
Sacramento River Meander Restoration	$898,700
Sacramento River Valley	
Sacramento River Floodplain Acquisition and Riparian Restoration	$512,500
Sacramento, Yolo, Solano, San Joaquin	
Fish Treadmill Developed Fish screen Criteria for Native Sacramento-San Joaquin Watershed Fishes	$823,000
Sacramento River Discovery Center	$39,552
Shasta	
ACID Churn Creek Lateral Improvement Project Feasibility Study	$100,000
City of Redding Water Utility Fish Screen Rehabilitation.	$510,262
Clear Creek Juvenile Salmon Monitoring Project	$871,026
Clear Creek Prescription	$256,260
Genetic Comparison of Steelhead Stocks in Clear Creek	$45,493
Gravel Restoration Project	$0
Lower Clear Creek Floodway Restoration Project	$3,559,596
Redding Area Water Resources Master Plan - Phase 2C	$250,000
Saeltzer Dam Fish Passage	$238,200
Sulphur Creek Coordinated Resource Management Planning Group	$23,828
Interactive Watershed Information Model for Education and Adaptive Management	$378,899
Shasta West Watershed Assessment	$131,600
Shasta, Modoc, Lassen	
Pit River Watershed Alliance Watershed Management Program	$542,456
Shasta, Glenn, Colusa, Yolo, Sutter, Butte, Sacramento	
Sub-basin Level Water Measurement Program	$7,756,000
Shasta, Tehama	
ACID Fish Passage	$325,000
ACID Fish Passage and Fish Screen Improvement Project, Phase II, Final Design	$860,000
ACID Fish Passage and Fish Screen Improvement Project, Phase III	$5,253,000
ACID Fish Screen	$5,100,000
Battle Creek - Chinook Salmon & Establish Watershed Conservancy	$50,000
Battle Creek - Chinook Salmon & Steelhead Restoration Study	$306,000
Battle Creek Anadromous Salmonid Monitoring Projects	$1,576,152
Battle Creek Riparian Protection	$1,000,000
Battle Creek Salmon and Steelhead Restoration Project	$28,000,000
Battle Creek Screens and Fish Passage	$395,000
Battle Creek Screens and Fish Passage	$395,000
Battle Creek Watershed Stewardship	$145,000
Cottonwood Creek Watershed Group Formation	$161,000
Cottonwood Cr. Watershed Monitoring. & Assessment	$360,500
Cottonwood Creek Channel Restoration Planning	$61,000
Fish Passage Improvement Project at the Red Bluff Diversion Dam	$340,600
Fish Passage Improvement Project at the Red Bluff Diversion Dam	$1,030,000
Improve Upstream Ladder & Barrier Weir @Coleman Nat'l Fish Hatchery at Battle Creek	$2,500,000
Lake Red Bluff Riparian Area Restoration & Education Support Project	$29,114
Main Canal Modernization	$4,113,000
Monitoring Spring and Winter-run Chinook Salmon and Steelhead in Battle Creek	$150,000
Sacramento River Winter Chinook Salmon Carcass Survey	$305,273
Selected fish screens	$374,850
Spawning Areas of Green Sturgeon in the Upper Sacramento River	$60,801
Solano	
Lower Putah Creek Watershed Assessment and Stewardship Implementation Program	$600,000
Sutter	
Lower Butte Creek Project Phase III	$4,783,719
Sutter County Integrated Watershed Coordinator	$195,200
Sutter National Wildlife Refuge Water Conveyance Restoration Project	$521,250
Sutter, Placer, Sacramento	
American Basin Fish Screen & Habitat Improvement	$950,000
Project Management & Scoping	$203,250

project	$
Restoration planning (M and N Fork American River, Auburn Ravine, Coon Creek)	$222,530
Sutter, Sacramento	
American Basin Fish Screen and Habitat Improvement Project	$200,000
City of Sac. Fish screen Program	$6,020,995
City of Sacramento Fish Screen Replacement Project Phase 2 - Design	$654,500
RD 2035 Fish Screen	$100,000
Sutter, Yuba, Sacramento	
Riparian Habitat Restoration Verona-Collinsville (Phase 1-Feas.)	$500,000
Tehama	
Anadromous Fish Passage at Clough Dam on Mill Creek	$1,215,000
Deer and Mill Creeks Acquisition and Enhancement	$1,000,000
Lassen Natl. Forest Watershed Stewardship	$849,845
Lower Mill Creek riparian Restoration	$69,000
Lower Mill Creek riparian Restoration	$30,000
Water Inventory and Analysis for Tehama County	$272,500
Watershed Planning (Deer Creek)	$196,554
Lassen National Forest Watershed Stewardship within the Anadromous Antelope Creek Watershed	$673,000
Tehama, Butte	
Boeger Family Farm Fish screen Phase II: Construction	$139,500
Butte Creek Big Chico & Sutter Sal & Steelhead Evaluation	$280,951
Estimated Abundance of Juvenile to Adult Escapement in Sacramento River	$1,081,638
Pump Station Relocation Construction	$1,610,000
Real Time Flow Monitoring	$418,700
Watershed Plan (Big Chico Creek)	$422,830
Watershed improvements/sediment stabilization (Deer, Mill, Antelope Creeks)	$371,000
Deer Creek Watershed Conservancy Rangeland and Riparian Management Program	$212,000
Tehama, Butte, Glenn, Sutter, Colusa	
Lower Butte Creek Project Phase II	$775,000
White Mallard Dam & Associated Diversions	$84,938
Yolo	
A Management Program for Tamarix & Arundo don ax on Cache Creek	$222,200
Capay Valley Community Action Plan	$40,000
Capay Valley Watershed Improvement Program	$118,000
Metering El Macero Water Service Area of Davis	$356,250
RD 2035 Fish Screen Design & Environ. Review	$1,820,000
Sustaining Agriculture & Wildlife Beyond Riparian Corridor	$1,464,167
Union School Slough Watershed Improvement Program	$636,000
Willow Slough Watershed Rangeland Stewardship Program	$1,800,668
Yolo, Solano	
Lower Putah Creek Watershed Stewardship Program	$100,500
Yuba	
Development of Implementation Plan for Lower Yuba River Anadromous Fish Habitat Restoration	$3,000,000
Life History and Stock Composition of Steelhead Trout	$120,000
South Yuba River Coordinated Watershed Management Plan	$264,000
Yuba County Conjunctive Use Program	$1,500,000
Yuba River Fish Screen Replacement	$114,750
Yuba Watershed Council	$142,618
Sac River Small Diversion Fish Screen Program	$322,081
Wilson Ranch Screen	$200,000

SAN JOAQUIN REGION

San Joaquin	
Biological Agricultural Systems in Cotton-BASIC-Reducing Synthetic Pesticides & Fertilizers in the N. San Joaquin Valley	$460,000
Calaveras	
Calaveras River Watershed Management Plan Implementation Program (Phase II)	$195,000
Camanche/Valley Springs Groundwater Study	$241,180
Contra Costa, Alameda, San Joaquin, Stanislaus, Merced	
Bacterial treatment of Selenium in the Panoche Drainage	$1,149,000
Fresno	
Arroyo Pasajero/Cantua Creek Conjunctive Use Hydrologic Study	$72,900
Current Condition Assessment of the Silver Creek Drainage and Panoche Alluvial Fan Areas of the Panoche/Silver Creek Watershed	$200,000
Dedicated Recharge Basin	$2,145,750
Groundwater Monitoring and Recharge Investigation Project	$249,895
McMillan Recharge Project	$136,500
Millerton Area Watershed Coalition	$102,154
On-farm Integrated Irrigation & Drainage Management	$1,122,385
Pleasant Valley Groundwater Storage Pilot Project	$590,550
Variability of Soil Salinity on Farms	$281,410
Waldron Pond Expansion Project	$97,500
Fresno, Kings	
Total Utilization of Drainage & Minimization of Evaporation	$148,030
Fresno, Kings, Kern	
Irrigation Scheduling	$1,365,000
Fresno, Kings, Tulare	
Monitoring Well Replacement	$250,000
Inyo	
Development of Hydrologic and Vadose Models to Improve Groundwater management in the Owens Valley	$375,750
Kern	
B-369 Distribution System and Lateral / B-230-D Extension	$5,763,410
Groundwater Management in Indian Wells Valley Basin	$207,000
Groundwater Recharge Feasibility Report	$280,000
Groundwater Storage Program	$1,583,094
P-667 Distribution System	$4,309,808
Service Area 3 Distribution System Improvement	$650,100
Service Area 5 Distribution System Improvement	$894,900
Water Quality Study	$282,246
Kern-Tulare	
Water Use Efficiency Project	$8,000,000
Kings	
AWD In-Lieu Groundwater Recharge Feasibility Study	$97,500
Tulare	
Hannah Ranch Site - Recharge Feasibility Study	$94,000
Madera	
Gravely Ford Canal Dedicated Basin	$69,000
Groundwater Basin Data Management System	$245,000
In-Lieu Groundwater Recharge Feasibility Study	$68,000
Madera, Fresno	
On-farm Irrigation System Improvements	$467,706
Merced	
Merced River Corridor Restoration Plan	$300,000
Merced River Corridor Restoration Project Phase III	$235,870
Real Time WQ Management of Seasonal Wetlands	$671,900
Merced River Salmon Habitat Enhancement; Lower Stone	$130,000
Merced River Salmon Habitat Enhancement; Ratzlaff Reach	$1,586,350
Phase 3 - Merced River Salmon Habitat Enhancement	$2,433,759
Merced	$1,699,101
San Bernardino	
Groundwater Management Plan for the Mojave Water Agency	$550,000
San Joaquin	
Delta Studies Program for San Joaquin County Schools	$306,291
Demo of Passage Technology for Restoration of Newton CU Mine	$60,000
Enhancement of the San Joaquin County Groundwater Monitoring Program	$923,527
Murphy Creek Restoration Project	$282,500
SEWD Groundwater Storage Pilot Project	$1,788,000
Sub-surface Drip Irrigation of Asparagus	$2,400,500
The Arroyo Pasajero Watershed: Restoring the Land for the Water	$200,000
This River is Our River: Watershed Capacity Building	$373,875

project	$
San Joaquin, Sacramento	
Implementing programs to reduce the use of pesticides and fertilizers in Sacramento and San Joaquin watersheds	$1,680,631
Implementing programs to reduce the use of pesticides and fertilizers in Sacramento and San Joaquin watersheds (BIOS)	$660,000
San Joaquin, Stanislaus, Merced, Fresno	
Panoche/Silver Creek Watershed Management Action Plan	$873,440
San Joaquin, Stanislaus, Merced, Madera, Fresno	
Acquisition and Restoration of Refuge Lands (San Joaquin R NWR)	$10,827,000
Banta-Carbona fish screen	$938,875
Bear Creek Floodplain Restoration Demonstration Project (SLNWR)	$334,000
Developing a Genetic Baseline for San Joaquin Salmon	$387,003
Fish Screen Project	$100,000
Focused Action to Develop Ecol. Based Hydro Model	$304,803
Health Monitoring of Hatchery & Natural Fall-run Chinook in San Joaquin River	$38,996
Mechanistic Approach to Riparian Restoration	$230,376
River Studies Center Exhibits & Programs	$70,467
San Joaquin River Pilot Project	$2,575,000
San Joaquin River Real-Time Water Quality Management Program	$931,857
San Joaquin Valley Salmonids in the Classroom Program Enhancement	$3,000
Santa Barbara	
Wellhead Protection Demonstration Project and Pilot Demonstration A&R Program	$250,000
Stanislaus	
Chinook Salmon Movement in the Lower San Joaquin R and South Delta	$285,000
Floodplain Easements; Lower Tuolumne and San Joaquin (DA9)	$1,545,000
Gravel at Basso Bridge	$250,975
Grayson River Ranch Perpetual Easement and Restoration	$732,000
Hamilton Wetlands Restoration Planning	$830,500
Irrigation Mgmt. & Dormant Spray Reduction	$1,026,794
Lower San Joaquin River Floodplain Protection and Restoration Project	$1,100,000
Patterson ID Positive Barrier Fish Screen on San Joaquin	$175,000
Restore MJ Ruddy Reach	$3,332,050
San Joaquin R NWR Riparian Habitat Protection & Restor.	$7,646,233
Southwest Stanislaus County Regional Drainage Water Management	$848,138
Tuolumne R. Bobcat Flat Floodplain Acquisition	$2,043,850
Tuolumne R. Restoration: Special Run Pool 11	$543,530
Tuolumne River Channel Restoration (Pool 9)	$2,353,100
Tuolumne River Fine Sediment Management	$910,486
Tuolumne River Initiative: Developing an Integrated Plan	$250,000
Tuolumne River Mining Reach Restoration No.3 Warner-Dierdorf Segment	$910,486
Tuolumne River Setback Levees and Channel Restoration	$2,801,000
Water Challenge 2010	$94,213
Stanislaus, San Joaquin	
Knights Ferry Gravel Replenishment	$536,410
Tuolumne River Setback Levees and Channel Restoration	$1,362,000
Water Acquisition	$3,090,000
On-Farm Ditch and Cast-in-Place Replacement	$548,000
Tulare	
Groundwater Recharge Facilities Feasibility Study	$82,984
Kennedy Wasteway/Sandridge Canal Feasibility Study	$57,000

SOUTHERN CALIFORNIA REGION

All Counties	
Brookside Golf Course Water Management Project	$356,200
Claremont Evapotranspiration Controller/Rain Shut-off Program	$95,000
Commercial Rebate Program	$3,268,000
Community Water Education and Training (WET)	$3,900,000
Demo. of Water Cons. in Urban Supermarkets	$180,000
Dominguez Gap Enhanced Groundwater Recharge Feasibility Study	$176,446
High-efficiency Clothes Washer Rebates	$1,500,000
Live Oak Basin Pilot Project	$500,000
New Courses for Bilingual Landscape Education	$150,000
San Dimas Evapotranspiration Controller/Rain Shut-off Program	$95,000
San Gabriel River Watershed Citizen Monitoring Program	$51,120
San Gabriel Valley. Indoor/Outdoor Water Savings Survey	$43,757
Los Angeles	
LA, SE District Evapotranspiration Controller/Rain Shut-off Program	$47,501
Los Angeles & San Gabriel Rivers Watershed Council Organizational Development	$288,000
Study of Augmenting Groundwater Supplies Through Capture of Urban Runoff	$971,800
Sun Valley Watershed Management and Water Replenishment Project	$430,000
Orange	
Expansion of the Learning to be WaterWise Program	$58,245
Joint Agency X-Ray Processor Retrofit Model	$41,698
Riverside	
Back Basin Injection Pilot Project	$1,664,750
Cabazon Groundwater Recharge Project	$152,260
Coldwater Basin Groundwater Recharge Feasibility Study	$198,000
Development of a Groundwater Management Plan for the Elsinore Basin	$592,000
Feasibility Study for CVWD Irrigation System	$99,929
Hemet / San Jacinto Groundwater Storage Program	$400,000
Martinez Canyon Pilot Recharge Study	$1,629,521
Salt-Tolerant Crops Evaluation	$69,600
Upper Chuckwalla Groundwater Storage Program	$530,380
Riverside, San Bernardino	
Yucaipa Water Conservation Feasibility Study	$89,324
San Bernardino	
Groundwater Recharge Facilities Feasibility Study	$145,000
Transition Zone Mojave River Groundwater Recharge Feasibility Study	$200,000
San Diego	
Lower San Luis Rey River Valley Groundwater Storage and Recovery Pilot Project	$2,500,000
San Diego River System groundwater Management Program	$670,560
Voucher Incentive - Clothes Washers- Residential	$873,500
San Luis Obispo	
Los Osos Evapotranspiration Controller/Rain Shut-off Program	$47,500
Santa Barbara	
Weather TRAK Evapotranspiration Controller	$351,325
Ventura	
Inland Saline Intrusion Assessment Project	$248,600

MULTIPLE REGIONS

Sacramento, Yolo, Solano, San Joaquin	
Applied Research to Identify Chinook Salmon Runs via Genetics	$450,000
Bay-Delta Environmental Restoration Education Program	$40,000
Bay-Delta Learning Initiative	$126,668
Environmental Agriculture Conferences and Field Tours	$28,000
Estuary Action Challenge Environmental Education Project	$51,500
Traveling Film Festival Exhibit	$51,500
Traveling Film Festival/ San Joaquin River Oral History Film	$216,550
Traveling Film Festival/Heron Booth/Video Archive	$54,000
Water Challenge 2010 Exhibit	$52,015
Watershed Educational Training	$13,390
Statewide	
California Water Conservation Support Network	$210,000
Citizen Involvement and Regional Outreach Program	$608,132
Discover the Flyway	$197,987
Efficient Landscape Water Program	$1,022,639
Implementation of BMPs to Mitigate OP Pesticides Runoff	$400,000
Irrigation Districts' Technical Assistance	$600,000
Partnership for Sub-Regional Watershed Forums and a Watershed Center	$498,122
Public Information Program	$1,350,000
Quantifying Commercial Industrial Institution Demand Side Management Potential	$145,000
Sacramento River, Headwaters to the Ocean, Public Information and Education	$321,816
The Learning Watershed Project	$56,907
Water Conservation and Recycling Awareness	$241,593

reference documents

California's Water Future: A Framework for Action – June 9, 2000

Final Programmatic Environmental Impact Statement/Report (EIS/EIR) – July 21, 2000

- Main Document (Impact Analysis) – 1,200 pages
- Executive Summary of EIS/EIR Main Document – 40 pages
- Phase II Report – 200 pages
- Implementation Plan – 190 pages
- Ecosystem Restoration Program Plan – 1,200 pages, four volumes
- Levee System Integrity Program Plan – 500 pages
- Water Quality Program Plan – 300 pages
- Water Use Efficiency Program Plan – 190 pages
- Water Transfer Program Plan – 100 pages
- Watershed Program Plan – 100 pages
- Multi-species Conservation Strategy – 500 pages
- Comprehensive Monitoring Assessment & Research Program Plan – 150 pages
- Response to Comments – 1,500 pages, three volumes

Record of Decision – August 28, 2000

CALFED Bay-Delta Program Project Tracking

ERP Draft Stage 1 Implementation Plan

CALFED

BAY-DELTA

PROGRAM

ANNUAL REPORT

2001

CALIFORNIA WATER

CALFED AGENCIES

CALIFORNIA

The Resources Agency
- Department of Water Resources
- Department of Fish and Game
- The Reclamation Board
- Delta Protection Commission
- Department of Conservation
- San Francisco Bay Conservation and Development Commission

California Environmental Protection Agency
- State Water Resources Control Board

California Department of Health Services

California Department of Food and Agriculture

FEDERAL

Department of the Interior
- Bureau of Reclamation
- Fish and Wildlife Service
- Geological Survey
- Bureau of Land Management

Environmental Protection Agency

Army Corps of Engineers

Department of Agriculture
- Natural Resources Conservation Service
- Forest Service

Department of Commerce
- National Marine Fisheries Service

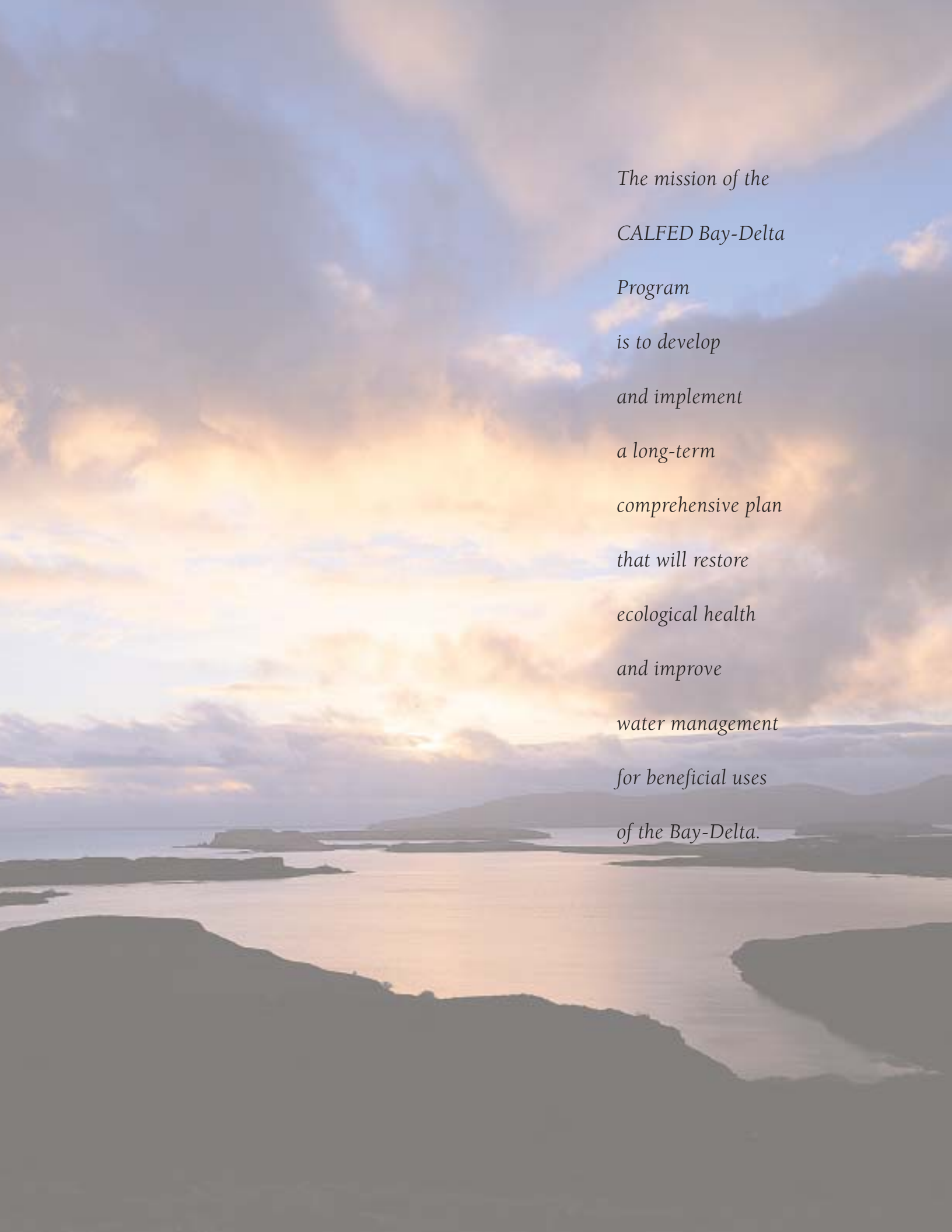
Western Area Power Administration

CALFED BAY-DELTA PROGRAM

The CALFED Bay-Delta Program is a collaborative effort among 23 state and federal agencies (CALFED agencies) to improve water supplies in California and the health of the San Francisco Bay-Sacramento-San Joaquin River Delta Watershed. Under the current governance structure, the CALFED agencies cooperatively implement the Program through their respective agency program authorities, e.g., Federal Central Valley Project Improvement Act, State Proposition 13, State Senate Bill 34, etc., and pertinent funding mechanisms.

In their totality, the individual actions of the CALFED agencies represent the projects and accomplishments shown throughout this report. Additionally, the report's accomplishments are in some instances cumulative in that actions and projects undertaken by CALFED agencies have been ongoing and often pre-date the formation of the CALFED Program.

A fundamental premise of the program is that the agencies can best meet their individual responsibilities by sharing information and cooperating with each other. The CALFED Program is not itself an agency and exercises no authority over the agencies. The program relies on the continuous cooperation of each participating agency, exercising its own legal authority.



The mission of the CALFED Bay-Delta Program is to develop and implement a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta.

TABLE OF CONTENTS

CALFED BAY-DELTA PROGRAM ANNUAL REPORT 2001

EXECUTIVE SUMMARY

Director's Message 1
Accomplishments in 2001 2
Program Highlights 4
Summary of Progress and Balance 12

INTRODUCTION

We All Depend on the Bay-Delta 14
Defining the Conflict 15
Resolving the Conflict 16
An Unprecedented Scope and Vision 17
Timeline 18
Shaping the Solution Through Partnerships 19

REGIONAL VIEW

The Sacramento Region 22
The Delta Region 24
Bay Area Region 26
San Joaquin Valley Region 28
Southern California Region 30

PROGRAM ELEMENTS

A Balanced Approach 32
Science 34
Water Management 37
Storage 40
Conveyance 43
Water Use Efficiency 45
Water Transfers 47
Ecosystem Restoration Program 49
Environmental Water Account 51
Watershed Management 53
Drinking Water Quality 55
Levee System Integrity 57

PROGRAM MANAGEMENT

Program Tracking and Accountability 59
Legislative Actions for 2001 61
Litigation Update 63
Fiscal Information 64
Grants and Loans Project List 69

REFERENCE DOCUMENTS 74

When the CALFED Bay-Delta Program concluded its five-year planning phase last year, many wondered if it could make the transition to a full-scale, cutting edge program capable of resolving ecosystem and water supply reliability problems in California.

As it completes its first full year of implementation, the CALFED Program is building a strong track record in several key areas. More than $500 million has been allocated for water supply, water quality, ecosystem restoration, and levee stability projects throughout California. CALFED's innovative Environmental Water Account provided nearly 300,000 acre-feet of water for environmental needs without reducing deliveries to cities and farms. And through state and federal dry year programs, nearly 300,000 acre-feet was made available to areas suffering from water shortages.

Regional strategies are also beginning to emerge. From the Sacramento Valley Water Management Agreement to water quality exchange programs in the Bay area and Southern California, local groups are developing collaborative, multiple purpose projects to meet their most pressing water needs. These strategies (described on pages 22-32) represent the future of CALFED—funding collaborative, locally-based initiatives to meet the Program's goals.

And perhaps most significant, the Science Program, led by Chief Scientist Sam Luoma, firmly established itself through a series of studies, workshops and panels as an independent, highly credible force for improving the scientific basis of all major projects and programs.

At the same time, however, a number of important program elements are behind schedule—primarily due to a lack of funding. Key projects to increase storage and improve water conveyance through the Bay-Delta system are behind, and the water use efficiency, water quality, watersheds, levee integrity, and science programs are underfunded.

The CALFED Program's commitment to a balanced and integrated approach is what sets this effort apart from any other large-scale restoration or water management program in the nation. It is what keeps diverse stakeholders engaged in the process; it is also what makes it so challenging at times to move ahead.

As we look forward to the year ahead, the CALFED agencies will seek to build upon the collaborative efforts that are well under way, and secure balanced funding from our state, federal, and local partners.

Patrick Wright
Director, CALFED Bay-Delta Program

CALFED BAY-DELTA PROGRAM ACCOMPLISHMENTS

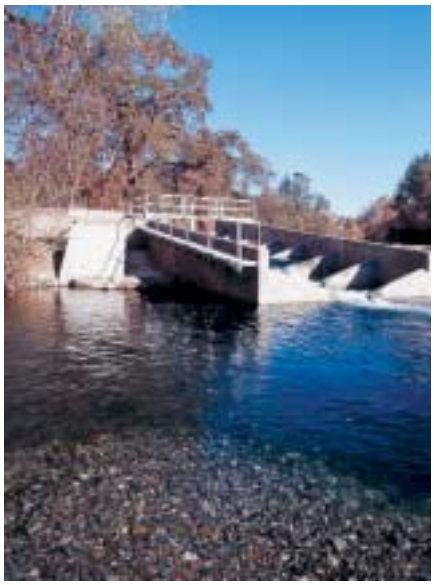
Six years after the signing of the Bay-Delta Accord and subsequent planning and public input, the Bay-Delta Program has met its first year implementation goals and objectives. Major Program accomplishments are listed below for Year 1, grouped by the four program objectives, science and overall program management:

WATER SUPPLY RELIABILITY

- Allocated approximately $200 million from Proposition 13 and other sources to local agencies for water supply, water quality and water use efficiency projects throughout the state
- Initiated or continued planning studies of 5 surface storage projects: Shasta enlargement; Sites Reservoir; In-Delta Storage; Los Vaqueros Expansion; and Upper San Joaquin Storage. Completed Memoranda of Understanding (MOU) with local partners for Sites Reservoir and Los Vaqueros Expansion planning studies
- Completed 16 Memoranda of Understanding or Letters of Intent with 30 local agencies throughout the state to study groundwater storage improvements
- Supported the Governor's Advisory Drought Planning Panel in developing a *Critical Water Shortage Contingency Plan*. Implemented state and federal dry year programs that provided nearly 300,000 acre-feet to areas suffering from water shortages
- Developed and implemented a comprehensive operations plan to coordinate actions and improve water supply reliability

ECOSYSTEM RESTORATION AND WATERSHEDS

- Since 1995, CALFED agencies and stakeholders have funded 326 ecosystem projects for $336 million including projects funded through the Anadromous Fish Restoration Program of the CVPIA. In 2001, $195 million was spent on activities including ecosystem water quality, ecosystem science, strategy planning, and 74 individual ecosystem restoration projects selected through a public solicitation process. Specific highlights include:
  - Began fish passage improvements along 182 river miles
  - Installed 64 fish screens at critical diversion points
  - Conducted 23 studies at $26.5 million for various effects on the Bay-Delta system
- Continued integration of the “single blueprint” for better coordination of ecosystem restoration activities between state and federal agencies
- Funded over 50 locally based watershed projects for $19 million, as well as provided funds in coordination with the Ecosystem Restoration Program to support projects in more than 50 watersheds
- Launched an innovative Environment Water Account that made available 287,000 acre-feet of water in the last year for fish without reducing allocations to farms and cities


Butte Creek Fish Passage

WATER QUALITY

- Developed grant programs for local agencies to address drinking water quality and watershed protection projects throughout the state
- Implemented seven projects in 2001 totaling $26 million for drinking water quality including salinity/selenium treatment and blending and exchanging source waters
- Developed solicitation and selection process for an additional $10 million in drinking water quality projects
- Implemented an ecosystem water quality project in 2001 in the Stockton Deep Water Ship Channel

LEVEE SYSTEM INTEGRITY

- Awarded more than $18 million in year 1 to improve levees on 50 Delta islands while $14.6 million was invested in special projects like ecosystem and levee restoration for water quality and flood protection

SCIENCE

- Conducted $2.5 million in Delta Cross Channel studies to evaluate fishery, water quality and water supply reliability issues
- Hosted the first CALFED Science Conference to engage the scientific community and the public and co-sponsored and participated in the October '01 State of the Estuary Conference
- Convened expert panel and conducted first annual review for the Environmental Water Account, as well as several scientific workshops and program reviews
- Supported and integrated the activities of the independent ecosystem science board, interagency ecological program, EWA science advisors and other independent peer review efforts
- Led the effort to develop an interagency Science Consortium to support common efforts to investigate and share information

PROGRAM MANAGEMENT

- Convened four public workshops throughout the state on Environmental Justice issues in an effort to identify any adverse impacts the Program may have on disadvantaged communities
- Developed new partnership with the Governor's Office for Innovation in Government to address streamlining traditional government business practices
- Established the Bay-Delta Public Advisory Committee, a new 28-member citizens group to advise state and federal agencies on Program implementation

2000-2001 CALFED WATER SUPPLY RELIABILITY HIGHLIGHTS

STRATEGY HIGHLIGHTS

Groundwater Grants & Loans
$23.5 million for 53 projects
(Prop. 13, Chapter 8 Article 4 and Chapter 9 Article 2 , and AB 303)

Groundwater MOUs
16 agreements with counties and local water management agencies

Water Use Efficiency Grants & Loans
$13.4 million for 66 projects

Interim Water Supply Grants
$72 million
(Prop. 13, Chapter 9 Article 4 includes groundwater, water use effciency and conveyance projects)

An on-line water market information and resource for water users

1. *Shasta Storage Evaluations*
2. *Sites Storage Memorandum of Understanding (MOU)*
3. *Delta Storage & Conveyance Evaluations*
4. *Environmental Water Account provided 287,000 acre-feet in transfers for fish without reducing allocations to farms and cities*
5. *Los Vaqueros Expansion Memorandum of Understanding*
6. *• Upper San Joaquin River Storage Evaluations*
   • MWDSC - Friant Water Quality Exchange Partnership
7. *LA urban runoff/groundwater study augmentation*
8. *State and federal dry year programs provided 298,000 acre-feet to water short areas*

New Construction Development

WATER SUPPLY RELIABILITY

PURPOSE

- Water Supply Reliability encompasses an array of projects and approaches to expand water supplies and ensure efficient use of the resource

GOALS

- Working with local and regional agencies, the Program has identified actions that could increase California water supplies by nearly 3 million acre-feet over the next 10 years—enough water to meet the needs of 6 million families annually

ACCOMPLISHMENTS

The CALFED Program made significant progress in the first year to improve California's water supply reliability by providing grants and loans totaling about $200 million which will improve statewide operational flexibility and increase water supply reliability and improve water quality

- **Storage**
  - Initiated or continued planning studies of 5 surface storage projects: Shasta enlargement; Sites Reservoir; In-Delta Storage; Los Vaqueros Expansion and Upper San Joaquin Storage. Completed Memoranda of Understanding with local partners for Sites Reservoir and Los Vaqueros Expansion planning studies
  - Completed 16 Memoranda of Understanding or Letters of Intent with 30 local agencies throughout the state to study groundwater storage improvements
  - Allocated $74 million in loans and grants to local agencies for planning and implementation of groundwater storage improvements
- **Conveyance**
  - Continued design of the Tracy Fish Test Facility to provide critical data on the effectiveness of screening state and federal water project facilities in the South Delta
  - Continued planning and design of permanent fish barriers to Clifton Court Forebay operable tidal and fish barriers in an effort to increase periodic pumping to 10,300 cubic feet per second
- **Transfers**
  - Provided public information and disclosure throughout the year for the "ON TAP" web site, an on-line water market information resource for water users
  - Oversaw development of a standardized method to establish transferable water
  - Continued meetings of interested stakeholders to address and resolve water transfer issues and explore changes to existing law
- **Water Use Efficiency**
  - Awarded $13.3 million for 65 projects—including 37 urban and 28 agricultural
  - Moving forward in defining "appropriate measurement" of water usage and certification of urban Best Management Practices
  - Continued refinement of quantifiable objectives regarding oversight and coordination for agricultural water use

ECOSYSTEM RESTORATION AND WATERSHED MANAGEMENT HIGHLIGHTS

ECOSYSTEM RESTORATION & WATERSHED HIGHLIGHTS

Ecosystem Restoration Grants to date
326 Projects for $336 million

- '97 Approved Projects
- '98 Approved Projects
- '99 Approved Projects
- '00 Approved Projects
- '01 Approved Projects

Watershed Management Grants
Over 50 projects approx. $19 million

- '01 Approved Projects

1. *Butte Creek*
2. *Battle Creek*
3. *Clear Creek*
4. *Sacramento River Conservation Area*
5. *Cosumnes River*
6. *Yolo Bypass*
7. *Tuolumne River*
8. *San Joaquin River*

Spring-Run Chinook Salmon in Butte Creek

ECOSYSTEM RESTORATION AND WATERSHED MANAGEMENT

PURPOSE

- Improving the health of the Bay-Delta system through restoring and protecting habitats and native species

GOALS

- **Ecosystem Restoration**
  - Recover at-risk species, rehabilitate natural hydrology processes to enhance ecosystem water quality, protect and restore functional habitats, reduce negative impacts of non-native species, and improve and maintain water sediment quality for a healthier ecosystem
- **Watershed Management**
  - Increase integration and collaboration of watershed programs with local leadership and continue to better coordinate local, state and federal watershed programs in order to achieve CALFED Program objectives

ACCOMPLISHMENTS

- **Ecosystem Restoration –** Since 1996, CALFED agencies have funded 326 ecosystem projects for $336 million including projects funded through the Anadromous Fish Restoration Program of the CVPIA. Of these projects, 74 were funded in 2001 for $115 million. Specific highlights include:
  - Began fish passage improvements along 182 river miles
  - Installed 64 fish screens at critical diversion points
  - Conducted 23 studies at $26.5 million for various effects on the Bay-Delta system
- **Watershed Management**
  - Funded over 50 locally based watershed projects for $19 million, as well as providing funds in coordination with the Ecosystem Restoration Program to support projects in more than 50 watersheds
  - Formed Interagency Watershed Advisory Team to provide assistance to local watershed groups

2000-2001 CALFED WATER QUALITY HIGHLIGHTS

ECOSYSTEM WATER SUPPLY GRANTS

Ecosystem Water Quality Grants
1 Project for $7 million

8. *Stockton Dissolved Oxygen Investigations*

DRINKING WATER QUALITY GRANTS

Drinking Water Quality Grants
7 Projects for $26 million

1. *Facilitate Water Quality Exchanges for So Cal*
2. *Desalination Research and Innovation Partnership (MWD)*
3. *Bay Area Blending/ Exchange*
4. *Veale-Byron Ag Drainage Reduction*
5. *Bay-Delta Evaluation of Water Quality*
6. *Real-Time Water Quality Monitoring*
7. *Salinity and Selenium Removal for Ag Drainage*

Water Treatment Plant

WATER QUALITY

PURPOSE

- Improve water quality from source to tap for the 22 million Californians whose drinking water supplies come from the Bay-Delta watershed

GOALS

- Collaborate and fund projects that seek to improve the quality of water at its source, seek advancements in treatment technology, research and perform monitoring of the Bay-Delta drinking water quality, continue to look for ways to better manage and deliver water

ACCOMPLISHMENTS

- Implemented seven projects in 2001 totaling $26 million for drinking water quality including salinity/selenium treatment and blending and exchanging source waters
- Developed solicitation and selection process for an additional $10 million in drinking water quality projects
- Worked with science program to facilitate studies and identify sources and solutions of low dissolved oxygen concentrations that hinder upstream migration of certain fish species and violate water quality standards in the Stockton Deep Water Ship Channel
- Implemented one project in 2001 to address ecosystem water quality in the Stockton Deep Water Ship Channel

2000-2001 CALFED DELTA LEVEE SYSTEM INTEGRITY

HIGHLIGHTS

- **CALFED Delta Levee Projects**

1. *McCormack-Williamson Tract (Reclamation District 2110)*
2. *Twitchell Island Levee Setback/Habitat Creation (Reclamation District 1601)*
3. *Decker Island Project*
4. *Franks Tract Channel Islands*

Widespread Flooding

LEVEE SYSTEM INTEGRITY

PURPOSE

- Improving Bay-Delta levees will provide flood protection, ecosystem benefits and protect water supplies needed for the environment, agriculture and urban users by reducing the threat of levee failure and seawater intrusion while lessening levee failures, damage to property and requests for emergency funds

GOALS

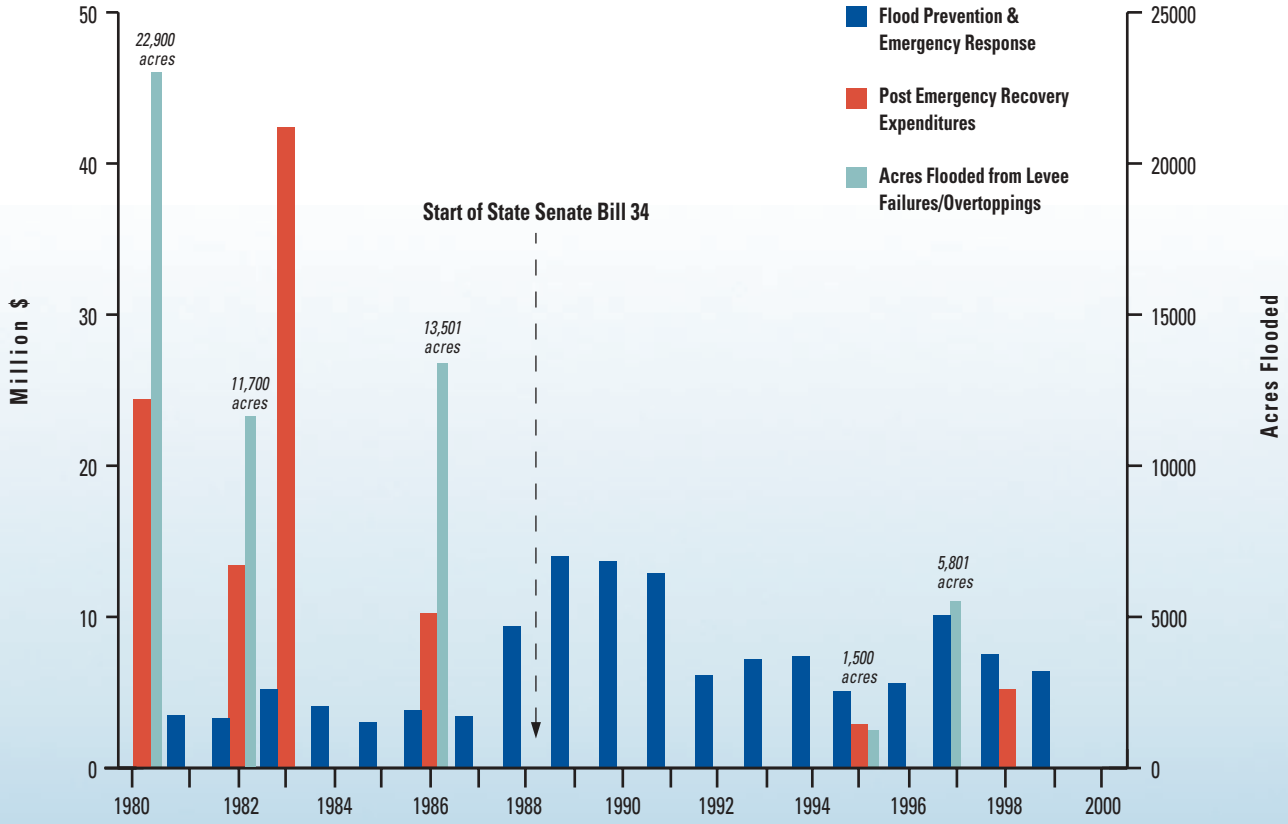
- Balance the need to improve levees to a higher standard for greater protection and fewer emergency responses, while maintaining habitat needs
- Develop adequate and reliable funding, as well as improve the permit process to increase levee stability in the Bay-Delta system

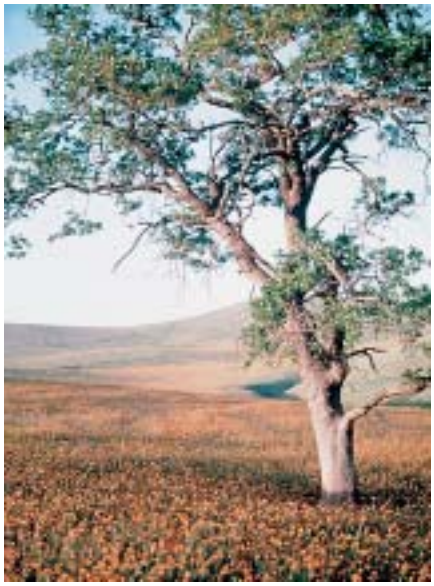
ACCOMPLISHMENTS

- Awarded more than $18 million in Year 1 to improve levees on 50 Delta islands while $14.6 million was invested in special projects like ecosystem and levee restoration for water quality and flood protection
- Efforts thus far to improve Delta levees have led to better water quality protection, enhanced habitat conditions, fewer requests for emergency funds and less acres of land flooded

DELTA LEVEE FLOOD COSTS

POST DISASTER ASSISTANCE COSTS AND ACRES FLOODED





SUMMARY OF PROGRESS AND BALANCE

As this year's report indicates, the CALFED Bay-Delta Program has made significant progress during its first year of implementation. State and federal CALFED agencies have secured and allocated more than $500 million in its first year, primarily from state bond funds. Key programs, such as ecosystem restoration, groundwater storage and recycling are meeting or exceeding their funding and program commitments. Milestones have been achieved in many key program areas, and tangible results of some projects already can be seen.

The following is a brief description of the status of each program element:

- **Storage**. Efforts to improve the use of groundwater storage are ahead of schedule, with $74 million provided to local agencies this year for planning and implementation of groundwater projects. The CALFED agencies signed agreements with local partners for Sites Reservoir and Los Vaqueros Expansion planning studies. Evaluation of a potential new off-stream storage reservoir at Sites and exploration of an In-Delta storage facility have missed some interim milestones, but increased funding in future years would allow planning studies for these projects to be completed on schedule. Studies of the expansion of Los Vaqueros Reservoir and Shasta Reservoir have also missed interim milestones due to lack of funding.
- **Conveyance**. Planning and design for installation of permanent fish barriers and other modifications in the Clifton Court Forebay are on track, and plans to increase periodic pumping are still on schedule. Although construction of the Tracy Fish Test Facility was delayed by six months due to the lack of funds, the project is back on course and expects to remain on schedule. However, the lack of funding has delayed a planned intertie between the State Water Project and the Central Valley Project near Tracy and the San Joaquin Flood Control Project.
- **Transfers**. The program is on track. Year 2 of implementation will focus on coordinating and streamlining the water transfer process and establishing the Water Transfer Information Clearinghouse.
- **Water Use Efficiency**. Efforts to define "appropriate measurement" of water usage, certify urban Best Management Practices and refine quantifiable objectives for water use efficiency are proceeding on schedule. More than $13 million in grants and loans was awarded for 65 projects in 2001, but participation in the loan program has been less than expected.
- **Ecosystem Restoration**. The program is on track, with over $150 million allocated in year 1 primarily from state and local funds as part of the "Single Blueprint" for ecosystem restoration and regulatory commitments. This is in addition to approximately $270 million of early implementation projects financed by the federal Bay-Delta Act and Category 3 funds in the prior years.
- **Environmental Water Account**. The EWA provided 287,000 acre-feet of water for environmental purposes during its first year of operation for Endangered Species Act purposes without reducing allocations to farmers and cities while meeting the commitments provided under the biological opinions (ESA) not to reduce water. The EWA expects to have Tier 3 water available for unforeseen emergencies in Year 2.

- **Watershed Management**. Progress has been made on outreach and technical assistance to local communities, with more than $18 million awarded this year to 54 grant recipients for watershed projects.
- **Drinking Water Quality**. Five early implementation projects—Bay Area Blending/Exchange, Veale-Byron Tract, Real-Time Water Quality Monitoring, Salinity/Selenium, and Delta Contaminant Sources/Load—are moving forward. About $20 million in grant funding is expected to be awarded for water quality projects in spring 2002.
- **Levees**. More than $18 million was awarded in Year 1 for levee maintenance on 50 Delta islands, while $14.6 million was invested in special projects for ecosystem, and levee restoration, water quality, flood protection and beneficial reuse and emergency response/preparedness. Although levee maintenance funding was available, the program is not funded at a level that allows progress toward Delta levee restoration. Efforts to improve all Delta levees to a base level of protection (Public Law 84-99 standard) are behind schedule, as are a planned Delta levee risk assessment and risk management plan, the Suisun Marsh levee program, and the dredge material reuse plan.
- **Science**. The Science Program conducted peer review for large projects and the EWA, conducted scientific workshops, provided oversight for the Delta Cross Channel investigations, and developed a framework for performance measures.
- **Program Oversight and Coordination**. This program element initially received adequate funding, but the state's hiring freeze and other general fund reductions will require the Program's oversight and coordination activities to be scaled back significantly. These activities include: regional coordination and implementation, environmental justice and other public outreach efforts, legal and litigation support, budget coordination and integration, finance planning and program tracking.

YEAR 1 CONCLUSION

In its first full year of implementation, the CALFED Bay-Delta Program moved forward aggressively to carry out the goals and objectives of the August 2000 Record of Decision. While many Program actions are just getting under way, significant progress has been made in every program area, but particularly those supported by state bond funds, including Groundwater Storage, Environmental Water Account, Ecosystem Restoration and Conveyance, and by federal Title XVI funds for water recycling. The Surface Storage, Levee, Water Quality, Science and Watershed Management Programs also made substantial progress at reduced funding levels.

YEAR 2 AND BEYOND

In year 2 (fiscal year 2001-'02), the Governor and the Legislature have contributed $508 million in funding for the Program, of which $62.6 million is from the state's general fund. Congress has approved $30 million in funding in the Energy and Water Development appropriations to support the goals of the Bay-Delta Program. Although the state and federal appropriations signal continued involvement and support in the effort, a larger amount of funding is required to meet the commitments across all program areas. Progress in Year 2 also will be impacted by a $20 million general fund reduction in the state CALFED budget and the moratorium on state hiring. These constraints on the ability to secure adequate staff and financial resources will translate into further delays in some program elements.

WE ALL DEPEND ON THE BAY-DELTA

The Bay-Delta provides drinking water for 22 million people. It supports California's trillion-dollar economy, including its $27 billion agricultural industry, and local homes and infrastructure. It is the largest estuary on the west coast—home to 750 plant and animal species—and it supports 80 percent of the state's commercial salmon fisheries.

DEFINING THE BAY-DELTA CONFLICT

California's Bay-Delta is an ecosystem in trouble:

- Straining under dual roles as critical habitat and water project crossroads, the Bay-Delta is in decline from decades of competing demands
- Today, it no longer functions as a healthy ecosystem or as a reliable source of water
- Several species—including Chinook salmon and steelhead trout—are in decline or endangered
- Water supplies are increasingly unreliable, jeopardizing the world's sixth-largest economy and 5 million acres of highly productive agricultural lands
- Water quality is degraded, making it difficult and expensive to meet drinking water standards

RESOLVING THE CONFLICT

The CALFED Bay-Delta Program is a cooperative effort involving more than 20 state and federal agencies. The Program will be implemented in stages over the next 30 years to solve California's environmental and water problems.

IMPLEMENTATION PRIORITIES INCLUDE:

- Apply independent scientific review and adaptive management to all major activities with accurate and frequent reports to the public
- Conduct early and continuous agency, stakeholder and public involvement
- Maintain a balanced and integrated Program
- Support local and regionally based strategies to achieve the Program's goals
- Develop performance standards and milestones for each program element
- Meet milestones and commitments in the Bay-Delta Plan

AN UNPRECEDENTED SCOPE AND VISION

- Strong commitment to independent scientific review, planning and tracking

- A coordinated approach by more than 20 state and federal agencies

- Eleven major program elements supporting multiple objectives

- Extensive public and local involvement in shaping each program element

- Funded projects in multiple watersheds encompassing more than 40,000 square miles—more than 70 percent of California's land

CALFED BAY-DELTA PROGRAM TIMELINE

December 1994
Bay-Delta Accord

November 1996
Prop 204 Funds Approved by Voters

March 2000
Prop 13 Funds Approved by Voters

June 2000
Framework Announced

July 2000
Year 1 Funding
State $516.4 million
Federal $56.2 million
Other $221.6 million

July 2000
Programmatic Environmental Document Finalized (EIS/EIR)

August 2000
Science Program Established

August 2000
Record of Decision Signed; CALFED Program Implementation Begins

July 2001
Year 2 Funding Begins
State $508.0 million
Federal $81.4 million
Other $262.8 million

November 2004
Major Decision and Review Points for Storage, Water Quality and Water Use Efficiency Elements

Completion of Stage 1 – First Seven Years
Foundation for Long Term Program Direction Completed

The CALFED Bay-Delta Program is a comprehensive collaborative effort that will take 30 years or more to complete.

Anderson Cottonwood Irrigation District Fsh Passage Improvement Project

SHAPING THE SOLUTION THROUGH PARTNERSHIPS

Extensive and sustained levels of public involvement have shaped every aspect of the CALFED Bay-Delta Program.

Partnerships with local communities and groups are being forged to combine resources, share knowledge and resolve problems at the local, regional and state level.

Merced River Restoration Project:

"You redesign the river, you restore it to a more naturally functioning (state), and hopefully you need less water to make the system work the way it's supposed to—everybody wins."
—Chris Robinson, General Partner Robinson Cattle Company

Potential Sites Reservoir Project:

"Local needs are going to be met first, you're going to have input as to how this is going to happen. We have a chance now to say what it is we want, what it is we need, and I think we darn well better get out and do that."
—Mary Wells, Farmer Sites, California

Upper Yuba River Studies Program:

"...In (Nevada) county, we have seized the opportunity that CALFED gave us. They've given us a lot of support and put a lot of money into the collaborative decision-making process in our own backyard."
—Elizabeth Martin, Nevada County Board of Supervisors Chairwoman

ACTIVITIES THAT SUPPORT PARTNERSHIPS

- Scoping Meetings
- Technical Workshops
- The Newly Formed Bay-Delta Public Advisory Committee and Related Work Group Meetings
- Media Events
- Annual Reports
- Newsletters
- Coordinating with Local Groups
- Environmental Justice
- Brochures
- Briefing Materials
- Comprehensive Web Site http://calfed.ca.gov
- Toll-free Public Information Telephone Line (800) 700-5752
- Presentations
- Technical Documents
- Tribal Participation
- Science Consortium

June 2001 Policy Group Meeting

Environmental Justice Workshop in Richmond

Delta Cross Channel News Coverage

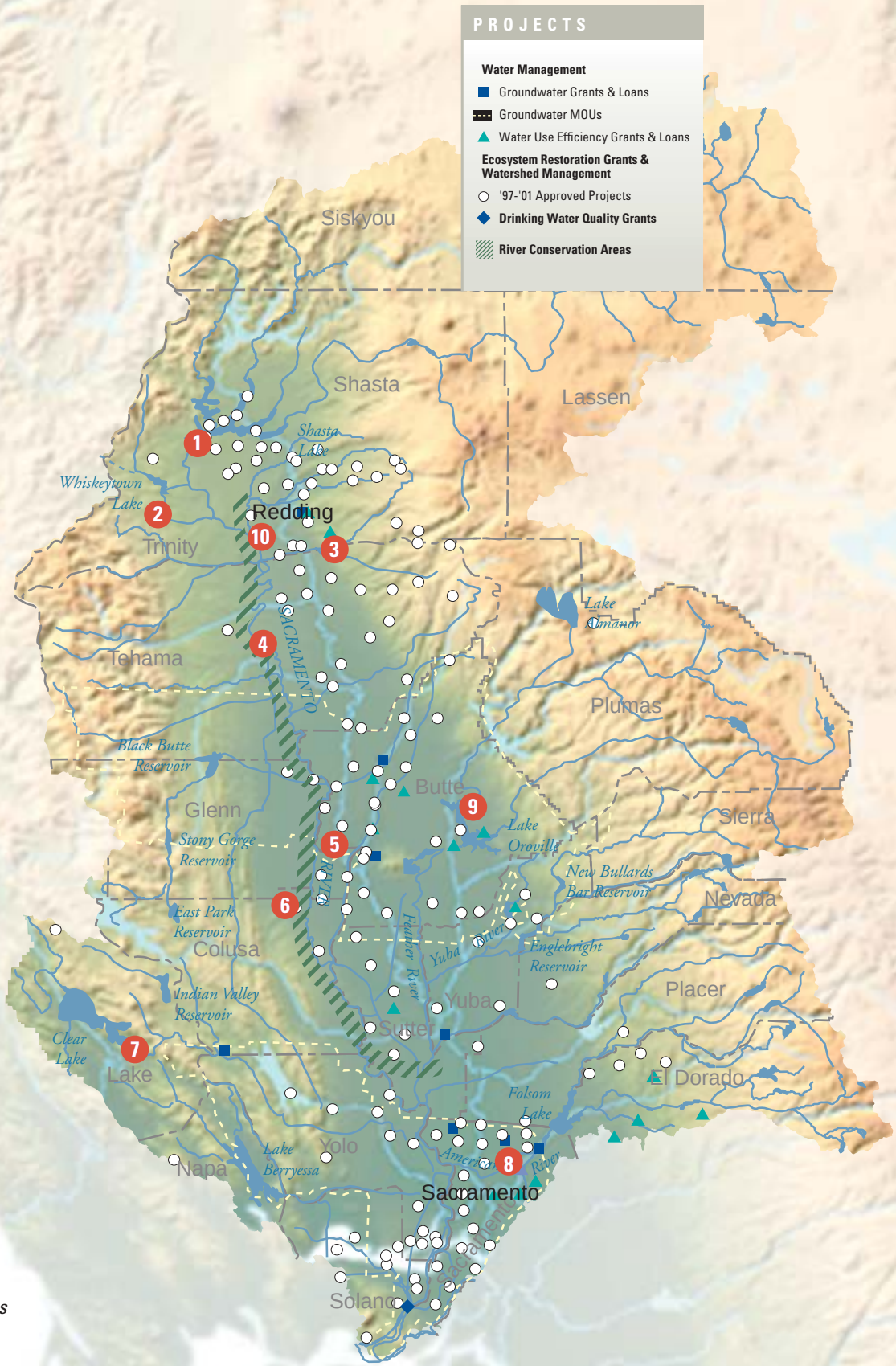
REGIONAL VIEW

The CALFED Agencies are investing in collaborative regional projects that provide local benefits while helping achieve overall Program objectives and commitments.

THE CALFED BAY-DELTA REGIONS

- The Sacramento Valley Region
- The Delta Region
- The Bay Region
- The San Joaquin Valley Region
- The Southern California Region

The Regional View provides information on regional CALFED Program highlights and accomplishments. Locally based projects have been funded through individual and collaborative resources by the CALFED agencies and stakeholders.



HIGHLIGHTS:

1. *Evaluate Enlargement of Shasta Dam*
2. *Saeltzer Dam Removal on Clear Creek*
3. *Battle Creek Fish Passage & Dam Removal*
4. *Improve Red Bluff Diversion Facilities*
5. *Sacramento River Conservation Area* (Continuous riparian corridor along 222 miles of the Sacramento River between Keswick and Verona)
6. *Sites Reservoir Memorandum of Understanding and Studies*
7. *Mercury Assessment—Clear Lake & Cache Creek*
8. *Lower American River Corridor Management Plan*
9. *Butte Creek Fish Passage and Dam Removal*
10. *Anderson-Cottonwood Irrigation District Fish Screens and Ladders*

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Participated in an agreement with local partners to study the 1.8 million acre-foot Sites Reservoir off-stream storage project
- Funded over 120 ecosystem restoration efforts to date, including 47 projects to improve fish passage on rivers and streams. A small dam that blocked salmon passage on Clear Creek was removed, and CALFED agencies provided more than $10 million for a state-of-the-art fish screen and ladder project for the Anderson-Cottonwood Irrigation District
- Dedicated more than $2 million for nine water use efficiency grants to help farmers irrigate more effectively and conserve water
- Signed agreements with six local water agencies to study groundwater storage improvements
- Funded over 10 groundwater loans and grants for recharge construction and storage pilot projects
- Worked with local stakeholders to determine feasibility of introducing Chinook salmon and Steelhead to the Upper Yuba River
- Began to assemble and interpret salmon data for individual tributaries and the Sacramento mainstem with the goal of relating trends in threatened groups to restoration actions

THE SACRAMENTO VALLEY REGION:

- Provides 60 percent, or 22 million acre-feet of the water flowing into the Delta
- Offers major habitat/spawning ground for several threatened and endangered fish species
- Contributes significantly to the state's farmlands and agricultural output

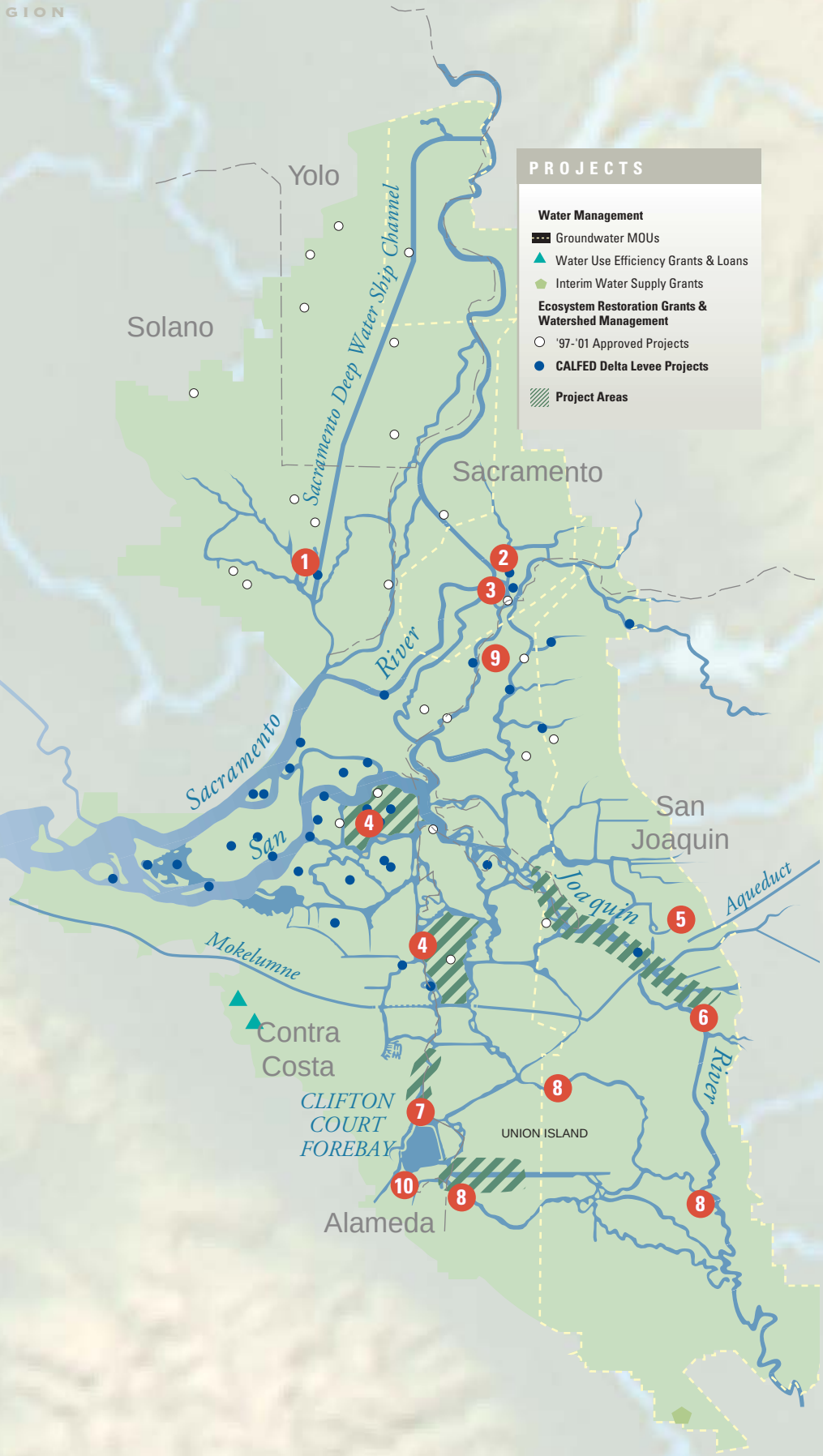
Red Bluff Diversion Dam

ACID Fish Screening and Ladders

YEAR 1 FUNDING
43 projects
$12,587,729.00

REGIONAL VIEW

THE DELTA REGION



HIGHLIGHTS:

1. *Yolo Bypass Habitat Restoration*
2. *McCormack Williamson Tract Habitat Restoration*
3. *Delta Cross Channel and Through Delta Facility Operational Studies*
4. *In Delta Storage (Potential) "Delta Wetlands Project"*
5. *Sub-Surface Drip Irrigation on Asparagus*
6. *Stockton Deep Water Dissolved Oxygen Investigation*
7. *Clifton Court Intake and Fish Screens*
8. *Fish & Flow Control Structures (Temporary / Permanent) & Dredging*
9. *Staten Island Restoration*
10. *Tracy Fish Test Facility*

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Invested $18 million to improve Delta levees on over 50 Delta islands resulting in better water-quality and flood protection and greatly enhanced habitat conditions
- Funded over 70 ecosystem restoration projects to date, including in-channel island restoration, fish screens, and riparian habitat restoration
- Funded seven watershed projects including flood protection, creek restoration strategies and stewardship
- Planned for construction of the Tracy Fish Test Facility to provide data on the effectiveness of screening facilities in the South Delta
- Worked on the South Delta Improvement Program to install permanent fish and flow control structures and modify Clifton Court Forebay to eventually increase periodic pumping to 10,300 cubic feet per second
- Began environmental documentation for North Delta Flood Protection improvements
- Explored options for addressing drainage problems in the Delta
- Continued work on the Delta Dredge and Reuse Strategy
- Continued work on developing practical ways to slow, stop, and reverse island subsidence
- Successfully implemented and reviewed an Environmental Water Account, designed to manage water operations so that they both improve water supply reliability and protect targeted fish species
- Initiated several studies:
  - Feasibility of a through-Delta diversion facility to the Sacramento River
  - Feasibility of alternatives for In-Delta storage
  - Operational studies to address fishery and water quality impacts
  - Approval to begin dissolved oxygen studies in the Stockton Deep Water Ship Channel
  - Sources and concentrations of contaminants in the Bay-Delta water
  - Evaluate factors influencing outcomes and impediments in restoring breached islands in the Delta
  - Identify mercury distributions and contamination patterns in the Delta

THE DELTA REGION:

- Up to 47 percent of the Delta's flow is diverted in dry years from the Delta for beneficial uses
- Supports 750 plant and animal species including 120 fish species
- Diversion point for irrigation water to California's $27 billion agricultural industry
- Contains the largest wetland habitat in the western United States

Delta Cross Channel

Tracy Fish Facility

YEAR 1 FUNDING
19 projects
5,916,272.00

REGIONAL VIEW

THE BAY REGION

HIGHLIGHTS:

1. Petaluma Marsh Expansion
2. Napa River Floodplain Restoration Project
3. Cullinan Ranch Project
4. Suisun Marsh Management and Restoration
5. Suisun Marsh Fish Screens
6. Los Vaqueros Expansion
7. Guadalupe River Restoration
8. San Pablo Baylands
9. Bay Area Blending/Exchange

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Completed a Memorandum of Understanding with local partners and initiated studies to evaluate the expansion of Los Vaqueros Reservoir
- Began studies on the feasibility of a San Luis Reservoir bypass to improve the quality of water imported to the Bay Area from the state and federal water projects
- Signed a Memorandum of Understanding and started feasibility studies for the Bay Area Blending and Exchange Study aimed at improving water quality by blending and exchanging source waters among local providers
- Hosted the first CALFED Bay-Delta Program Science Conference to engage the scientific community and the public. Co-sponsored and participated in the October 2001 State of the Estuary Conference
- Contributed to funding 40 ecosystem restoration projects to date, including Napa River floodplain restoration, fish screens in Suisun Marsh and improvements to the Petaluma Marsh
- Allocated nearly $2.5 million to provide rebates to Bay Area households that install ultra low-flow toilets
- Funded over five groundwater loans and grants for recharge construction and storage pilot projects
- Reviewed and supported plans for establishing a coordinated wetlands monitoring program in the Delta
- Reviewed and recommended future directions for the Bay Program of the Interagency Ecological Program, a premier aquatic monitoring program in the Bay
- Reviewed and began revision and multi-agency coordination of water quality monitoring conducted by the Interagency Ecological Program
- U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, Department of Fish and Game, Department of Water Resources and Suisun Resource Conservation District established a charter to begin work on a single blueprint for ecosystem restoration of Suisun Marsh

THE BAY REGION:

- The Bay and Delta form the west coast's largest estuary
- Drains more than 40 percent of the state's water
- Is America's fourth largest metropolitan area and location of Silicon Valley

Suisun Marsh

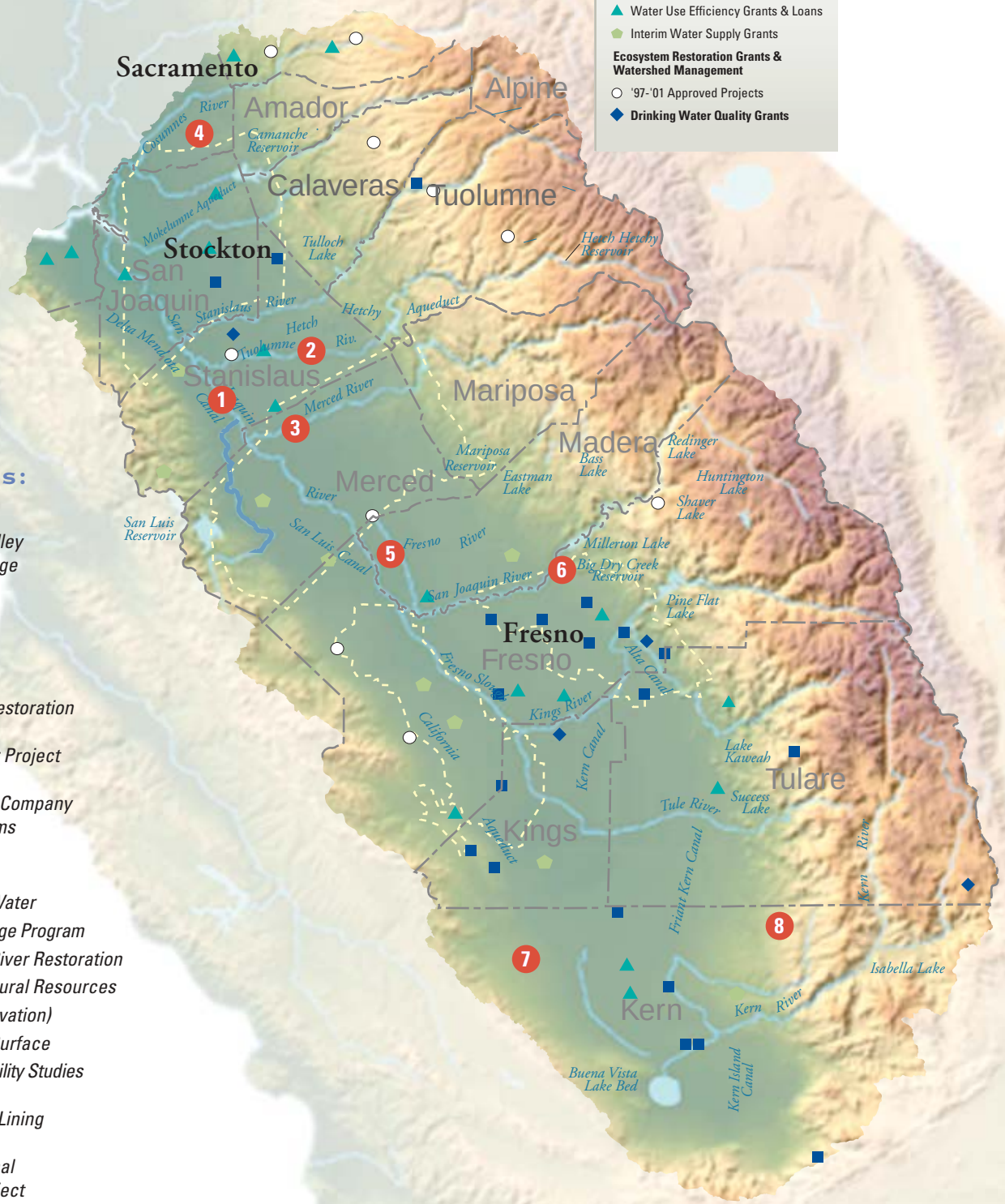
Los Vaqueros Reservoir

Recharge Pond

YEAR 1 FUNDING
17 projects
$5,916,354.00

REGIONAL VIEW

THE SAN JOAQUIN VALLEY REGION



HIGHLIGHTS:

1. San Joaquin Valley Regional Drainage Management
2. Tuolumne River Restoration
3. Merced River Restoration
4. Cosumnes River Project
5. Columbia Canal Company Irrigation Systems Improvement
6. • Friant-MWD Water Quality Exchange Program
   • San Joaquin River Restoration (Friant and Natural Resources District Conservation)
   • San Joaquin Surface Storage Feasibility Studies
7. Lost Hills Canal Lining
8. Kern-Tulare Canal Automation Project

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Funded 51 ecosystem restoration projects, including improving riparian and stream habitats on the San Joaquin, Merced, Tuolumne and Stanislaus rivers
- Approved $3.4 million in funding for 11 water use efficiency projects to help farmers save water
- Began feasibility studies for the lower San Joaquin River flood protection improvements
- Launched the Salinity and Selenium Project to build a pilot plant to treat agricultural drainage and produce water for reuse
- Signed agreements with four local water agencies to study groundwater-storage improvements
- Explored water quality exchange partnership between Friant Water Users Association and Metropolitan Water District
- Funded over 10 groundwater loans and grants for recharge construction and storage pilot projects
- Began evaluation of selenium effects from San Joaquin River discharges to the Delta
- Implemented state and federal dry year programs to provide over 200,000 acre-feet to water short areas

THE SAN JOAQUIN VALLEY:

- Produces 45 percent of the nation's fruits and vegetables
- Is the drainage for seven major Sierra Nevada rivers draining into it
- Anticipates population to double over the next 20 years

Water Use Efficiency for Irrigation

Merced River Restoration

Agriculture Production

YEAR 1 FUNDING
39 projects
$24,423,489.00

REGIONAL VIEW

THE SOUTHERN CALIFORNIA REGION

PROJECTS

Water Management

- Groundwater Grants & Loans
- Groundwater MOUs
- Water Use Efficiency Grants & Loans
- Interim Water Supply Grants

Watershed Management

- Approved Projects

HIGHLIGHTS:

1. *Water Conservation Recycling and Groundwater Desalination in San Diego*

2. *Conservation Rebate Programs*
   - *Commerical*
   - *Industrial*
   - *Institutional*

3. *Landscape Water Consumption Controller*

4. *Chino Basin Water Use Efficiency*

5. *Storm Water Augmentation Study*

6. *Wetland Restoration on the Santa Ana River*

7. *Desalination Research and Innovation Partnership (DRIP)*

8. *Water Quality Exchange Partnership with Friant Water District (MWD/Friant)*

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Signed agreements with five local water agencies to study ways to improve groundwater storage
- Provided nearly $1.9 million for 14 water use efficiency programs in urban areas
- Began a desalination research and innovation partnership at Metropolitan Water District resulting in three desalting facilities and final design plans for three more
- Funded over 20 groundwater loans and grants for recharge construction and storage pilot projects
- Funded restoration of wetlands and river systems to protect endangered and threatened fish in Southern California, reducing the demand for water from the Bay-Delta ecosystem
- Implemented state and federal dry year programs to provide approximately 80,000 acre-feet to water short areas

BENEFITS FLOW SOUTH AND NORTH

Implementation of CALFED's projects in the Southern California Region will:

- Produce more reliable, higher-quality water statewide
- Reduce the need for additional water from the Bay-Delta to meet the growing needs of the region
- Enhance ecosystem restoration in the Bay-Delta and in the region
- Expand groundwater storage and pumping capability
- Use water efficiently through conservation, recycling and water management

SOUTHERN CALIFORNIA REGION:

- Inland Southern California is among the fastest growing regions in North America
- Southland water users conserve 480,000 acre-feet of water a year and produce 230,000 acre-feet of recycled water—reducing the demand for additional Bay-Delta water and meeting the needs of a growing population
- Southern California's large contribution to the state's economy depends on a more reliable water supply, some of which is imported from the Delta

High Efficiency Clothes Washer Program

Santa Ana River in Riverside,
Arundo and Wetlands Improvement

YEAR 1 FUNDING
36 projects
$20,973,705.00

A BALANCED APPROACH

Launched in the summer of 2000 with broad public support, the CALFED Bay-Delta Program Record of Decision is a balanced, comprehensive approach to reduce conflicts over limited water supplies and to address California's long-term water needs.

The Bay-Delta Program is unique in its approach to solving California's environmental and water problems. The Bay-Delta solutions address four interrelated, interdependent program areas concurrently.

RESOURCE MANAGEMENT GOALS

Four resource management goals are implemented through 11 major program elements.

PROGRAM ELEMENTS

- Science
- Water Management
- Storage
- Conveyance
- Water Use Efficiency
- Water Transfers
- Ecosystem Restoration
- Environmental Water Account
- Watershed Management
- Drinking Water Quality
- Levee System Integrity

Fish are Dyed for Delta Cross Channel Studies

CALFED SCIENCE PROGRAM

Integrating world-class science and peer review into every aspect of the Bay-Delta Program, CALFED is developing the best scientific information possible to guide decisions and evaluate actions that are critical to its success.

GOALS

- To establish a body of knowledge that is unbiased, relevant, authoritative and integrated, while communicating that knowledge to the scientific community, agency managers, stakeholders and the public
- Establish protocols and incorporate independent peer review into all Program activities
- Develop science-based performance measures for each CALFED program

ACCOMPLISHMENTS

- Developed directed research processes to identify and provide independent peer review of CALFED research needs
- Developed plans for each program element in order to incorporate peer review into activities
- Initiated and compiled performance measures within and across individual programs
- Hosted the first CALFED Science Conference to engage the scientific community and the public and co-sponsored and participated in the October '01 State of the Estuary Conference
- Funded The Estuary Newsletter's publication of a Delta Cross Channel fact sheet
- Convened expert panel and conducted first annual review for the Environmental Water Account, as well as several scientific workshops and program reviews
- Supported and integrated the activities of the independent ecosystem science board, interagency ecological program, EWA science advisors and other independent peer review efforts
- Completed or solicited for several monitoring plans to identify existing needs
- Began applying adaptive management within the program
- Published two reviews of ecosystem restoration indicators
- Led the effort to develop an interagency Science Consortium to support common efforts to investigate and share information
- Continued operational studies to address fishery and water quality impacts of Delta Cross Channel (DCC)

Turlock Irrigation District Project Event

State of the Estuary Conference
Posterboard Session

PRIORITIES

- The Science Program's priorities include:
  - Conduct adaptive management experiments
  - Build population models for at-risk species
  - Establish integrated science programs in complicated field settings
  - Compare relative effectiveness of different restoration strategies
  - Understand intertwined implications of all CALFED actions
  - Advance the scientific basis of regulatory activities
  - Develop performance measures
  - Coordinate and extend existing monitoring
  - Increase relevant scientific analyses of existing data

Delta Cross Channel Studies

PROGRAM REVIEWS AND WORKSHOPS

The different goals of science must move forward together, integrated across the other program elements that spread across five regions with different needs.

ADAPTIVE MANAGEMENT

Interdisciplinary Knowledge of Critical Unknowns	Integrating Scientific Knowledge into Management	Monitoring	Broad Communication of Science Knowledge and Scientific Activities
PROGRAM REVIEWS ■ Mercury Program Review ■ Stockton Ship Channel Program Review ■ Delta Cross Channel Program Review ■ Upper Yuba Program ■ Environmental Water Account Annual Review	**WORKSHOPS** ■ Sacramento Splittail: Life History ■ EWA and Salmon ■ Common Data Management Strategy ■ Hydrodynamics and Salinity Response to Levee Breaches in Suisun Marsh ■ Large Scale Adaptive Management ■ EWA and Delta Smelt ■ Adaptive Management Concepts (ISB) ■ State of Estuary Conference ■ Instream Flow Modeling/Biological Links (Bay-Delta Modeling Forum)	**DEVELOP MONITORING PLAN** ■ Wetlands ■ Reviews of Ecosystem Restoration ■ Indicators ■ Aquatic Monitoring Plan ■ Terrestrial Amphibian Monitoring Plan ■ Performance Measure Protocol	**INVITED PRESENTATIONS** ■ State Water Association ■ Environmental Water Caucus ■ Bay Conservation and Development Commission ■ Department of Water Resources Environmental Specialists Conference ■ Technical Committee for Dredge Re-use ■ Educational Workshops on Watershed Restoration and on Monitoring ■ American Association for Advancement of Science: Organized "Science and Water Management in California" ■ California Division of the American Fisheries Society ■ Managing Rivers for Biodiversity ■ Annual IEP Workshop ■ State of Estuary Conference

Water Flow Measurements

WATER MANAGEMENT

Recognizing that no single strategy will resolve California's water and environmental problems, the CALFED Program encompasses an array of projects and approaches to expand water supplies and ensure efficient use of the resource.

Working with local and regional agencies, the Program has identified actions that could increase California water supplies by nearly 3 million acre-feet over the next 10 years—enough water to meet the needs of 6 million families annually.

GOALS

- Maximize use of available water supplies through conservation, water recycling and water quality improvements
- Increase the operational flexibility of water systems at the state, federal and local level through strategic improvements in conveyance and storage capacities
- Develop groundwater and surface water storage projects to boost flexibility and provide additional supplies for agricultural, urban and environmental use

ACCOMPLISHMENTS

- Allocated approximately $200 million from Proposition 13 and other sources to local agencies for water supply, water quality and water use efficiency projects throughout the state
- Initiated or continued planning studies of 5 surface storage projects: Shasta enlargement; Sites Reservoir; In-Delta Storage; Los Vaqueros Expansion and Upper San Joaquin Storage. Completed Memoranda of Understanding with local partners for Sites Reservoir and Los Vaqueros Expansion planning studies
- Completed 16 Memoranda of Understanding or Letters of Intent with 30 local agencies throughout the state to study groundwater storage improvements
- Supported the Governor's Advisory Drought Planning Panel in developing a *Critical Water Shortage Contingency Plan*. Implemented state and federal dry year programs that provided nearly 300,000 acre-feet to areas suffering from water shortages
- Developed and implemented a comprehensive operations plan to coordinate actions and improve water supply reliability

Shasta Lake and Dam

PUBLIC AND PEER REVIEW

- Overview in progress by stakeholders and review through the state's drought contingency plan and the Water Management Strategy Evaluation Framework

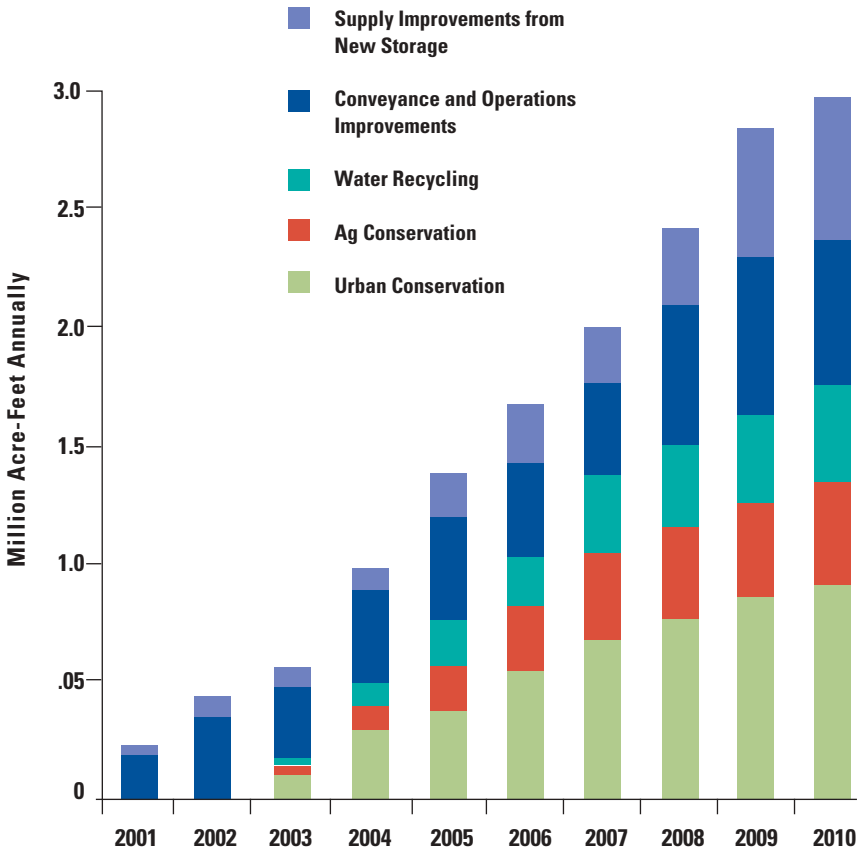
PERFORMANCE MEASURES

- Performance is tracked by overall increases in yield and the flexibility of California's water system through the four primary elements that contribute to the strategy: **storage**, **conveyance**, **water use efficiency**, and **water transfers.**

Water Reclamation

Urban Conservation

POTENTIAL IMPROVEMENTS IN WATER SUPPLY RELIABILITY



POTENTIAL IMPROVEMENTS IN WATER SUPPLY RELIABILITY

WATER MANAGEMENT ACTION

Water Use Efficiency (first 7 years)	**Acre-Feet/year**
Urban Conservation	520,000 to 690,000
Agricultural Conservation	260,000 to 350,000
Water Reclamation	255,000 to 310,000
Potential Increase from Water Use Efficiency	**Up to 1.4 Million Acre-Feet/year**
Conveyance and Operational Improvements	**Up to 600,000 Acre-Feet/year**
Includes: SWP Pumping of (b)(2) Upstream Releases, Export/Inflow Ratio Flexibility, Increased Banks Pumping Plant Capability, Joint Point of Diversion and San Luis Bypass	
Potential Increase from New Storage	**600,000 to 900,000 Acre-Feet/year***
Total Potential Increase in Water Supply Reliability from Water Use Efficiency, Conveyance and Operations Improvements and New Storage	**Up to 2.9 Million Acre-Feet/year**

POTENTIAL NEW STORAGE CAPACITY*

CALFED Storage Projects	**Acre-Feet**
Enlarge Shasta Lake	300,000
Enlarge Los Vaqueros Reservoir	400,000
In-Delta Storage	250,000
Sites Reservoir	1,800,000
Upper San Joaquin River Storage	250,000 to 700,000
Groundwater Storage and Conjuctive Use	500,000 to 1,000,000
Total Potential New Storage	**4.5 Million Acre-Feet**

Storage Capacity versus Water Supply Reliability

Total increase in storage capacity is not a direct measure of increased water supply reliability. The estimate of increased water supply reliability provided here is the quantity of water expected to be available annually from new storage during extended dry periods.

New storage capacity would also be used to provide improved flows and reduced effects of diversions for fish, improved water quality, and improved conjunctive management of surface and groundwater.

San Luis Reservoir

STORAGE

By pursuing more water storage capacity in both surface reservoirs and underground aquifers, CALFED seeks not only to meet the needs of California's growing population, but also to provide much-needed flexibility to improve water quality and restore ecosystems.

GOALS

- Provide financial and technical assistance to implement 1/2 million to one million acre-feet of new, locally managed groundwater storage
- Pursue specific opportunities for new off-stream storage sites and expansion of existing on-stream storage sites as identified in the Record of Decision

ACCOMPLISHMENTS

- Continued the Integrated Storage Investigations (ISI) to coordinate studies and evaluate the costs and benefits of specific storage projects in terms of water quality, water supply reliability and ecosystem restoration
- Completed an agreement with local partners to study the Sites Reservoir off-stream surface storage project and Los Vaqueros Reservoir expansion
- Continued study of Shasta Reservoir expansion
- Initiated feasibility study of alternatives for In-Delta storage
- Completed 16 Memoranda of Understanding or Letters of Intent with 30 local agencies throughout the state to study groundwater storage improvements
- Provided grants and loans to local agencies totaling $74 million to assist in planning and implementing groundwater projects. The projects will improve statewide operational flexibility and increase water supply reliability

PUBLIC AND PEER REVIEW

- Proposition 13 Groundwater Conjunctive Management Advisory Teams
- Public workshops, partnerships and stakeholder meetings

PERFORMANCE MEASURES

- Storage is part of the larger Water Management Strategy, and will increase the availability of water and improve the flexibility of the system. Performance measures for this program element may include new storage capacity implemented, changes in groundwater levels and groundwater overdraft status.

O'Neill Forebay

NEXT STEPS

- Develop North of the Delta feasibility analysis, project formulation and environmental documentation
- Determine how to pursue In-Delta storage options based on feasibility study results
- Begin Alternatives report for Los Vaqueros Expansion
- Undertake Enlargement feasibility study for Shasta Lake
- Negotiate Memorandum of Understanding and initiate planning study for Upper San Joaquin Storage
- Award $106 million under Proposition 13 and AB 303 for feasibility studies and pilot projects for Conjunctive Water Management
- Develop and implement projects for fish passage improvement

CALFED BAY-DELTA PROGRAM STORAGE SCHEDULE

Note: Schedules subject to change

POTENTIAL STORAGE OPTIONS

Storage is part of the larger water management strategy, and will increase the availability of water and improve the flexibility of the system.

POTENTIAL STORAGE PROJECTS

Shasta Enlargement
An increase in Shasta storage capacity by 300,000 acre-feet would increase the pool of cold water available to maintain lower Sacramento River temperatures for fish and improve water supply.

Sites Reservoir
This project, with a capacity of up to 1.9 million acre-feet, could enhance water management flexibility in the Sacramento Valley and provide storage and operational benefits for other CALFED programs including fisheries protection, Delta water quality, and the Environmental Water Account.

In Delta Storage
An In-Delta Storage facility of 250,000 acre-feet would provide both fishery benefits and enhanced water project flexibility.

Los Vaqueros Enlargement
Expanding Los Vaqueros reservoir from 100,000 acre-feet to 500,000 acre-feet would provide water quality and water supply reliability benefits to Bay Area water users. Storage in this location could also be integrated into the Environmental Water Account.

San Joaquin Storage
Additional storage between 250-700 thousand acre-feet in the upper San Joaquin River watershed would be designed to contribute to restoration of and improve water quality for the San Joaquin River and facilitate conjunctive water management and water exchanges that improve the quality of water.

Clifton Court Forebay

CONVEYANCE

Moving water through the Bay-Delta as efficiently as possible will increase the system's flexibility and boost ecosystem health, water quality and levee stability.

GOALS

- Modify the existing conveyance system for water supply, water quality, flood protection and ecosystem benefits
- Improve pumping operations of the State Water Project to increase reliability and enhance fish protection

ACCOMPLISHMENTS

- Maintain schedule for construction of the Tracy Fish Test Facility (TFTF) to provide data on the effectiveness of screening facilities in the South Delta
- Study plan for through-Delta diversion facility for Sacramento River
- Continue work on the South Delta Improvement Program (SDIP) to install permanent fish and flow control structures, and modify Clifton Court Forebay to eventually increase periodic pumping to 10,300 cubic feet per second
- Begin environmental documentation for North Delta Flood and Ecosystem Restoration Control improvements
- Begin feasibility studies for lower San Joaquin River flood protection improvement study
- Continue ongoing work on temporary barriers

PUBLIC AND PEER REVIEW

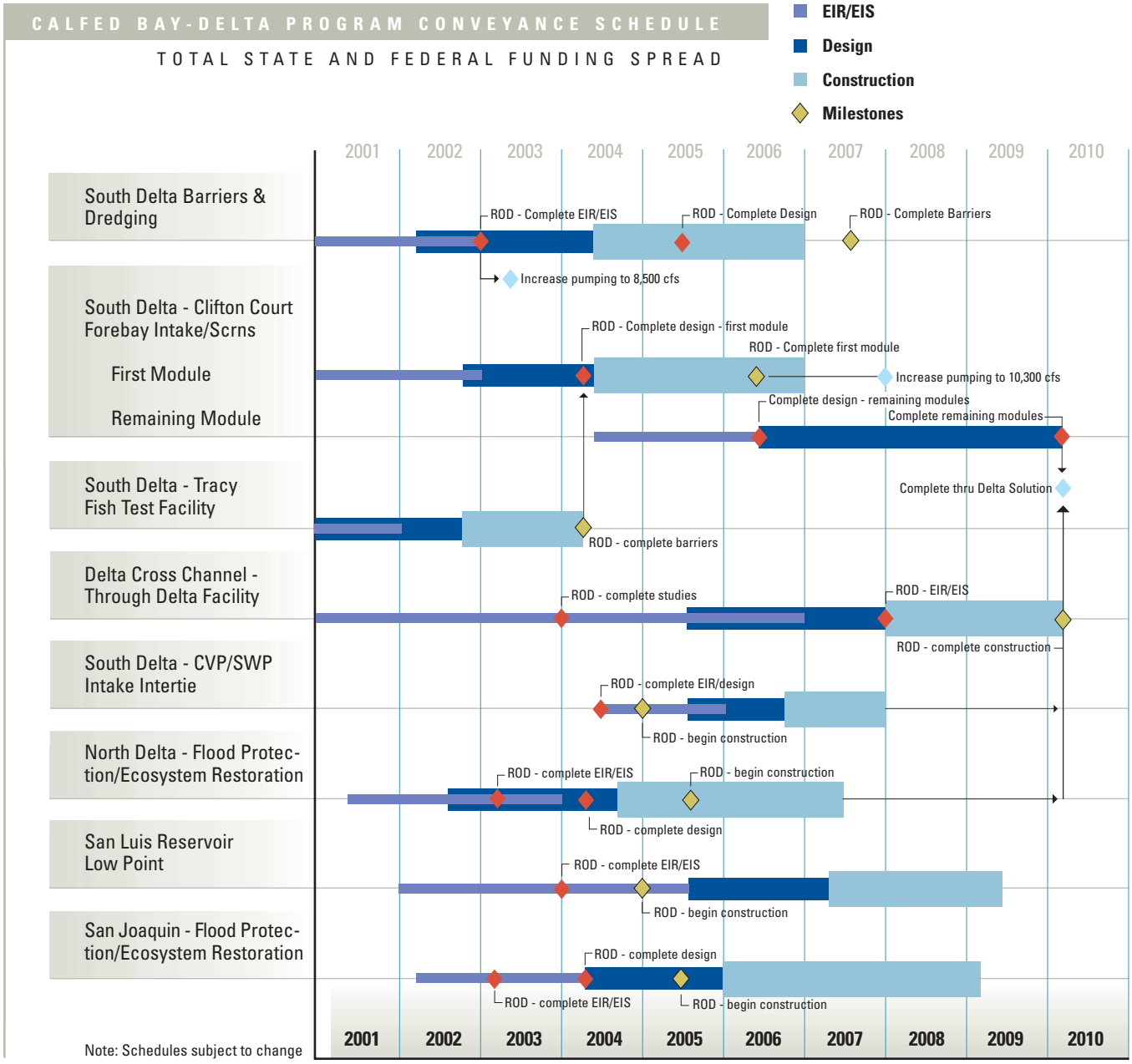
- Program review by North and South Delta Improvements Teams and North Delta Agency Team
- Monitoring by North Delta Stakeholders Group and Mokelumne-Cosumnes Watershed Alliance
- Regular reporting of progress on conveyance improvements at Delta Protection Commission Public Meetings

PERFORMANCE MEASURES

- Performance measures for the conveyance program may include overall survival rates for fish entering the Tracy Fish Test Facility. Increased survival rates mean fewer fish are being lost as a result of water project pumping. Other performance measures may be drinking water quality, flood protection, and ecosystem values.

NEXT STEPS

- Continue work on draft EIR/S and permit for South Delta
- Start construction at TFTF
- Begin testing and research for Through-Delta facility (TDF) ladders
- Continue second year studies at Delta Cross Channel and TDF
- Continue draft EIR/S for North Delta Flood Protection and Ecosystem Restoration
- Develop work plan and funding on Lower San Joaquin flood protection
- Begin scoping for San Luis Low Point Project
- Initiate study of CVP/SWP Intertie



WATER USE EFFICIENCY

Through a competitive process that will fast-track water conservation and recycling projects, the CALFED Bay-Delta Program aims to generate significant water supply, water quality and ecosystem benefits in the short term.

GOALS

- Reduce water demand through "real water" conservation
- Improve water quality by altering volume, concentration, timing and location of return flows
- Improve ecosystem health by increasing in-stream flows where necessary to achieve targeted benefits

ACCOMPLISHMENTS

- Awarded $13.3 million in water conservation grants and loans for 65 projects in 2001—including 37 urban and 28 agricultural projects. These projects were geographically diverse and were matched with over $9.1 million in local funding
  - Urban projects range from a voucher incentive program for clothes washers to more efficient landscape water programs
  - Agricultural projects range from canal lining to buried drip irrigation
  - Funded projects will collectively save 30,000 acre-feet of water, improve water quality, and save energy
- Awarded two water recycling grants
- Established 60 out of 200 quantifiable objectives for agricultural water use efficiency actions (on track to develop 30 more by 2003)
- Convened Independent Review Panel to assist in developing a definition of appropriate water measurement
- Successfully negotiated cooperative agreement with the Agricultural Water Management Council, U.S. Bureau of Reclamation and California Department of Water Resources to support locally cost-effective agricultural water conservation
- Laid groundwork for establishing a Water Use Efficiency Public Advisory Committee, approach to WUE monitoring and Urban BMP Certification
- Developed draft agricultural WUE milestones as part of overall assurances framework
- Forged an effective water use efficiency team with key CALFED agencies

PUBLIC AND PEER REVIEW

- Independent Review Panel for Agricultural Measurement
- Agricultural Measurement Ad-hoc Group
- Urban Certification Ad-hoc Group

PERFORMANCE MEASURES

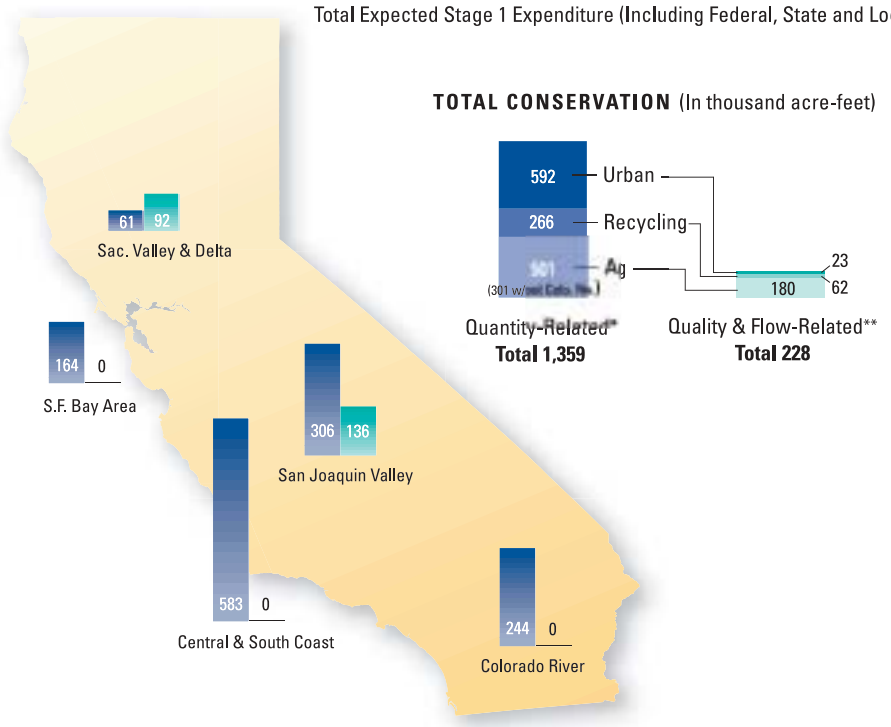
- Credible WUE performance data will be crucial to future discussions of overall program linkage and balance. WUE performance indicators will range from simple administrative measures to relatively complex measures of the outcome of WUE projects. These are expected to include the evaluation of progress toward meeting agricultural quantifiable objectives and similar measures for urban WUE such as changes in per capita water use, volume of in-stream flows and in-stream water quality.

NEXT STEPS

- Develop 2002 WUE Proposal Solicitation (grant) Process
- Seek advice from Water Use Efficiency Public Advisory Committee to better define WUE priorities, grant criteria, approaches to research and technical assistance and assurances processes (including ag milestones and urban BMP Certification)
- Work with Science Program to continue development of effective approaches to WUE monitoring, adaptive management, peer review and performance indicators (see figure)
- Refine quantifiable objectives
- Continue refining WUE implementation approach, including:
  - Finalize Agricultural WUE milestones through broad stakeholder involvement
  - Complete work of Independent Review Panel on appropriate measurement
  - Continue progress on Urban BMP Certification

EXPECTED STAGE 1 (2000–2007) WATER CONSERVATION BY TYPE AND REGION

Total Expected Stage 1 Expenditure (Including Federal, State and Local funds): **$2.96 billion**



*Quantity-Related Conservation is accomplished by reducing flows to salt-sinks or to evaporation.

**Quality & Flow Related Conservation is accomplished by rerouting flows to improve water quality and in-stream flows.

WATER TRANSFERS

Through development of an effective water transfer market, the CALFED Program aims to stretch existing water supplies by promoting transfers from willing sellers to buyers while protecting other water users, local economies and the environment.

GOALS

- Develop a more effective water transfer market
- Protect water rights, the environment and local economic interests
- Streamline the approval process of state and federal agencies for water transfers

ACCOMPLISHMENTS

- Supported the Governor's Advisory Drought Planning Panel in developing a Critical Water Shortage Contingency Plan. Implemented state and federal dry year programs that provided nearly 300,000 acre-feet to areas suffering from water shortages
- Developed "ON TAP" web site, an on-line water market information resource for water transfers
- Convened a stakeholder panel and drafted recommendations to streamline the transfer process
- Initiated technical review of "carriage water" requirements governing the transfer of water through the Bay-Delta
- Working to define transferable water and carriage water requirements

PUBLIC AND PEER REVIEW

- Monitor web site with Water Transfer Information Clearinghouse
- Review by CALFED agencies and State Water Resources Control Board Water Transfer Work Group

PERFORMANCE MEASURES

- Performance measures may include: number of proposed water transfers; ratio between water transfers proposed and approved; volume of water being transferred; reduced time needed to approve proposed transfers; and total regional water supply.

http://ontap.ca.gov

NEXT STEPS

- Establish fair and equitable "wheeling" terms
- Establish shared place-of-use between Central Valley Project & State Water Project
- Encourage coordination of multiple transfer within single approval processes
- Identify standard mitigation measures suitable for addressing socio-economic and cumulative impacts.
- Continue refinements and improvement to "ON TAP" web site
- Establish Water Transfer Clearinghouse

ECOSYSTEM RESTORATION PROGRAM

Ecosystem restoration actions help restore and improve the health of the Bay-Delta system for all native species while reducing its water management constraints.

GOALS

- Recover 19 at-risk native species and contribute to the recovery of 25 additional species
- Rehabilitate natural processes related to hydrology, stream channels, sediment, floodplains and ecosystem water quality
- Maintain and enhance fish populations critical to commercial, sport and recreational fisheries
- Protect and restore functional habitats, including aquatic, upland and riparian, to allow species to thrive
- Reduce the negative impacts of invasive species and prevent additional introductions that compete with and destroy native species
- Improve and maintain water and sediment quality to better support ecosystem health and allow species to flourish

ACCOMPLISHMENTS

- Established a "single blueprint" or framework for coordinating resource management, conservation and regulatory actions between state and federal agencies
- Since 1995, CALFED agencies and stakeholders have funded 326 ecosystem projects for $336 million including projects funded through the Anadromous Fish Restoration Program of the CVPIA. In 2001, $195 million was spent on activities including ecosystem water quality, ecosystem science, strategy planning, and 74 individual ecosystem restoration projects selected through a public solicitation process. Specific highlights include:
  - Began fish passage improvements along 182 river miles of three streams (Battle, Butte and Clear creeks) and three rivers (Cosumnes, Guadalupe and Mokelumne)
  - Installed 64 fish screens to protect fish at diversion points throughout the Bay-Delta system
  - Conducted 23 studies at $26.5 million on the effects of dissolved oxygen, mercury, pesticides, selenium and dissolved organic carbon on the Bay-Delta system
- Launched the Environmental Water Program with steering committee
- Continued to develop scopes of work for the Upper Yuba River Studies Program
- Facilitated approval of dissolved oxygen studies in the Stockton Deep Water Ship Channel in conjunction with the science program
- Began revised Ecosystem Restoration Implementation Plan for the Delta
- Developed Draft Stage 1 Implementation Plan for the Ecosystem Restoration Program

Butte Creek

PUBLIC AND PEER REVIEW

- Agency Stakeholder Ecosystem Team provides technical oversight
- Stakeholder and public oversight achieved through Ecosystem Roundtable
- Independent Ecosystem Science Board comprised of 12 independent scientists monitors scientific integrity of program
- Coordination and integration with other CALFED programs and agencies

PERFORMANCE MEASURES

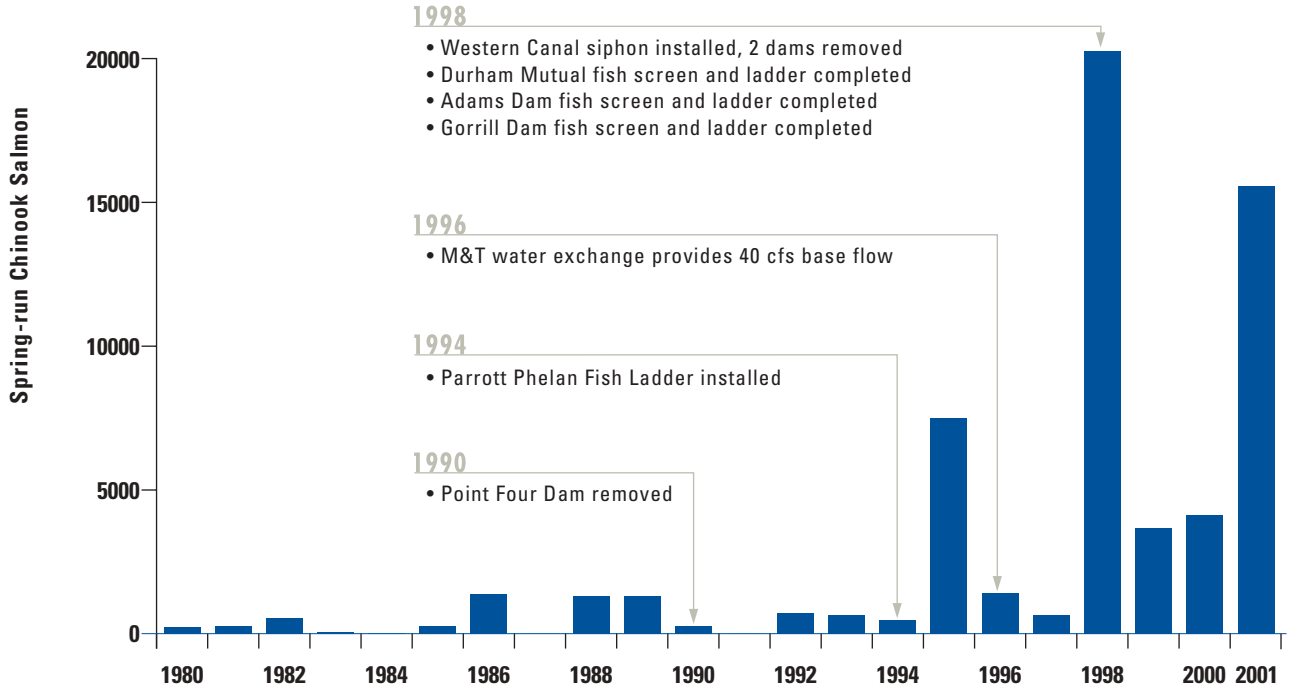
- Performance measures for the Ecosystem Restoration Program are being developed and include: number of funded restoration projects to benefit at-risk fish species; number of restoration projects funded; acres of enhanced or protected habitat leading to improved ecological processes; population trends for listed fish species dependent on the Delta, and percentage of the volume of diverted water screened.

NEXT STEPS

- Continue strategic planning and program management
- Continue project implementation
- Integrate science and initiate special studies

BUTTE CREEK PROGRESS

This graphic shows an increase in Spring-run Chinook salmon population trends on the Butte Creek that correlate with ecosystem restoration activities.



Delta Cross Channel Studies

ENVIRONMENTAL WATER ACCOUNT

Providing water at critical times is key to meeting ecosystem needs. Through its Environmental Water Account, CALFED is obtaining water and the flexibility to benefit the environment and minimize water supply impacts on cities, farms and businesses.

GOALS

- Reduce conflicts between environmental needs and water project operations by providing water and flexibility
- Better protection for fish and habitats at critical times by providing water in a flexible manner other than through strict requirements
- Increase water supply reliability by allowing projects to meet environmental and water supply needs at the same time

ACCOMPLISHMENTS

- Provided 287,000 acre-feet for environmental purposes without reducing allocations to farmers and cities
- Received commitments that water supplies would not be further reduced because of Endangered Species Act requirements

PUBLIC AND PEER REVIEW

- First annual panel review and scientific evaluation conducted to examine how much water was acquired, how it was used and whether it had an impact
- Ongoing review of EWA provided by scientific advisors
- Program review by CALFED member agencies as part of a cooperative management agreement

PERFORMANCE MEASURES

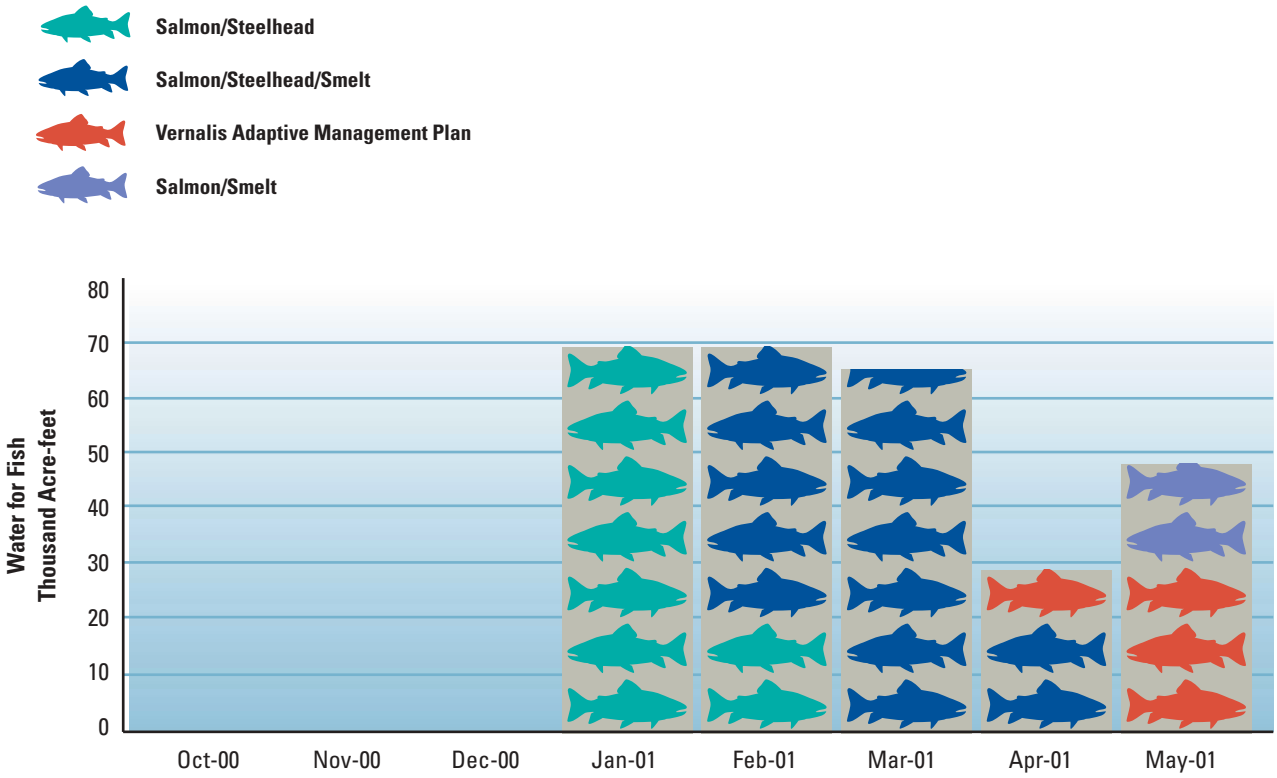
- Performance measures for the EWA may include: estimated effect on fish population levels because of use of EWA water and export reductions (by species); take of fish at the state and federal pumps; and estimated amount of EWA water used to help supplement reduced pumping and protect fish.

NEXT STEPS

- Acquire 255,000 acre-feet of water and source shift water in Year 2
- Continue to use acquired water for Endangered Species Act and other protection
- Complete long-term environmental documentation for EWA
- Acquire Tier 3 reserve water
- Continue work on acquisitions for the EWA in 2002

ENVIRONMENTAL WATER ACCOUNT USAGE

WATER YEAR 2000-2001



WATERSHED MANAGEMENT

By providing financial and technical assistance for local watershed programs, the CALFED Program aims to support watershed management efforts that reduce water quality problems, restore and protect watershed functions and improve water supply reliability.

The program also seeks to foster local leadership by encouraging landowners, community members, environmental organizations and local public agencies to come together on watershed projects.

GOALS

- Assist local programs that help achieve overall Program objectives
- Promote integration and collaboration between programs, efforts and people at the watershed level

ACCOMPLISHMENTS

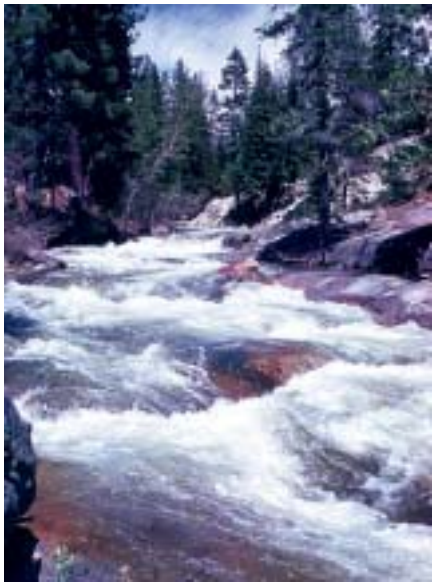
- Developed 2001 grant program for locally based watershed projects, funding 54 projects at approximately $18 million
- Provided funding in coordination with the Ecosystem Restoration Program to support projects in more than 50 watersheds
- Developed a Memorandum of Understanding to ensure better coordination between state and federal watershed programs

PUBLIC AND PEER REVIEW

- Formed Interagency Watershed Advisory Team to improve access to and effectiveness of technical assistance to local watershed groups
- All projects reviewed by Watershed Selection Committee that includes 17 representatives from member agencies, stakeholders and the academic community

PERFORMANCE MEASURES

- Performance measures for the Watershed Program may include: total number of watershed assessments completed or supported through the Program; total number of new local watershed management programs formed or supported by the Program; number of workshops and training sessions supported by CALFED for local and tribal governments; and improved performance of watersheds, as measured by level, timing and variability of flows.



NEXT STEPS

- Continue to implement a grant program using $10 million Prop 13 monies administered jointly with the State Water Resources Control Board
- Deliver expanded technical assistance from state agencies
- Support Watershed Working Group outreach efforts to further education and information to local communities
- Continue to define comprehensive set of performance measures and develop annual implementation plan

CALFED WATERSHED PROGRAM

DRINKING WATER QUALITY

The Drinking Water Quality Program is unique in addressing water quality from source to tap in order to improve drinking water supplies for the 22 million Californians who rely on the Bay-Delta watershed for all or part of their water.

GOALS

- Improve the quality of water at its source
- Seek advancements in treatment technology
- Find innovative ways to manage and deliver water
- Support health effects research and perform comprehensive monitoring and assessment of Bay-Delta drinking water quality

ACCOMPLISHMENTS

- Implemented seven projects in 2001 totaling $26 million
  Projects Include:
  - The Salinity and Selenium Project to build a pilot plant to treat agricultural drainage and produce water for reuse
  - The Bay Area Blending/Exchange study aimed at improving water quality by blending and exchanging source waters among water utilities
  - Studies of the sources and concentrations of contaminants in Bay-Delta water
  - Studies on Veale and Byron Tracts exploring options for addressing drainage problems in the Delta
  - Water Quality Exchange for Friant-MWD
  - Desalination Research and Innovation Partnership (MWD)
- Developed solicitation and selection process to fund additional drinking water quality projects
- Facilitated approval of Memorandum of Understanding among key state and federal agencies to coordinate actions to address water quality problems
- Negotiated approval of a Memorandum of Understanding between state agencies and local partners for Bay Area Blending/Exchange Studies
- Conducting first grant process
  - Threshold and Science reviews completed
  - 28 proposals to continue through the review process

PUBLIC AND PEER REVIEW

- Review by the Delta Drinking Water Council and Drinking Water Constituents Work Group

PERFORMANCE MEASURES

- Performance measures may include: water quality as indicated by monitoring and testing at key points; frequency or occurrence of advanced treatment technologies at local treatment facilities, and consumer water rates.

NEXT STEPS

- Help form new Drinking Water subcommittee that will operate under the new advisory group
- Make project recommendations for SWRCB Proposition 13 Nonpoint Source grants
- Issue Drinking Water Quality Program grants and directed actions for Years 2 and 3
- Initiate demonstration scale projects for ultraviolet disinfection and regional desalination
- Initiate feasibility study for Bay Area Blending/Exchange
- Develop and implement a plan to meet Delta water quality standards for which the state and federal projects have responsibility

Flood Emergency Response

LEVEE SYSTEM INTEGRITY

With its focus on improving Bay-Delta levees, CALFED is acting to protect water supplies needed for the environment, agriculture and urban uses by reducing the threat of levee failure and seawater intrusion. Delta levees also protect major interstates, roadways, cities, towns, agricultural lands and environmental and aquatic habitat.

GOALS

- Improve levees to a higher standard for greater flood protection
- Improve emergency response capabilities
- Ensure levee maintenance and habitat needs are met
- Improve coordination of permit processes
- Develop adequate and reliable funding for levee maintenance

ACCOMPLISHMENTS

- Awarded more than $18 million in Year 1 to improve levees on 50 Delta islands while $14.6 million was invested in special projects like ecosystem and levee restoration for water quality and flood protection
- Continued work on Delta Dredge and Reuse Strategy
- Developed a Memorandum of Understanding between agencies on the management of the levee program with DWR and the Army Corp of Engineers being co-leads
- Developed a charter for the Suisun Marsh to more effectively integrate multiple uses into a single plan
- Continuing work to develop practical ways to slow, stop and reverse island subsidence

PUBLIC AND PEER REVIEW

- Levee work approved at the State Reclamation Board public meetings
- Levee Program coordinated with stakeholders and peers through the Delta Levees and Habitat Advisory Committee and the Levees and Channels Technical Team

Levee Breach

Funds for Delta levees result in fewer requests for emergency recovery funds and fewer acres flooded.

PERFORMANCE MEASURES

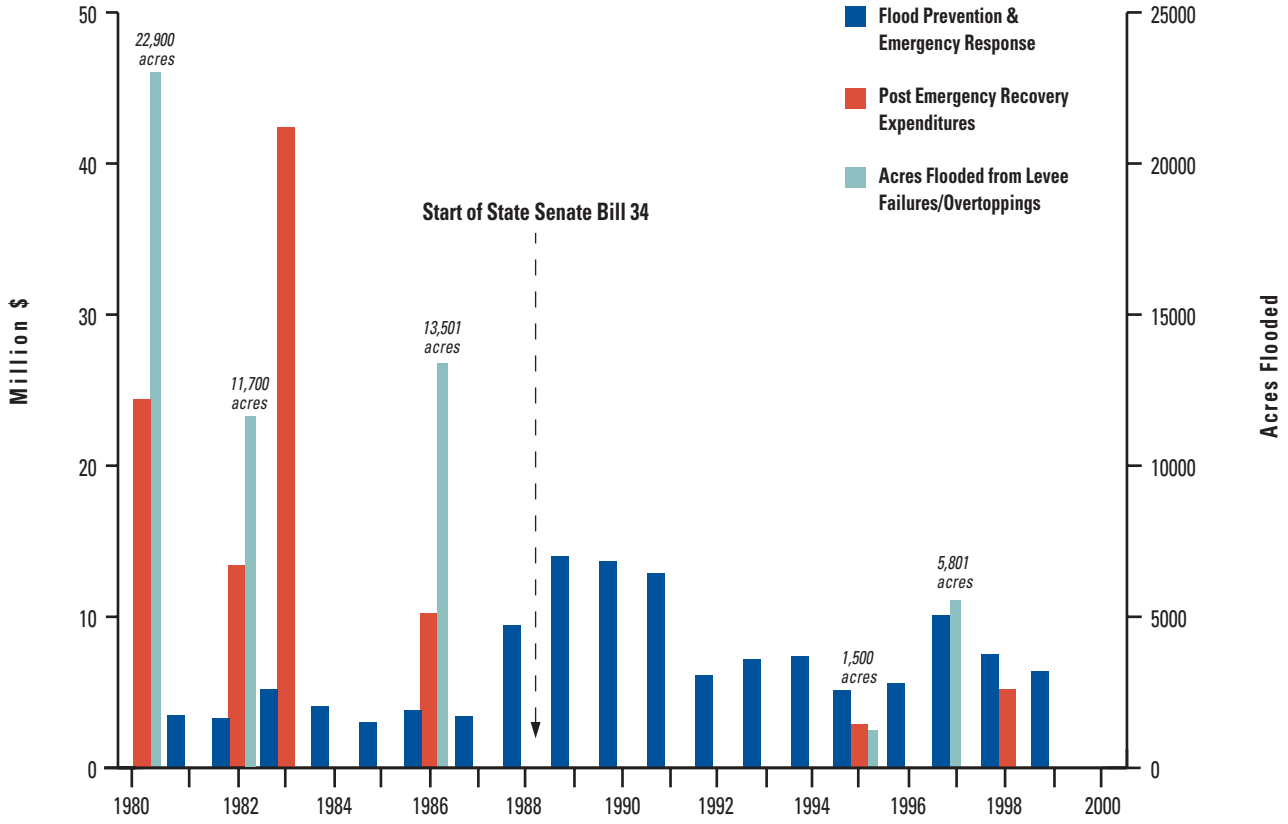
- Performance measures may include: number of levees improved to specific standards; emergency funding and flood response equipment secured and available; and acres and frequency of land flooded.

NEXT STEPS

- Support Levees Subvention and special projects programs
- Perform Risk Assessment
- Continue to refine program performance indicators
- Develop a Dredge Reuse Strategy
- Facilitate the Suisun Marsh Charter Process
- Plan for global climate changes
- Seek increased federal participation
- Continue regulatory coordination

DELTA LEVEE FLOOD COSTS

POST DISASTER ASSISTANCE COSTS AND ACRES FLOODED



Secretary of Resources Mary Nichols Meets With Media at the June 2001 Policy Group Meeting

program accountability and measuring success

The Bay-Delta Program brings a high level of public accountability and visible measures of success.

Performance measures are used to translate program goals and objectives into measurable benchmarks of success. They present information on conditions, trends and their significance. The Program uses performance measures to:

- Evaluate goals, progress and successes of restoration and management efforts
- Increase technical understanding of problems and trends in the Bay-Delta System
- Provide information that can help clarify management decisions
- Inform the public and policy makers about the progress of the program

goals

- Comprehensive project tracking
- Monitoring of each project's performance, cost and schedule
- Measurable progress to assure balance across all elements of the Program
- Monthly status information collected for every project

accomplishments

- Created and put in place a tracking system for evaluating and reporting on each individual program area
- Developed preliminary performance measures with ongoing development coordinated with the Science Program
- Crafted standard procedures for producing consistent data for each program area

example of program tracking information viewed from the web site

CALFED BAY DELTA PROGRAM
Delta Region

Project Title	Project Manager	Email	Phone Number
Tracy Fish Test Facility	Ron Brockman (USBR) Ron Ott (CALFED)		

Purpose of Project

The Tracy Fish Test Facility (TFTF) is being constructed as a state-of-the-art pilot program to test fish screen and salvage technologies, and more specifically fish sorting, handling, holding and transportation techniques preparatory to the design of the expanded Clifton Court Forebay and for expansion at Tracy.

Work Scope Summary

The work scope of this program requires the planning, design and construction of an improved fish processing facility which screens, hold, sorts, and transports a variety of fish species. A gravity line and a lift line operation are being tested with various fish salvage techniques.

Click Here for Detailed

Status of Work

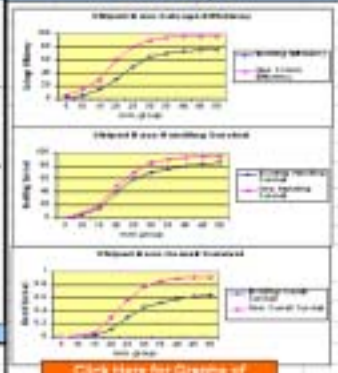
YEAR 1
A Project Management Plan was completed. A Draft Environmental Assessment/Initial Study was issued for public review and three workshops were conducted for comment from the public on this subject. Fishery Engineering Planes were developed. Numerous ongoing research studies related to Tracy Fish Test Facility were initiated for the advancement of necessary technologies. Two sheet pile tests were completed for determination of pile driving performance and noise/vibration characteristics. Approximately 80% of the final design of Tracy Fish Test Facility was completed.

YEAR 2
Continue research addressing the testing and evaluation of new facilities for fish screening, holding, sorting, and transportation in the South Delta. Begin Tracy Fish Test Facility construction, excavation, utility relocation and foundation dewatering; and order "critical path" mechanical equipment.

Progress Against ROD Milestones

TFTF has delayed construction start until May 02 in order to obtain necessary federal funding. Construction completion is now scheduled for January 04, afterwhich operational testing will begin. This will allow time to provide design information to Clifton Court to complete in Stage 1, but will delay their work by 6 months.

Technical Graphic



Click Here for Graphs of Technical Performance

Technical Performance Indicators

Indicator
Prevention of fish loss at pumps and survival of fish that enter the fish facilities to their return to their natural environment

Metric
Survival % of fish that enter the fish facilities

Target

Baseline Available
Yes

State Resources Secretary Mary Nichols; Department of Interior Deputy Chief of Staff Sue Ellen Wooldridge; and State Senators Jim Costa and Mike Machado at the June 2001 Policy Group Meeting

legislative actions in 2001

During 2001, both the California Legislature and the Congress considered several bills related to the Bay-Delta Program's objectives.

water transfers

- **SB 621 (*Costa*) water transfers** would revise the definition of "unused capacity" related to water transfers under specific conditions. This measure has passed the Senate and has been referred to the Assembly Committee on Water, Parks and Wildlife and to the Assembly Committee on Local Government.
- **SB 1029 (*Perata*) water transfers** would revise the definition of the term "fair compensation" related to specific circumstances related to water transfers, and would provide an avenue for filing complaints with SWRCB in that regard. This measure has been held in the Senate Committee on Appropriations.

groundwater management

- **AB 599 (*Liu*) Groundwater contamination: quality monitoring program (Chapter 522, Statutes of 2001)** requires the State Water Resources Control Board to integrate existing monitoring programs and design new program elements to establish a comprehensive statewide groundwater quality monitoring program and to report to to the Governor and the Legislature, by March 1, 2003, on a comprehensive groundwater quality monitoring program for the state.

water use efficiency

- **AB 331 (*Goldberg*) 2002 Recycled Water Task Force (Chapter 590, Statutes of 2001)** requires the Department of Water Resources to convene the 2002 Recycled Water Task Force to advise DWR in investigating opportunities for using recycled water in industrial and commercial applications and in identifying constraints to increasing the industrial and commercial use of recycled water. The bill requires DWR to report to the Legislature with recommendations by July 1, 2003. The Task Force would be funded by Proposition 13 (2000).
- **SB 672 (*Machado*) California Water Plan: urban water management plans (Chapter 320, Statutes of 2001)** requires the Department of Water Resources to include in the California Water Plan (DWR Bulletin 160 series) a report on the development of regional and local water projects, to include water recycling projects, that will improve water supplies to meet municipal, agricultural, and environmental water needs. This bill also requires urban water suppliers to describe the water management tools and options they use that will maximize resources and minimize the need to import water from other regions.

program governance

- **SB 1115 (*Costa*) The CALFED Bay-Delta Program** would create the CALFED Bay-Delta Commission in the Resources Agency to manage implementation of the Bay-Delta Program. This bill is in the Senate Committee on Agriculture and Water Resources.

program financing

- **AB 1602 (*Keeley*) California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002 (Chapter 875, Statutes of 2001)** places a $2.6 billion general obligation bond act on the March 2002 Statewide Primary Election ballot to authorize issuance of bonds to finance resource management programs, including $300 million to the Wildlife Conservation Board for habitat projects that promote recovery of threatened and endangered species. To be voted on in the March 2002 Primary Election.
- **SB 23 (*Costa*) CALFED funds: Bay-Delta Program (Chapter 7, Statutes of 2001)** provided Legislative certification that projects and purposes funded from the State General Fund in Fiscal Year 2000-01 are consistent with the July 2000 Bay-Delta Program Programmatic Environmental Impact Statement/Environmental Impact Report. This certification allowed use of $135 million in General Funds appropriated by the Budget Act of 2000.
- **SB 739 (*Peace*) Budget Act of 2001 (Chapter 106, Statutes of 2001)** appropriated funds to finance California State government for Fiscal Year 2001-02. The Budget Act appropriated $571.9 million ($81 million from the General Fund) to various State agencies to carry out the Bay-Delta Program.
- **HR 2311 (*Callahan*) Energy and Water Development Appropriations Act, 2002 (Public Law 107-66)** appropriated funds to the Department of the Interior and the US Army Corps of Engineers for Federal Fiscal Year 2002 for water development projects.

pending federal legislation

- **HR 3208 (Calvert) Western Water Enhancement Security Act** to authorize funding through the Secretary of Interior for the implementation of a comprehensive program in California to achieve increased water yield and environmental benefits, as well as improved water system reliability, water quality, water use efficiency, watershed management, water transfers, and levee protection.
- **HR 2404 (George Miller) California Water Quality and Reliability Act of 2001** to authorize federal agency participation and financial assistance for programs and for infrastructure improvements for the purposes of increasing deliverable water supplies, conserving water and energy, restoring ecosystems, and enhancing environmental quality in the State of California, and for other purposes.
- **S. 1768 (Feinstein) California Ecosystem, Water Supply, and Water Quality Enhancement Act of 2001** to provide authorization and funding for the enhancement of ecosystems, water supply, and water quality of the State of California.

other topics

- **AB 776 (*Thomson*) State Water Resources Control Board** would direct parties to the Sacramento Valley Water Management Agreement, including the Department of Water Resources and the Bureau of Reclamation, to brief Legislative committees monthly on implementation of the Agreement. The Agreement is being implemented in lieu of proceedings in Phase 8 of the SWRCB Bay-Delta Water Rights Hearing. This measure is in the Assembly inactive file.
- **SB 221 (*Kuehl*) Land use**: water supplies (Chapter 642, Statutes of 2001) requires legislative bodies of cities or counties, under the Planning and Zoning Law, to include as a condition in a tentative map for a subdivision of more than 500 dwelling units a requirement that a "sufficient water supply" shall be available. This bill also specifies procedures and standards for determining if water supplies will be sufficient.
- **SB 610 (*Costa*) Water supply planning (Chapter 643, Statutes of 2001)** requires cities and counties, upon determining that a project is subject to the California Environmental Quality Act, to request applicable public water systems to determine whether projected water supplies will meet projected water demand associated with the project. This bill specifies procedures and standards for making this determination.
- **SB 727 (*Costa*) Environmental Water Account Act of 2001** would formally establish the Environmental Water Account program and create the Environmental Water Account Program Fund. This measure is in the Senate Committee on Agriculture and Water Resources.

litigation update

Summary of Laub v. Babbitt, et al. (E.D. Cal., No. CV-F-00-6601)

On September 28, 2000, the California Farm Bureau Federation and three individuals filed a lawsuit against several federal and state CALFED agencies and officials in federal district court. The Farm Bureau claimed that the agencies violated the National Environmental Policy Act and the California Environmental Quality Act when they acquired land and water under the CALFED program. In December 2000, the court dismissed the CEQA claim and the state agencies. After the Farm Bureau amended its complaint to include additional state officials, the court dismissed this complaint as well, in September 2001. The court agreed with the federal and state defendants that the NEPA claim was not ripe for adjudication, and it agreed with the state defendants that NEPA does not apply to state acquisitions of land and water. Further proceedings are pending.

Summary of Bay-Delta Programmatic EIR Cases (Jud. Council Coord. Proceeding No. 4152)

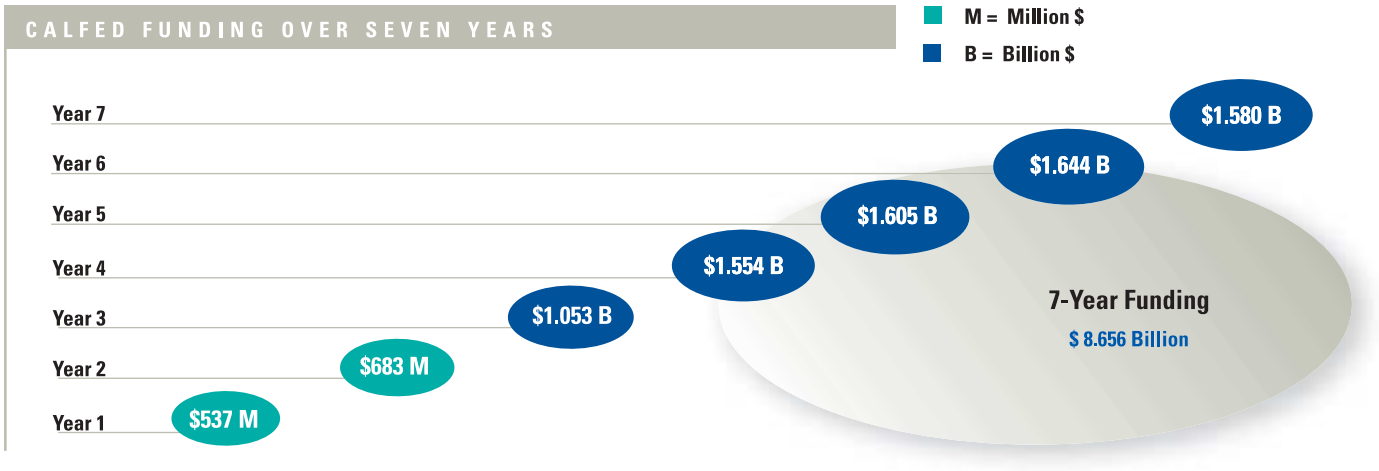
In September, 2000, the Regional Council of Rural Counties, Central and South Delta Water Agencies, and certain individuals filed suit in Sacramento Superior Court against the CALFED state and federal agencies (Case No. 00CS01331). The Municipal Water District of Orange County filed a related legal action in Los Angeles Superior Court at the same time (Case No. BC237574.) Following the dismissal of the Farm Bureau's legal claims from federal court, those petitioners refiled their legal action in Fresno Superior Court (Case No. 00 CE CG 11667). All three actions allege that the state agencies did not comply with CEQA in preparing the CALFED Programmatic Environmental Impact Statement/Environmental Impact and Record of Decision. The RCRC action also seeks to invalidate the CALFED ROD on various grounds.

On April 2, 2001, all three action were coordinated for hearing in the Sacramento Superior Court. The administrative record was filed in July, 2001, and various preliminary motions have been set for hearing in November and December, 2001.

On November 14, 2001, the Municipal Water District of Orange County dismissed its case following a settlement in which the parties acknowledged actions set forth in the CALFED ROD and the agencies' progress in implementing certain program areas.

fiscal information

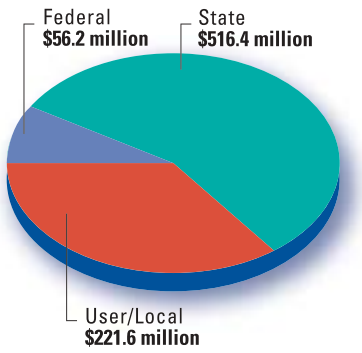
In the Record of Decision, CALFED projected expenditures for each program element over a 7 year period. In many cases the funding appropriated has not equaled the amount projected in the ROD. The primary source of funding in the first two years of CALFED implementation is from state bond funds. However, bond funds will be depleted by Year 3 and 4 in most cases.



stage 1

Projected Expenditures. Table 1, taken from the June 2000, Framework for Action, provides the Stage 1 estimates for CALFED projected expenditures. These estimates are in Year 2000 dollars. Actual funds appropriated for CALFED for Year 1 and 2 are shown in Tables 2 and 3. Proposed expenditures for Years 5-7 are estimates that will be adjusted after an evaluation is made of effectiveness of the program investments during Years 1-4. Table 1 does not include the funding projected for CALFED oversight and coordination. (see table 1 on page 66)

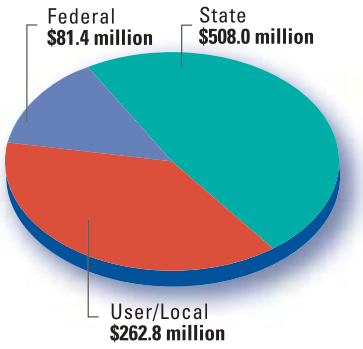
YEAR 1 FUNDING



year 1

Table 2 includes the funds appropriated for the CALFED Bay-Delta Program in the first year of the program (state fiscal year is July 1, 2000 – June 30, '01, federal fiscal year is October 1, 2000 – September 30, '01). Funding for CALFED in Year 1 was $766 million, primarily due to state bond funds ($323 million) and local cost sharing for recycling projects ($149 million). Year 1 funding was increased in some program elements because of revised cost estimates, such as for the Environmental Water Account, and because bond funds were being spent at a faster rate than planned in the ROD for groundwater projects and other programs. However, an increase in rate of spending in Year 1 funding does not affect the overall seven-year total reflected in Table 1. (see table 2 on page 67)

YEAR 2 FUNDING



year 2

Table 3 includes the funds appropriated for the CALFED Bay-Delta Program in the second year of the program (state fiscal year is July 1, 2001 – June 30, '02, federal fiscal year is October 1, 2001 – September 30, '02). Total funding budgeted for Year 2 is $852 million, primarily due to state bond funds ($385 million) and local cost sharing for recycling projects ($178 million). Again, in Year 2 as in Year 1, bond funds for ground-water storage are being spent at a faster rate than projected in Table 1. However, funding from the State General Fund was reduced by approximately $20 million in Year 2 due to state revenue shortfalls. (see table 3 on page 68)

fiscal information

The following three tables summarize the Stage I funding needs and the Year 1 and Year 2 appropriated funds for CALFED.

TABLE 1 CALFED BAY-DELTA PROGRAM
stage 1 projected expenditures ($ in millions)

	program year(s)								cost sharing		
program element	1	2	3	4	5	6	7	total	fed	state	other
Ecosystem Restoration[1]	$235	$198	$163	$168	$220	$218	$218	$1,420	$510	$510	$400
Environmental Water Account	$50	$50	$50	$50				$200	$100	$100	
Water Use Efficiency	$31	$62	$299	$641	$641	$641	$641	$2,956	$759	$759	$1,438
Water Transfers	$3	$3	$3	$2	$2	$1	$1	$15	$7.5	$7.5	
Watershed[2]	$40	$45	$45	$45	$45	$40	$40	$300	$138	$138	$24
Drinking Water Quality[3]	$41	$78	$82	$110	$116	$120	$128	$675	$200	$200	$275
Levees[4]	$33	$76	$78	$82	$45	$65	$65	$444	$142	$88	$34
Storage[5]	$50	$75	$138	$208	$266	$349	$339	$1,425	$237	$237	$200
Conveyance[6]	$29	$66	$150	$198	$220	$160	$98	$921	$188	$381	$193
Science	$25	$30	$45	$50	$50	$50	$50	$300	$150	$150	
total[7]	$537	$683	$1,053	$1,554	$1,605	$1,644	$1,580	$8,656	$2,432	$2,571	$2,564

[1]Proposed cost sharing for the ERP is a split between users (-$35 million per year from a new broad-based fee & $15 million per year in CVPIA Restoration Funds), and public dollars (assumed split equally between federal and state sources of funding). This table assumes revenues from new broad based fees would become available beginning in 2003.

[2]Cost shares include a 10% contribution from locals for community based watershed activities, with the rest funded equally between federal and state sources.

[3]In general cost sharing is assumed to be 50/50 fed/state or 33/33/33 fed/state/user, depending on the action. Some water quality actions assume federal and state funding in the initial 2 years, with 100% of the funding in the latter years from users.

[4]Total cost includes the Suisun Marsh Levee Program, which provides substantial ecosystem, water quality and flood protection benefits. Allocations of cost shares for this Program is not included in this table.

[5]Initial Funding will be largely state and federal sources. The cost share for surface storage construction has not been determined. Final cost shares (including reimbursements by beneficiaries) will depend on allocation of costs and identification of beneficiaries for individual projects. Cost sharing for full-scale groundwater storage projects assumes a 50% local match.

[6]Total includes rough estimate for construction of the San Luis Reservoir Low Point Project, but cost sharing is not included because cost shares have not been determined.

[7]Cost sharing dollars do not total $8.6 billion because allocation of cost shares have not determined for all levee, storage and conveyance activities.

TABLE 2 CALFED BAY-DELTA PROGRAM

year 1 funding by source ($ in millions)

	Year 1 Funding	state funding[1]					federal funding[2]				user/local funding[3]			
		GF	Prop 204	Prop 13	Other State	Subtotal	USBR/W&RR	USACE	Other Fed[2]	Subtotal	SWP	CVPIA RF	Local[4]	Subtotal
Ecosystem Restoration	$236	$3.5	$134.9	$46.2	$6.1	$190.7	$4.3	$0.4	$6.3	$11	$3.7	$17.1	$13.5	$34.3
Environmental Water Account	$59.1	$59.1				$59.1								
Water Use Efficiency	$204.1	$17.0		$12.3		$29.3	$26.0			$26.0			$148.8	$148.8
Water Conservation	($31.2)	($17.0)		($3.2)		($20.2)	($1.9)			($1.9)			($9.1)	($9.1)
Water Recycling	($172.9)			($9.1)		($9.1)	($24.1)			($24.1)			($139.7)	($139.7)
Water Transfers	$1.1	$1.1				$1.1								
Watershed	$33.0	$18.9	$1.3		$1.0	$21.2			$2.3	$2.3			$9.5	$9.5
Drinking Water Quality	$37.5	$13.5		$24.0		$37.5								
Levees	$35.4	$0.1	$1.7	$28.5		$30.3					$0.6		$4.5	$5.1
Storage	$95.5	$24.7		$69.0		$93.7	$1.8			$1.8				
WMS/Oversight & Coor.	($2.9)	($2.9)				($2.9)								
Surface	($13.8)	($12.0)				($12.0)	($1.8)			($1.8)				
Groundwater	($78.8)	($9.8)		($69.0)		($78.8)								
Conveyance	$22.3	$4.2		$4.8		$9.0	$2.6			$2.6	$9.7	$1.0		$10.7
Science	$28.2	$13.2			$2.3	$15.5	$4.0	$0.2	$1.9	$6.1	$6.2	$0.2	$0.2	$6.6
CALFED Science	($13.8)	($13.0)				($13.0)			($0.8)	($0.8)				
IEP	($14.4)	($0.2)			($2.3)	($2.5)	($4.0)	($0.2)	($1.1)	($5.3)	($6.2)	($0.2)	($0.2)	($6.6)
Oversight & Coordination	$13.8	$13.5				$13.5		$0.3		$0.3				
total	$765.9	$182.0	$137.9	$184.8	$11.7	$516.4	$42.7	$1.1	$12.4	$56.2	$26.4	$18.5	$176.7	$221.6

[1]State funding sources include General Fund (GF), bond funds (Proposition 204 & Proposition 13), and Other State funding sources (Other State). Other State includes State matching funds for projects funded through the ERP 2001 Proposal Solicitation Package ($6.1m) and Interagency Ecological Program (IEP) funding ($2.274m) from various departments that contributes to the Science Program.

[2]Federal funding sources include U.S. Bureau of Reclamation Water and Related Resources (USBR W&RR), U.S. Army Corps of Engineers appropriations (USACE), and Other Federal sources (Other Fed). Other Fed includes Federal matching funds for projects funded through the ERP 2001 Proposal Solicitation Package ($6.3m), USGS funding for the Science Program ($0.8), and IEP funding from U.S. Fish & Wildlife Service ($0.231), U.S. Geological Survey ($0.782), National Marine Fisheries Service ($0.035), and U.S. Environmental Protection Agency ($0.04) that contributes to the Science Program.

[3]User subtotal includes State Water Project Funds and CVPIA Restoration Funds that are collected from state water contractors and Central Valley Project water users. These funds are budgeted and appropriated through the federal and state governments. ERP amount includes local cost share for the 74 proposals recommended for funding this Year through the 2001 Proposal Solicitation Package. Water Use Efficiency and Watershed amounts include local cost sharing for grant projects funded through PSPs. Water Use Efficiency amount also includes non-Federal funding for Title XVI water recycling programs/projects. Levees amount includes local cost share for levee subventions. Science amount is SWP and other local contributions to the IEP. Additional local contributions in other program areas will be estimated as information is available.

TABLE 3 CALFED BAY-DELTA PROGRAM

year 2 funding by source ($ in millions)

		state funding					federal funding[2]				user/local funding[3]			
	Total Year 2 Funding	GF[5]	Prop 204	Prop 13	Other State[1]	Subtotal	USBR/W&RR[4]	USACE	Other Fed[2]	Subtotal	SWP	CVPIA RF	Local	Subtotal
Ecosystem Restoration	$188.2	$2.8	$126.3	$10.0		$139.1	$2.2	$1.2	$3.1	$6.5	$7.3	$18.8	$16.5	$42.6
Environmental Water Account	$48.0	$1.0	$28.2	$6.3		$35.5	$12.5			$12.5				
Water Use Efficiency	$333.7	$11.8		$43.3	$57.9	$113.0	$19.8		$18.2	$38.0			$182.7	$182.7
Water Conservation	($37.1)	($11.8)		($18.3)		($30.1)	($2.3)			($2.3)			($4.7)	($4.7)
Water Recycling	($296.6)			($25.0)	($57.9)	($82.9)	($17.5)		($18.2)	($35.7)			($178.0)	($178.0)
Water Transfers	$1.1	$0.9				$0.9	$0.2			$0.2				
Watershed	$17.3	$7.3		$10.0		$17.3								
Drinking Water Quality	$16.2	$4.1		$12.1		$16.2								
Levees	$17.2	$4.9	$8.4			$13.3		$0.3		$0.3	$0.6		$3.0	$3.6
Storage	$123.2	$14.1		$103.0		$117.1	$6.2			$6.2				
WMS/Oversight & Coor.	($1.5)	($1.5)				($1.5)								
Surface	($15.0)	($8.8)				($8.8)	($6.2)			($6.2)				
Groundwater	($106.8)	($3.8)		($103.0)		($106.8)								
Conveyance	$72.2	$3.3		$37.6		$40.9	$4.0			$4.0	$17.3	$10.0		$27.3
Science	$20.1	$5.1			$2.3	$7.4	$3.9	$0.2	$2.0	$6.1	$6.2	$0.2	$0.2	$6.6
CALFED Science	($6.6)	($4.9)				($4.9)			($1.7)	($1.7)				
IEP	($13.5)	($0.2)			($2.3)	($2.5)	($3.9)	($0.2)	($0.3)	($4.4)	($6.2)	($0.2)	($0.2)	($6.6)
Oversight & Coordination	$14.9	$7.3				$7.3	$7.5	$0.1		$7.6				
subtotal	$852.2	$62.6	$162.9	$222.3	$60.2	$508.0	$56.3	$1.8	$23.3	$81.4	$31.4	$29.0	$202.4	$262.8

[1]Includes State Revolving Funds ($57.9m) from the State Water Resources Control Board and Interagency Ecological Program (IEP) funding ($2.274m) from various departments that contributes to the Science Program.

[2]Includes U.S. Bureau of Reclamation Water and Related Resources (USBR W&RR), Central Valley Project Improvement Act Restoration Funds (CVPIA RF), U.S. Army Corps of Engineers appropriations (USACE), and other federal sources (Other Fed). Other Fed includes U.S. Fish and Wildlife Service funding that contributes to the Ecosystem Restoration Program (ERP- $2.242m), National Marine Fisheries Service funding that contributes to the ERP ($0.81m), U.S. Environmental Protection Agency funding ($18.2m) that contributes to the Water Use Efficiency Program, and IEP funding from U.S. Fish & Wildlife Service ($0.231), U.S. Geological Survey ($0.782), National Marine Fisheries Service ($0.035), and U.S. Environmental Protection Agency ($0.04) that contributes to the Science Program.

[3]User subtotal includes State Water Project Funds and CVPIA Restoration Funds that are collected from state water contractors and Central Valley Project water users. These funds are budgeted and appropriated through the federal and state governments. ERP and WUE amounts include estimates for local cost sharing for grant projects. WUE amount also includes local cost sharing for federal Title XVI recycling projects. Levees amount includes estimated local cost share for levee subventions. Science amount is SWP and other local contributions to the IEP. Additional local contributions in other program areas will be estimated as information is available.

[4]Includes $30 million for CALFED from P.L. 107-66. The allocation of the $30 million may be shifted between programs.

[5]A $20 million budget reduction in General Funds has been imposed by the Governor's Office in the following programs: WUE – $1.9 M; Watersheds – $2 M; DWQ – $5 M; Levees – $8.1 M; and Science – $3 M (numbers are approximations).

project	$
BAY REGION	
Alameda	
ACWD Schools & Water Conservation - Demonstration	$256,700
Oakland Zoo Recycling Feasibility Study	$204,600
Contra Costa	
A Straight Flush Commercial Ultra Low Flush Toilet Direct Install	$374,000
Contra Costa County Watershed Atlas and Creek Restoration Strategy	$50,000
The Save Our Delta Surveys (SODS)	$100,000
Walnut Creek Watershed	$260,000
Marin	
Local Watershed Stewardship: Steelhead Trout Plan	$47,500
Monterey	
Deep Aquifer Study and Management Plan	$260,000
Groundwater Recharge Feasibility Study	$100,000
Marina Coast Water District Water Conservation Feasibility Study	$143,256
On Farm Mobile Lab	$132,905
Napa	
Cullinan Ranch Restoration	$368,500
Ecological Monitoring of Tolay & Cullinan Ranch Tidal Areas	$593,931
Napa Creek Watershed Stewardship Year 3	$191,100
Napa River Watershed	$252,000
Napa River Watershed Mapping Partnership	$318,300
Napa River Wetlands Acquisition	$1,073,513
South Napa River Tidal Slough & Floodplain Restoration Project	$1,565,600
South Napa River Tidal Slough and Floodplain Restoration Project	$1,490,000
South Napa River Wetlands Acquisition and Restoration Program	$466,000
Stewardship Support & Watershed Assessment in the Napa River Watershed: A Two-Year Project	$360,900
Napa, Sonoma, Solano, Contra Costa, Marin	
IPM Partnership to Improve Water Quality in Suisun Bay and Local Creeks	$266,000
Sedimentation in the Delta and Suisun Bay	$1,367,684
San Francisco	
Yosemite Watershed Restoration Assessment Project	$771,000
San Francisco, Alameda, San Mateo	
Cold Water Fisheries and Water Quality Element	$200,000
Determine Biological, Physical & Chemical Characteristics of Ballast Water	$387,182
Preventing Exotic Introductions from Ballast Water	$222,830
Steelhead and Chinook Salmon Fish Passage Barrier Remediation on the Guadulupe River	$178,200
Santa Clara	
Almaden Reservoir Watershed Restoration Project	$300,000
Landscape & Agricultural Area Measurement & Water Budgets	$635,712
Stewardship Plans for the West Valley, Guadalupe, and Lower Peninsula Watersheds	$700,000
Upper Guadalupe River Tributary Monitoring Program and Pilot Restoration Project	$47,000
Santa Clara, Contra Costa, Alameda, Marin	
Regional High-Efficiency Washing Machine Rebate	$4,405,605
San Francisquito Creek Watershed Enhancement Program	$250,225
Westside Basin Groundwater Management Plan	$250,000
Santa Cruz	
Hydrogeologic Investigation and Monitoring in Scott's Valley	$250,000
Santa Cruz, Monterey	
Supplemental Wells/Injection Wells Water Quality Study	$30,450
Solano	
Adopt-a -Watershed Leadership Institute	$592,884
Bay Point shoreline Restoration Plan	$185,000
Benicia Waterfront Marsh Restoration	$59,000
Biological Restoration and Monitoring in the Suisun Marsh/North SF Bay Ecological Zone	$772,667
Chronic Toxicity of Envir. Contaminants in Sacramento Splittail - A Biomarker Approach	$673,684
Environmental Stewardship Educational Conferences & Tours	$48,500
Fish Screen Construction Suisun Marsh	$450,000
Fish Screen Construction Suisun Marsh (Phase 2)	$500,000
Hill Slough West Habitat Restoration. Demo Project	$87,000
Invasive Spartina Project	$1,793,661
Reintroduction of Endangered Soft Bird's Beak to Restored Habitat	$148,627
Suisun Marsh Property Acquisition & Restoration	$536,750
Estuary Action Challenge Environmental. Education Project	$50,000
Sonoma	
City of Santa Rosa Evapotranspiration Controllers Feasibility Study	$93,587
Culture of Delta Smelt	$1,025,015
Hill Slough West Habitat Demonstration Project	$200,000
Petaluma Marsh Expansion Project - Marin County	$352,135
Petaluma River Watershed Restoration Program	$220,000
Regional Wetlands Goals Project	$76,000
Sonoma Creek Watershed	$302,000
Sonoma Creek Watershed Conservancy	$438,923
Sonoma Creek Watershed Conservancy	$545,170
Sonoma Creek Watershed Conservancy: Outreach and Restoration	$270,541
Species & Community Profiles of the SF Bay Area Wetlands Ecosystem Goals Project	$45,320
Tolay Creek Restoration	$283,000

DELTA REGION	
Contra Costa	
Alhambra Creek Watershed CRMP Program	$138,500
Kirker Creek Watershed CRMP Program	$198,450
Stockton EWD & CCWD Fish Screen Facilities	$670,000
Franks Tract Restoration	$323,186
Rhode Island Floodplain Management and Habitat Restoration	$25,000
Study Associated with Restoration of Franks Tract	$1,218,105
Watershed Stewardship in Marsh Creek	$126,000
Contra Costa, San Joaquin	
Demo Project for Protection of Delta Islands	$928,150
Sacramento	
Arden-Cordova Evapotranspiration Controller/Rain Shut-off Program	$23,750
Cosumnes Floodplain Acquisition and Restoration	$3,500,000
Cosumnes River Acquisition, Restoration Planning and Demonstration	$750,000
Cosumnes River Preserve (Valensin Ranch Acquisition)	$1,500,000
Cosumnes River Salmoid Barrier Program Fishery	$188,255
Cosumnes River Watershed Inventory and Assessment	$556,325
Cosumnes Start-up Stewardship and Restoration	$1,985,100
Dry Creek Reclaimed Water Groundwater Recharge Feasibility Study	$287,500
Four Projects for Sacramento Area Water Use Efficiency	$16,661,950
Inventory of forest road systems, Cat Creek Watershed	$45,320
Juvenile Salmon Migratory Behavior Study in Delta	$210,000
McCormack-Williamson Tract Acquisition	$5,356,000
McCormack-Williamson Tract, Ph. II Monitoring	$572,886
McCormack-William Tract Restoration Plan, Design & Monitoring	$365,650
McCormack-Williamson Tract Wildlife Levee Management	$122,014
Restore Habitat on McCormack-Williamson Levees	$860,778
Rio Linda, El Verta - Natomas In-Lieu Groundwater Recharge Feasibility Study	$189,750
Sherman Island - Levee Habitat Demonstration Project	$480,000
Stone Lakes NWR Land Acquisitions	$2,622,500
Tyler Island Levee Protection and Habitat Restoration Pilot Project	$885,202
Water-Wise Demonstration Landscape	$277,663
Sacramento, El Dorado	
Linked Hydrogeomorphic Ecosystem Models to Support Adaptive Management	$1,546,016
Sacramento, San Joaquin	
Cosumne/Mokelumne Corridor Floodplain Acquisitions	$3,044,342
Cosumnes River Feasibility Study	$1,007,800
Influence of Flood Regimes, Vegetative and Geomorphic Structures on the Links between Aquatic and Terrestrial Systems	$2,521,236
NPS Pollution Reduction in Vineyards	$365,300
Sacramento, Yolo, Solano	
Hastings Tract screen feasibility study	$27,000
North Delta Area - Juvenile Salmon Rearing	$24,500

project	$
Sacramento, Yolo, Solano, San Joaquin	
1999/2000 Bay-Delta Education Program	$33,269
Algal Toxicity	$500,000
Arundo Donax Eradication and Coordination.	$842,587
Assessing Ecological & Economic Impacts of the Chinese Mitten crab	$113,033
Assessment of Ecological and Human Health Impacts of Mercury in the Bay-Delta Watershed	$4,164,000
Assessment of organic matter in the habitat and its relationship to the food chain	$1,440,649
Assessment of Pesticide Effects on Fish & Their Food Resources	$1,586,894
Biological Assessment of Green Sturgeon	$211,164
Biological Assessment of Green Sturgeon in the Sacramento-San Joaquin Watershed	$241,000
Central Valley Steelhead Genetic Evaluation	$70,636
Contaminant Effects on Smelt	$437,326
Culture of Delta Smelts Phase II & III	$576,229
Determine Effects of Toxics	$110,000
Developing a Methodology to Accurately Simulate Entrainment of Fish	$200,000
Development of a Comprehensive Implementation Plan for a Statistically Designed Marking & Recovery Plan	$74,951
Digital Soil Survey and Mapping Imagery Develop	$502,100
Dissolved Organic Carbon Release from Delta Wetlands, Part 1	$1,434,449
Dissolved Organic Carbon Release-Delta Wetlands	$1,030,000
East Delta Habitat Corridor (Georgiana Slough)	$1,100,000
Effects of Introduced Clams on the Food Supply of Bay-Delta Fishes	$1,000,490
Effects of introduced Species of Zooplankton & clams on the Bay-Delta Food Web	$653,384
Effects of Wetlands Restoration on Methyl Mercury Levels	$546,171
Evaluation of Alternative Pesticide Use Reduction Practices	$1,113,781
Evaluation of Potential Impacts of Chinese Mitten Crab on Benthic Comm. In the Delta	$152,233
Evaluation of Selenium Sources, Levels, and Consequences in the Delta	$1,627,117
Evaluation of tagging data	$672,600
Expanding California Salmon Habitat to Alter Dams and Diversions	$49,000
Fathead Minnow Toxicity	$400,000
Food Reserve for Zooplankton in the S. San Joaquin River Delta	$576,422
Genetic Identification of Watershed Dependent Species	$851,669
In-Channel Island Restoration/demonstration	$270,270
Innovative Fish Screen for Small Diversions Demonstration Project	$90,000
Introduced Spartina Eradication Project	$275,000
Introduction of Non-indigenous Aquatic Species Research Program	$197,000
Levee Setback Geomorphic Model	$104,458
Monitoring of Delta contaminants	$100,000
Non-native Invasive Species Advisory Council	$50,000
Practical Guidebook to Prevent & Control for Non-native Invasive Plants in Shallow Water Habitats of the Bay-Delta Ecosystem	$76,750
Purple Loosestrife Prevention, Detection & Control Actions for the Sacramento-San Joaquin River Delta System	$127,473
Purple Loostrife Prevention, Detection & Control in the Sac/San Joaquin Delta & Associated Hydrologic Units	$201,306
Rainbow Trout Toxicity Monitoring	$530,000
Reducing Risk of Importation & Distribution on Non-native Invasive Species Through Outreach & Education	$105,466
Research to Predict Evolution of Restored Diked Wetlands	$575,172
Delta Sediment Water Quality	$24,000
Delta Sediment Water Quality	$276,000
Delta Sediment Water Quality	$200,000
Sedimentation movement and availability and monitoring in the Delta	$1,047,010
Small Diversion Fish Screen Program	$900,000
Twitchell Island Subsidence Study	$194,870
Understanding Tidal Marsh Restoration Processes & Patterns	$1,042,246
Water Hyacinth Education Program	$64,500
Water Quality Criteria for Chlorpyrifos and Diazinon (Designated Action)	$67,753
Winter-run Chinook Salmon Captive Broodstock Program	$300,000
Zebra Mussel Detection & Outreach Project	$100,000

San Joaquin	
Canal Ranch Habitat Restoration Phase II	$135,940
Fay Island Restoration Project	$744,148
Fern-Headreach Tidal Perennial Aquatic and Shaded River Aquatic Conservation Project	$425,000
Lower Mokelumne River Restoration Program	$680,000
Lower Mokelumne River Watershed Education Project	$70,140
Proposal to Develop Local Watershed Stewardship Plan for the Lower Mokelumne River	$159,000
Staten Island Acquisition	$35,220,873
Task 1.1: Program Coordination	$277,000
Transport, Transfer & Effects of Selenium and Carbon in the Delta	$2,600,000
Woodbridge fish screen and passage	$1,575,000
San Joaquin, Stanislaus, Merced, Madera, Fresno	
Determination of the Causes of Dissolved Oxygen Depletion in the San Joaquin River	$892,400
Solano	
Cache Slough habitat enhancement	$85,000
Hastings Tract Fish Screen Phase II: Construction	$271,250
Jepson Prairie Restoration and Conservation Plan	$244,801
Lagoon Valley Watershed Restoration	$431,000
Liberty Island Acquisition	$8,926,000
Liberty Island Acquisition & Restoration Phase II	$2,701,734
Prospect Island - Develop Monitoring Plan	$35,000
Prospect Island - Shallow Water Habitat/Wetlands Restoration Plan	$2,500,000
Prospect Island Habitat Protection Project	$2,000,000
Prospect Island Monitoring Project	$915,000
Stanislaus	
Restore Special Run Pool 10 Reach	$165,000
Tuolumne River Natural Resources Program	$3,583,000
Yolo	
Discover the Flyway	$49,000
Educating Farmers & Landowners in Biological Reserve Management	$1,066,593
Inundation of a Section of the Yolo Bypass to Restore Sacramento Splittail & Other Native Species	$912,309
The Virtual Science Center and Hands-on Learning Programs	$9,600
Watershed Restoration Strategy for the Yolo Bypass	$244,188
Yolo Bypass - Habitat Restoration Study	$226,000
Yolo Bypass Management Strategy Phase II	$210,000
Yolo Bypass Watershed Planning Project	$288,081
Yolo County (FCWCD) Yolo Zamora Water District Conjunctive water use Project	$427,800

SACRAMENTO VALLEY REGION

Butte	
Adams Dam Fish Screen & Ladder	$70,304
Adams Dam Screen and Passage	$217,000
Butte Cr/Sanborn Slough Bifurcation Upgrade Project	$1,000,000
Butte Creek - Watershed Management Strategy Plan	$83,000
Butte Creek Acquisition and Riparian Restoration	$187,128
Butte Creek Acquisition and Riparian Restoration	$125,000
Butte Creek Riparian Restoration Demonstration	$76,348
Butte Creek Watershed	$302,867
Butte Creek Watershed Floodplain Management Plan	$582,510
Cherokee Watershed Organizational Capacity and Citizen Monitoring Project	$93,815
Construct Fish Ladder on Parrott-Phelan Dam	$0
Construct Siphon & Associated Improvements on Western Canal	$3,095,873
Fish Screen and Ladder Construction	$316,500
Gorrill Dam Fish Screen & Ladder	$67,990
Gorrill Dam Screen and Ladder	$369,641
OWID Palermo Canal Lining Project	$251,000
Watershed Education Program	$100,865
Western Canal Water District Tailwater Recovery System Feasibility Study	$125,000
Butte, Colusa, Glen	
The Butte Creek Watershed Educational Workshops and Field Tours Series	$33,000

project	$
Butte, Glenn	
WCWD Water Use Efficiency Project	$285,524
Butte, Yuba, Sutter	
Ferris Meadow Reach-Feather R. Corridor Restoration Management	$1,009,400
Colusa	
Maxwell ID-Tuttle Pump Relocation Project	$440,737
Sand and Salt Creek Watershed Project	$599,000
Colusa, Sutter	
RD 108 screen construction	$2,500,000
Wilkins Slough - Fish Screen Prelim. Design	$100,000
Small Fish Screen Evaluation	$95,000
El Dorado	
ARC Water Quality Assessment: South Fork American and Cosumnes River Basins	$96,700
Ultra Low Flush Toilet Rebates for Low-Income Customers	$104,300
Glenn	
Glenn County Installation of Dedicated Multicompletion Groundwater Monitoring System with Extensometers and Observation Wells	$265,000
Orland Project Water Conservation Feasibility Study	$140,000
Regional Water Use Efficiency Project	$296,800
Glenn, Butte, Colusa	
Fish Screen Construction	$5,500,000
Fish Screen -Feasibility Engineering	$75,000
Princeton Fish Screen Construction	$1,750,000
Princeton Pumping Plant Fish Screen (Phase 1-Feas.)	$75,000
Sac River Fish Small Screen Project	$1,800,000
Glenn, Colusa, Yolo	
Colusa Basin Watershed Program	$492,500
Glenn-Colusa	
GCID System Optimization for Fisheries, etc.	$1,322,000
Humboldt	
City of Rio Dell Water Conservation Feasibility Study	$100,000
City of Trinidad Water Conservation Feasibility Study	$100,000
Fieldbrook Community Services District Water Conservation Feasibility Study	$100,000
Lake	
Big Valley Groundwater Recharge Investigation Update	$179,004
Middle Creek Ecosystem Restoration Project- Design Phase	$135,818
Nevada	
South Yuba River Comprehensive Management Plan	$524,671
Yuba River Conservancy Planning and Public Outreach Proposal	$192,300
Orange	
Water Softener Pilot Program	$357,005
Placer	
City of Roseville Creek and Riparian Management and Restoration Plan	$228,470
Douglas/Long Canyon Paired - Watershed Project	$86,108
North/Middle Forks American River Watershed EUI-Based Watershed Management Plan	$554,500
Real-time Canal Flow Monitoring and Canal Lining	$1,325,488
Western Placer Watersheds Coordination, Planning & Assessment	$425,764
Plumas	
The Last Chance Assessment of Model Protocol	$582,000
Plumas, Sierra	
Hydrogeology and Groundwater Monitoring in Sierra Valley	$250,000
Sacramento	
Assessment and Implementation of Urban Use Reduction of Diazion and Chlorpyrifos	$663,500
Watershed Management Planning for Sacramento River Riparian Program	$200,000
Development of River Corridor Management Plan (RCMP)	$250,000
Sacramento, El Dorado, Placer	
American River Integrated Watershed Stewardship Strategy	$220,750
Shasta, Tehama, Butte, Glenn, Colusa, Sutter, Yolo	
Arundo Donax: Survey and Eradication	$360,000
Floodplain Acquisition. & Management on Sacramento River	$534,570
Promotion of Farming Best Management Practices and Calibration Technology to Mitigate OP Pesticide Runoff into the Sacramento River Watershed	$308,000
Riparian Corridor Acquisition & Restoration Assessment	$2,240,250
Sacramento River Acquisition and Riparian Forest Restoration	$780,000
Sacramento River and Major Tributaries.- Corridor Mapping Project	$145,200
Sacramento River Conservation Area Program	$326,991
Sacramento River Floodplain Acquisition and Riparian Restoration	$9,879,800
Sacramento River Meander Restoration	$898,700
Sacramento River Valley	
Sacramento River Floodplain Acquisition and Riparian Restoration	$512,500
Sacramento, Yolo, Solano, San Joaquin	
Fish Treadmill Developed Fish screen Criteria for Native Sacramento-San Joaquin Watershed Fishes	$823,000
Sacramento River Discovery Center	$39,552
Shasta	
ACID Churn Creek Lateral Improvement Project Feasibility Study	$100,000
City of Redding Water Utility Fish Screen Rehabilitation.	$510,262
Clear Creek Juvenile Salmon Monitoring Project	$871,026
Clear Creek Prescription	$256,260
Genetic Comparison of Steelhead Stocks in Clear Creek	$45,493
Gravel Restoration Project	$0
Lower Clear Creek Floodway Restoration Project	$3,559,596
Redding Area Water Resources Master Plan - Phase 2C	$250,000
Saeltzer Dam Fish Passage	$238,200
Sulphur Creek Coordinated Resource Management Planning Group	$23,828
Interactive Watershed Information Model for Education and Adaptive Management	$378,899
Shasta West Watershed Assessment	$131,600
Shasta, Modoc, Lassen	
Pit River Watershed Alliance Watershed Management Program	$542,456
Shasta, Glenn, Colusa, Yolo, Sutter, Butte, Sacramento	
Sub-basin Level Water Measurement Program	$7,756,000
Shasta, Tehama	
ACID Fish Passage	$325,000
ACID Fish Passage and Fish Screen Improvement Project, Phase II, Final Design	$860,000
ACID Fish Passage and Fish Screen Improvement Project, Phase III	$5,253,000
ACID Fish Screen	$5,100,000
Battle Creek - Chinook Salmon & Establish Watershed Conservancy	$50,000
Battle Creek - Chinook Salmon & Steelhead Restoration Study	$306,000
Battle Creek Anadromous Salmonid Monitoring Projects	$1,576,152
Battle Creek Riparian Protection	$1,000,000
Battle Creek Salmon and Steelhead Restoration Project	$28,000,000
Battle Creek Screens and Fish Passage	$395,000
Battle Creek Screens and Fish Passage	$395,000
Battle Creek Watershed Stewardship	$145,000
Cottonwood Creek Watershed Group Formation	$161,000
Cottonwood Cr. Watershed Monitoring. & Assessment	$360,500
Cottonwood Creek Channel Restoration Planning	$61,000
Fish Passage Improvement Project at the Red Bluff Diversion Dam	$340,600
Fish Passage Improvement Project at the Red Bluff Diversion Dam	$1,030,000
Improve Upstream Ladder & Barrier Weir @Coleman Nat'l Fish Hatchery at Battle Creek	$2,500,000
Lake Red Bluff Riparian Area Restoration & Education Support Project	$29,114
Main Canal Modernization	$4,113,000
Monitoring Spring and Winter-run Chinook Salmon and Steelhead in Battle Creek	$150,000
Sacramento River Winter Chinook Salmon Carcass Survey	$305,273
Selected fish screens	$374,850
Spawning Areas of Green Sturgeon in the Upper Sacramento River	$60,801
Solano	
Lower Putah Creek Watershed Assessment and Stewardship Implementation Program	$600,000
Sutter	
Lower Butte Creek Project Phase III	$4,783,719
Sutter County Integrated Watershed Coordinator	$195,200
Sutter National Wildlife Refuge Water Conveyance Restoration Project	$521,250
Sutter, Placer, Sacramento	
American Basin Fish Screen & Habitat Improvement	$950,000
Project Management & Scoping	$203,250

project	$
Restoration planning (M and N Fork American River, Auburn Ravine, Coon Creek)	$222,530
Sutter, Sacramento	
American Basin Fish Screen and Habitat Improvement Project	$200,000
City of Sac. Fish screen Program	$6,020,995
City of Sacramento Fish Screen Replacement Project Phase 2 - Design	$654,500
RD 2035 Fish Screen	$100,000
Sutter, Yuba, Sacramento	
Riparian Habitat Restoration Verona-Collinsville (Phase 1-Feas.)	$500,000
Tehama	
Anadromous Fish Passage at Clough Dam on Mill Creek	$1,215,000
Deer and Mill Creeks Acquisition and Enhancement	$1,000,000
Lassen Natl. Forest Watershed Stewardship	$849,845
Lower Mill Creek riparian Restoration	$69,000
Lower Mill Creek riparian Restoration	$30,000
Water Inventory and Analysis for Tehama County	$272,500
Watershed Planning (Deer Creek)	$196,554
Lassen National Forest Watershed Stewardship within the Anadromous Antelope Creek Watershed	$673,000
Tehama, Butte	
Boeger Family Farm Fish screen Phase II: Construction	$139,500
Butte Creek Big Chico & Sutter Sal & Steelhead Evaluation	$280,951
Estimated Abundance of Juvenile to Adult Escapement in Sacramento River	$1,081,638
Pump Station Relocation Construction	$1,610,000
Real Time Flow Monitoring	$418,700
Watershed Plan (Big Chico Creek)	$422,830
Watershed improvements/sediment stabilization (Deer, Mill, Antelope Creeks)	$371,000
Deer Creek Watershed Conservancy Rangeland and Riparian Management Program	$212,000
Tehama, Butte, Glenn, Sutter, Colusa	
Lower Butte Creek Project Phase II	$775,000
White Mallard Dam & Associated Diversions	$84,938
Yolo	
A Management Program for Tamarix & Arundo don ax on Cache Creek	$222,200
Capay Valley Community Action Plan	$40,000
Capay Valley Watershed Improvement Program	$118,000
Metering El Macero Water Service Area of Davis	$356,250
RD 2035 Fish Screen Design & Environ. Review	$1,820,000
Sustaining Agriculture & Wildlife Beyond Riparian Corridor	$1,464,167
Union School Slough Watershed Improvement Program	$636,000
Willow Slough Watershed Rangeland Stewardship Program	$1,800,668
Yolo, Solano	
Lower Putah Creek Watershed Stewardship Program	$100,500
Yuba	
Development of Implementation Plan for Lower Yuba River Anadromous Fish Habitat Restoration	$3,000,000
Life History and Stock Composition of Steelhead Trout	$120,000
South Yuba River Coordinated Watershed Management Plan	$264,000
Yuba County Conjunctive Use Program	$1,500,000
Yuba River Fish Screen Replacement	$114,750
Yuba Watershed Council	$142,618
Sac River Small Diversion Fish Screen Program	$322,081
Wilson Ranch Screen	$200,000

SAN JOAQUIN REGION

San Joaquin	
Biological Agricultural Systems in Cotton-BASIC-Reducing Synthetic Pesticides & Fertilizers in the N. San Joaquin Valley	$460,000
Calaveras	
Calaveras River Watershed Management Plan Implementation Program (Phase II)	$195,000
Camanche/Valley Springs Groundwater Study	$241,180
Contra Costa, Alameda, San Joaquin, Stanislaus, Merced	
Bacterial treatment of Selenium in the Panoche Drainage	$1,149,000
Fresno	
Arroyo Pasajero/Cantua Creek Conjunctive Use Hydrologic Study	$72,900
Current Condition Assessment of the Silver Creek Drainage and Panoche Alluvial Fan Areas of the Panoche/Silver Creek Watershed	$200,000
Dedicated Recharge Basin	$2,145,750
Groundwater Monitoring and Recharge Investigation Project	$249,895
McMillan Recharge Project	$136,500
Millerton Area Watershed Coalition	$102,154
On-farm Integrated Irrigation & Drainage Management	$1,122,385
Pleasant Valley Groundwater Storage Pilot Project	$590,550
Variability of Soil Salinity on Farms	$281,410
Waldron Pond Expansion Project	$97,500
Fresno, Kings	
Total Utilization of Drainage & Minimization of Evaporation	$148,030
Fresno, Kings, Kern	
Irrigation Scheduling	$1,365,000
Fresno, Kings, Tulare	
Monitoring Well Replacement	$250,000
Inyo	
Development of Hydrologic and Vadose Models to Improve Groundwater management in the Owens Valley	$375,750
Kern	
B-369 Distribution System and Lateral / B-230-D Extension	$5,763,410
Groundwater Management in Indian Wells Valley Basin	$207,000
Groundwater Recharge Feasibility Report	$280,000
Groundwater Storage Program	$1,583,094
P-667 Distribution System	$4,309,808
Service Area 3 Distribution System Improvement	$650,100
Service Area 5 Distribution System Improvement	$894,900
Water Quality Study	$282,246
Kern-Tulare	
Water Use Efficiency Project	$8,000,000
Kings	
AWD In-Lieu Groundwater Recharge Feasibility Study	$97,500
Tulare	
Hannah Ranch Site - Recharge Feasibility Study	$94,000
Madera	
Gravely Ford Canal Dedicated Basin	$69,000
Groundwater Basin Data Management System	$245,000
In-Lieu Groundwater Recharge Feasibility Study	$68,000
Madera, Fresno	
On-farm Irrigation System Improvements	$467,706
Merced	
Merced River Corridor Restoration Plan	$300,000
Merced River Corridor Restoration Project Phase III	$235,870
Real Time WQ Management of Seasonal Wetlands	$671,900
Merced River Salmon Habitat Enhancement; Lower Stone	$130,000
Merced River Salmon Habitat Enhancement; Ratzlaff Reach	$1,586,350
Phase 3 - Merced River Salmon Habitat Enhancement	$2,433,759
Merced	$1,699,101
San Bernardino	
Groundwater Management Plan for the Mojave Water Agency	$550,000
San Joaquin	
Delta Studies Program for San Joaquin County Schools	$306,291
Demo of Passage Technology for Restoration of Newton CU Mine	$60,000
Enhancement of the San Joaquin County Groundwater Monitoring Program	$923,527
Murphy Creek Restoration Project	$282,500
SEWD Groundwater Storage Pilot Project	$1,788,000
Sub-surface Drip Irrigation of Asparagus	$2,400,500
The Arroyo Pasajero Watershed: Restoring the Land for the Water	$200,000
This River is Our River: Watershed Capacity Building	$373,875

project	$
San Joaquin, Sacramento	
Implementing programs to reduce the use of pesticides and fertilizers in Sacramento and San Joaquin watersheds	$1,680,631
Implementing programs to reduce the use of pesticides and fertilizers in Sacramento and San Joaquin watersheds (BIOS)	$660,000
San Joaquin, Stanislaus, Merced, Fresno	
Panoche/Silver Creek Watershed Management Action Plan	$873,440
San Joaquin, Stanislaus, Merced, Madera, Fresno	
Acquisition and Restoration of Refuge Lands (San Joaquin R NWR)	$10,827,000
Banta-Carbona fish screen	$938,875
Bear Creek Floodplain Restoration Demonstration Project (SLNWR)	$334,000
Developing a Genetic Baseline for San Joaquin Salmon	$387,003
Fish Screen Project	$100,000
Focused Action to Develop Ecol. Based Hydro Model	$304,803
Health Monitoring of Hatchery & Natural Fall-run Chinook in San Joaquin River	$38,996
Mechanistic Approach to Riparian Restoration	$230,376
River Studies Center Exhibits & Programs	$70,467
San Joaquin River Pilot Project	$2,575,000
San Joaquin River Real-Time Water Quality Management Program	$931,857
San Joaquin Valley Salmonids in the Classroom Program Enhancement	$3,000
Santa Barbara	
Wellhead Protection Demonstration Project and Pilot Demonstration A&R Program	$250,000
Stanislaus	
Chinook Salmon Movement in the Lower San Joaquin R and South Delta	$285,000
Floodplain Easements; Lower Tuolumne and San Joaquin (DA9)	$1,545,000
Gravel at Basso Bridge	$250,975
Grayson River Ranch Perpetual Easement and Restoration	$732,000
Hamilton Wetlands Restoration Planning	$830,500
Irrigation Mgmt. & Dormant Spray Reduction	$1,026,794
Lower San Joaquin River Floodplain Protection and Restoration Project	$1,100,000
Patterson ID Positive Barrier Fish Screen on San Joaquin	$175,000
Restore MJ Ruddy Reach	$3,332,050
San Joaquin R NWR Riparian Habitat Protection & Restor.	$7,646,233
Southwest Stanislaus County Regional Drainage Water Management	$848,138
Tuolumne R. Bobcat Flat Floodplain Acquisition	$2,043,850
Tuolumne R. Restoration: Special Run Pool 11	$543,530
Tuolumne River Channel Restoration (Pool 9)	$2,353,100
Tuolumne River Fine Sediment Management	$910,486
Tuolumne River Initiative: Developing an Integrated Plan	$250,000
Tuolumne River Mining Reach Restoration No.3 Warner-Dierdorf Segment	$910,486
Tuolumne River Setback Levees and Channel Restoration	$2,801,000
Water Challenge 2010	$94,213
Stanislaus, San Joaquin	
Knights Ferry Gravel Replenishment	$536,410
Tuolumne River Setback Levees and Channel Restoration	$1,362,000
Water Acquisition	$3,090,000
On-Farm Ditch and Cast-in-Place Replacement	$548,000
Tulare	
Groundwater Recharge Facilities Feasibility Study	$82,984
Kennedy Wasteway/Sandridge Canal Feasibility Study	$57,000

SOUTHERN CALIFORNIA REGION

All Counties	
Brookside Golf Course Water Management Project	$356,200
Claremont Evapotranspiration Controller/Rain Shut-off Program	$95,000
Commercial Rebate Program	$3,268,000
Community Water Education and Training (WET)	$3,900,000
Demo. of Water Cons. in Urban Supermarkets	$180,000
Dominguez Gap Enhanced Groundwater Recharge Feasibility Study	$176,446
High-efficiency Clothes Washer Rebates	$1,500,000
Live Oak Basin Pilot Project	$500,000
New Courses for Bilingual Landscape Education	$150,000
San Dimas Evapotranspiration Controller/Rain Shut-off Program	$95,000
San Gabriel River Watershed Citizen Monitoring Program	$51,120
San Gabriel Valley. Indoor/Outdoor Water Savings Survey	$43,757
Los Angeles	
LA, SE District Evapotranspiration Controller/Rain Shut-off Program	$47,501
Los Angeles & San Gabriel Rivers Watershed Council Organizational Development	$288,000
Study of Augmenting Groundwater Supplies Through Capture of Urban Runoff	$971,800
Sun Valley Watershed Management and Water Replenishment Project	$430,000
Orange	
Expansion of the Learning to be WaterWise Program	$58,245
Joint Agency X-Ray Processor Retrofit Model	$41,698
Riverside	
Back Basin Injection Pilot Project	$1,664,750
Cabazon Groundwater Recharge Project	$152,260
Coldwater Basin Groundwater Recharge Feasibility Study	$198,000
Development of a Groundwater Management Plan for the Elsinore Basin	$592,000
Feasibility Study for CVWD Irrigation System	$99,929
Hemet / San Jacinto Groundwater Storage Program	$400,000
Martinez Canyon Pilot Recharge Study	$1,629,521
Salt-Tolerant Crops Evaluation	$69,600
Upper Chuckwalla Groundwater Storage Program	$530,380
Riverside, San Bernardino	
Yucaipa Water Conservation Feasibility Study	$89,324
San Bernardino	
Groundwater Recharge Facilities Feasibility Study	$145,000
Transition Zone Mojave River Groundwater Recharge Feasibility Study	$200,000
San Diego	
Lower San Luis Rey River Valley Groundwater Storage and Recovery Pilot Project	$2,500,000
San Diego River System groundwater Management Program	$670,560
Voucher Incentive - Clothes Washers- Residential	$873,500
San Luis Obispo	
Los Osos Evapotranspiration Controller/Rain Shut-off Program	$47,500
Santa Barbara	
Weather TRAK Evapotranspiration Controller	$351,325
Ventura	
Inland Saline Intrusion Assessment Project	$248,600

MULTIPLE REGIONS

Sacramento, Yolo, Solano, San Joaquin	
Applied Research to Identify Chinook Salmon Runs via Genetics	$450,000
Bay-Delta Environmental Restoration Education Program	$40,000
Bay-Delta Learning Initiative	$126,668
Environmental Agriculture Conferences and Field Tours	$28,000
Estuary Action Challenge Environmental Education Project	$51,500
Traveling Film Festival Exhibit	$51,500
Traveling Film Festival/ San Joaquin River Oral History Film	$216,550
Traveling Film Festival/Heron Booth/Video Archive	$54,000
Water Challenge 2010 Exhibit	$52,015
Watershed Educational Training	$13,390
Statewide	
California Water Conservation Support Network	$210,000
Citizen Involvement and Regional Outreach Program	$608,132
Discover the Flyway	$197,987
Efficient Landscape Water Program	$1,022,639
Implementation of BMPs to Mitigate OP Pesticides Runoff	$400,000
Irrigation Districts' Technical Assistance	$600,000
Partnership for Sub-Regional Watershed Forums and a Watershed Center	$498,122
Public Information Program	$1,350,000
Quantifying Commercial Industrial Institution Demand Side Management Potential	$145,000
Sacramento River, Headwaters to the Ocean, Public Information and Education	$321,816
The Learning Watershed Project	$56,907
Water Conservation and Recycling Awareness	$241,593

reference documents

California's Water Future: A Framework for Action – June 9, 2000

Final Programmatic Environmental Impact Statement/Report (EIS/EIR) – July 21, 2000

- Main Document (Impact Analysis) – 1,200 pages
- Executive Summary of EIS/EIR Main Document – 40 pages
- Phase II Report – 200 pages
- Implementation Plan – 190 pages
- Ecosystem Restoration Program Plan – 1,200 pages, four volumes
- Levee System Integrity Program Plan – 500 pages
- Water Quality Program Plan – 300 pages
- Water Use Efficiency Program Plan – 190 pages
- Water Transfer Program Plan – 100 pages
- Watershed Program Plan – 100 pages
- Multi-species Conservation Strategy – 500 pages
- Comprehensive Monitoring Assessment & Research Program Plan – 150 pages
- Response to Comments – 1,500 pages, three volumes

Record of Decision – August 28, 2000

CALFED Bay-Delta Program Project Tracking

ERP Draft Stage 1 Implementation Plan

CALFED

BAY-DELTA

PROGRAM

ANNUAL REPORT

2001

CALIFORNIA WATER

CALFED AGENCIES

CALIFORNIA

The Resources Agency
- Department of Water Resources
- Department of Fish and Game
- The Reclamation Board
- Delta Protection Commission
- Department of Conservation
- San Francisco Bay Conservation and Development Commission

California Environmental Protection Agency
- State Water Resources Control Board

California Department of Health Services

California Department of Food and Agriculture

FEDERAL

Department of the Interior
- Bureau of Reclamation
- Fish and Wildlife Service
- Geological Survey
- Bureau of Land Management

Environmental Protection Agency

Army Corps of Engineers

Department of Agriculture
- Natural Resources Conservation Service
- Forest Service

Department of Commerce
- National Marine Fisheries Service

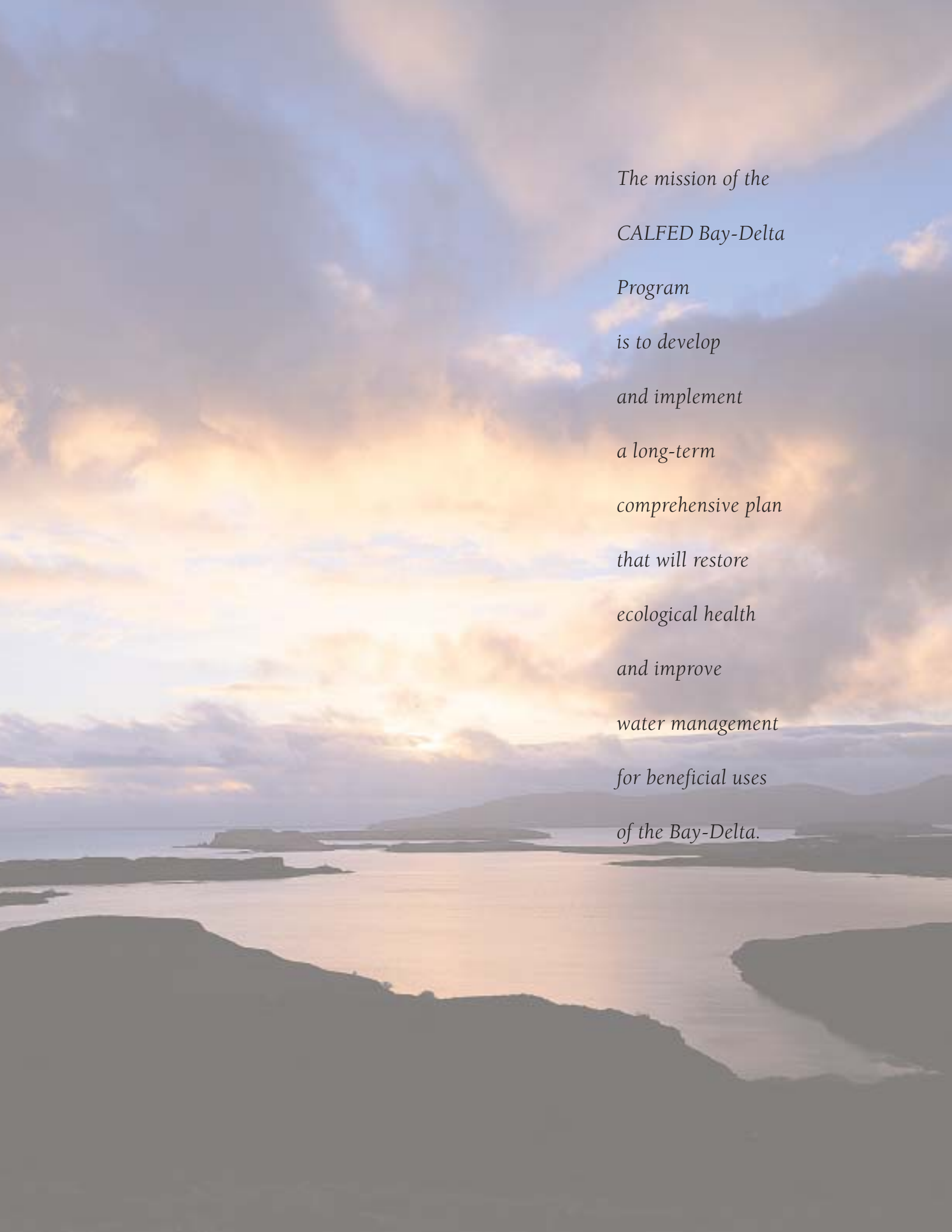
Western Area Power Administration

CALFED BAY-DELTA PROGRAM

The CALFED Bay-Delta Program is a collaborative effort among 23 state and federal agencies (CALFED agencies) to improve water supplies in California and the health of the San Francisco Bay-Sacramento-San Joaquin River Delta Watershed. Under the current governance structure, the CALFED agencies cooperatively implement the Program through their respective agency program authorities, e.g., Federal Central Valley Project Improvement Act, State Proposition 13, State Senate Bill 34, etc., and pertinent funding mechanisms.

In their totality, the individual actions of the CALFED agencies represent the projects and accomplishments shown throughout this report. Additionally, the report's accomplishments are in some instances cumulative in that actions and projects undertaken by CALFED agencies have been ongoing and often pre-date the formation of the CALFED Program.

A fundamental premise of the program is that the agencies can best meet their individual responsibilities by sharing information and cooperating with each other. The CALFED Program is not itself an agency and exercises no authority over the agencies. The program relies on the continuous cooperation of each participating agency, exercising its own legal authority.



The mission of the CALFED Bay-Delta Program is to develop and implement a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta.

TABLE OF CONTENTS

CALFED BAY-DELTA PROGRAM ANNUAL REPORT 2001

EXECUTIVE SUMMARY

Director's Message 1
Accomplishments in 2001 2
Program Highlights 4
Summary of Progress and Balance 12

INTRODUCTION

We All Depend on the Bay-Delta 14
Defining the Conflict 15
Resolving the Conflict 16
An Unprecedented Scope and Vision 17
Timeline 18
Shaping the Solution Through Partnerships 19

REGIONAL VIEW

The Sacramento Region 22
The Delta Region 24
Bay Area Region 26
San Joaquin Valley Region 28
Southern California Region 30

PROGRAM ELEMENTS

A Balanced Approach 32
Science 34
Water Management 37
Storage 40
Conveyance 43
Water Use Efficiency 45
Water Transfers 47
Ecosystem Restoration Program 49
Environmental Water Account 51
Watershed Management 53
Drinking Water Quality 55
Levee System Integrity 57

PROGRAM MANAGEMENT

Program Tracking and Accountability 59
Legislative Actions for 2001 61
Litigation Update 63
Fiscal Information 64
Grants and Loans Project List 69

REFERENCE DOCUMENTS 74

When the CALFED Bay-Delta Program concluded its five-year planning phase last year, many wondered if it could make the transition to a full-scale, cutting edge program capable of resolving ecosystem and water supply reliability problems in California.

As it completes its first full year of implementation, the CALFED Program is building a strong track record in several key areas. More than $500 million has been allocated for water supply, water quality, ecosystem restoration, and levee stability projects throughout California. CALFED's innovative Environmental Water Account provided nearly 300,000 acre-feet of water for environmental needs without reducing deliveries to cities and farms. And through state and federal dry year programs, nearly 300,000 acre-feet was made available to areas suffering from water shortages.

Regional strategies are also beginning to emerge. From the Sacramento Valley Water Management Agreement to water quality exchange programs in the Bay area and Southern California, local groups are developing collaborative, multiple purpose projects to meet their most pressing water needs. These strategies (described on pages 22-32) represent the future of CALFED—funding collaborative, locally-based initiatives to meet the Program's goals.

And perhaps most significant, the Science Program, led by Chief Scientist Sam Luoma, firmly established itself through a series of studies, workshops and panels as an independent, highly credible force for improving the scientific basis of all major projects and programs.

At the same time, however, a number of important program elements are behind schedule—primarily due to a lack of funding. Key projects to increase storage and improve water conveyance through the Bay-Delta system are behind, and the water use efficiency, water quality, watersheds, levee integrity, and science programs are underfunded.

The CALFED Program's commitment to a balanced and integrated approach is what sets this effort apart from any other large-scale restoration or water management program in the nation. It is what keeps diverse stakeholders engaged in the process; it is also what makes it so challenging at times to move ahead.

As we look forward to the year ahead, the CALFED agencies will seek to build upon the collaborative efforts that are well under way, and secure balanced funding from our state, federal, and local partners.

Patrick Wright
Director, CALFED Bay-Delta Program

CALFED BAY-DELTA PROGRAM ACCOMPLISHMENTS

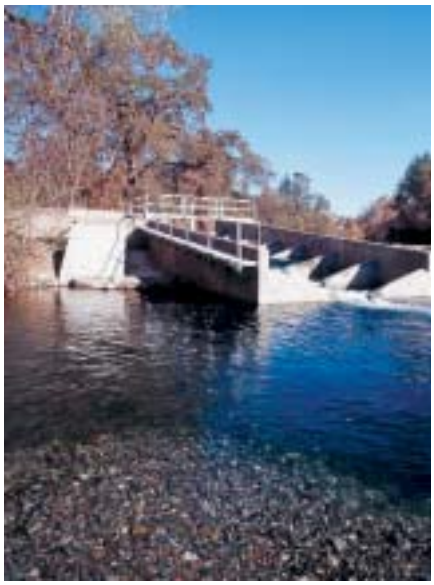
Six years after the signing of the Bay-Delta Accord and subsequent planning and public input, the Bay-Delta Program has met its first year implementation goals and objectives. Major Program accomplishments are listed below for Year 1, grouped by the four program objectives, science and overall program management:

WATER SUPPLY RELIABILITY

- Allocated approximately $200 million from Proposition 13 and other sources to local agencies for water supply, water quality and water use efficiency projects throughout the state
- Initiated or continued planning studies of 5 surface storage projects: Shasta enlargement; Sites Reservoir; In-Delta Storage; Los Vaqueros Expansion; and Upper San Joaquin Storage. Completed Memoranda of Understanding (MOU) with local partners for Sites Reservoir and Los Vaqueros Expansion planning studies
- Completed 16 Memoranda of Understanding or Letters of Intent with 30 local agencies throughout the state to study groundwater storage improvements
- Supported the Governor's Advisory Drought Planning Panel in developing a *Critical Water Shortage Contingency Plan*. Implemented state and federal dry year programs that provided nearly 300,000 acre-feet to areas suffering from water shortages
- Developed and implemented a comprehensive operations plan to coordinate actions and improve water supply reliability

ECOSYSTEM RESTORATION AND WATERSHEDS

- Since 1995, CALFED agencies and stakeholders have funded 326 ecosystem projects for $336 million including projects funded through the Anadromous Fish Restoration Program of the CVPIA. In 2001, $195 million was spent on activities including ecosystem water quality, ecosystem science, strategy planning, and 74 individual ecosystem restoration projects selected through a public solicitation process. Specific highlights include:
  - Began fish passage improvements along 182 river miles
  - Installed 64 fish screens at critical diversion points
  - Conducted 23 studies at $26.5 million for various effects on the Bay-Delta system
- Continued integration of the “single blueprint” for better coordination of ecosystem restoration activities between state and federal agencies
- Funded over 50 locally based watershed projects for $19 million, as well as provided funds in coordination with the Ecosystem Restoration Program to support projects in more than 50 watersheds
- Launched an innovative Environment Water Account that made available 287,000 acre-feet of water in the last year for fish without reducing allocations to farms and cities


Butte Creek Fish Passage

WATER QUALITY

- Developed grant programs for local agencies to address drinking water quality and watershed protection projects throughout the state
- Implemented seven projects in 2001 totaling $26 million for drinking water quality including salinity/selenium treatment and blending and exchanging source waters
- Developed solicitation and selection process for an additional $10 million in drinking water quality projects
- Implemented an ecosystem water quality project in 2001 in the Stockton Deep Water Ship Channel

LEVEE SYSTEM INTEGRITY

- Awarded more than $18 million in year 1 to improve levees on 50 Delta islands while $14.6 million was invested in special projects like ecosystem and levee restoration for water quality and flood protection

SCIENCE

- Conducted $2.5 million in Delta Cross Channel studies to evaluate fishery, water quality and water supply reliability issues
- Hosted the first CALFED Science Conference to engage the scientific community and the public and co-sponsored and participated in the October '01 State of the Estuary Conference
- Convened expert panel and conducted first annual review for the Environmental Water Account, as well as several scientific workshops and program reviews
- Supported and integrated the activities of the independent ecosystem science board, interagency ecological program, EWA science advisors and other independent peer review efforts
- Led the effort to develop an interagency Science Consortium to support common efforts to investigate and share information

PROGRAM MANAGEMENT

- Convened four public workshops throughout the state on Environmental Justice issues in an effort to identify any adverse impacts the Program may have on disadvantaged communities
- Developed new partnership with the Governor's Office for Innovation in Government to address streamlining traditional government business practices
- Established the Bay-Delta Public Advisory Committee, a new 28-member citizens group to advise state and federal agencies on Program implementation

2000-2001 CALFED WATER SUPPLY RELIABILITY HIGHLIGHTS

STRATEGY HIGHLIGHTS

Groundwater Grants & Loans
$23.5 million for 53 projects
(Prop. 13, Chapter 8 Article 4 and Chapter 9 Article 2 , and AB 303)

Groundwater MOUs
16 agreements with counties and local water management agencies

Water Use Efficiency Grants & Loans
$13.4 million for 66 projects

Interim Water Supply Grants
$72 million
(Prop. 13, Chapter 9 Article 4 includes groundwater, water use effciency and conveyance projects)

An on-line water market information and resource for water users

1. *Shasta Storage Evaluations*
2. *Sites Storage Memorandum of Understanding (MOU)*
3. *Delta Storage & Conveyance Evaluations*
4. *Environmental Water Account provided 287,000 acre-feet in transfers for fish without reducing allocations to farms and cities*
5. *Los Vaqueros Expansion Memorandum of Understanding*
6. *• Upper San Joaquin River Storage Evaluations*
   • MWDSC - Friant Water Quality Exchange Partnership
7. *LA urban runoff/groundwater study augmentation*
8. *State and federal dry year programs provided 298,000 acre-feet to water short areas*

New Construction Development

WATER SUPPLY RELIABILITY

PURPOSE

- Water Supply Reliability encompasses an array of projects and approaches to expand water supplies and ensure efficient use of the resource

GOALS

- Working with local and regional agencies, the Program has identified actions that could increase California water supplies by nearly 3 million acre-feet over the next 10 years—enough water to meet the needs of 6 million families annually

ACCOMPLISHMENTS

The CALFED Program made significant progress in the first year to improve California's water supply reliability by providing grants and loans totaling about $200 million which will improve statewide operational flexibility and increase water supply reliability and improve water quality

- **Storage**
  - Initiated or continued planning studies of 5 surface storage projects: Shasta enlargement; Sites Reservoir; In-Delta Storage; Los Vaqueros Expansion and Upper San Joaquin Storage. Completed Memoranda of Understanding with local partners for Sites Reservoir and Los Vaqueros Expansion planning studies
  - Completed 16 Memoranda of Understanding or Letters of Intent with 30 local agencies throughout the state to study groundwater storage improvements
  - Allocated $74 million in loans and grants to local agencies for planning and implementation of groundwater storage improvements
- **Conveyance**
  - Continued design of the Tracy Fish Test Facility to provide critical data on the effectiveness of screening state and federal water project facilities in the South Delta
  - Continued planning and design of permanent fish barriers to Clifton Court Forebay operable tidal and fish barriers in an effort to increase periodic pumping to 10,300 cubic feet per second
- **Transfers**
  - Provided public information and disclosure throughout the year for the "ON TAP" web site, an on-line water market information resource for water users
  - Oversaw development of a standardized method to establish transferable water
  - Continued meetings of interested stakeholders to address and resolve water transfer issues and explore changes to existing law
- **Water Use Efficiency**
  - Awarded $13.3 million for 65 projects—including 37 urban and 28 agricultural
  - Moving forward in defining "appropriate measurement" of water usage and certification of urban Best Management Practices
  - Continued refinement of quantifiable objectives regarding oversight and coordination for agricultural water use

ECOSYSTEM RESTORATION AND WATERSHED MANAGEMENT HIGHLIGHTS

ECOSYSTEM RESTORATION & WATERSHED HIGHLIGHTS

Ecosystem Restoration Grants to date
326 Projects for $336 million

- '97 Approved Projects
- '98 Approved Projects
- '99 Approved Projects
- '00 Approved Projects
- '01 Approved Projects

Watershed Management Grants
Over 50 projects approx. $19 million

- '01 Approved Projects

1. *Butte Creek*
2. *Battle Creek*
3. *Clear Creek*
4. *Sacramento River Conservation Area*
5. *Cosumnes River*
6. *Yolo Bypass*
7. *Tuolumne River*
8. *San Joaquin River*

Spring-Run Chinook Salmon in Butte Creek

ECOSYSTEM RESTORATION AND WATERSHED MANAGEMENT

PURPOSE

- Improving the health of the Bay-Delta system through restoring and protecting habitats and native species

GOALS

- **Ecosystem Restoration**
  - Recover at-risk species, rehabilitate natural hydrology processes to enhance ecosystem water quality, protect and restore functional habitats, reduce negative impacts of non-native species, and improve and maintain water sediment quality for a healthier ecosystem
- **Watershed Management**
  - Increase integration and collaboration of watershed programs with local leadership and continue to better coordinate local, state and federal watershed programs in order to achieve CALFED Program objectives

ACCOMPLISHMENTS

- **Ecosystem Restoration –** Since 1996, CALFED agencies have funded 326 ecosystem projects for $336 million including projects funded through the Anadromous Fish Restoration Program of the CVPIA. Of these projects, 74 were funded in 2001 for $115 million. Specific highlights include:
  - Began fish passage improvements along 182 river miles
  - Installed 64 fish screens at critical diversion points
  - Conducted 23 studies at $26.5 million for various effects on the Bay-Delta system
- **Watershed Management**
  - Funded over 50 locally based watershed projects for $19 million, as well as providing funds in coordination with the Ecosystem Restoration Program to support projects in more than 50 watersheds
  - Formed Interagency Watershed Advisory Team to provide assistance to local watershed groups

2000-2001 CALFED WATER QUALITY HIGHLIGHTS

ECOSYSTEM WATER SUPPLY GRANTS

Ecosystem Water Quality Grants
1 Project for $7 million

8. *Stockton Dissolved Oxygen Investigations*

DRINKING WATER QUALITY GRANTS

Drinking Water Quality Grants
7 Projects for $26 million

1. *Facilitate Water Quality Exchanges for So Cal*
2. *Desalination Research and Innovation Partnership (MWD)*
3. *Bay Area Blending/ Exchange*
4. *Veale-Byron Ag Drainage Reduction*
5. *Bay-Delta Evaluation of Water Quality*
6. *Real-Time Water Quality Monitoring*
7. *Salinity and Selenium Removal for Ag Drainage*

Water Treatment Plant

WATER QUALITY

PURPOSE

- Improve water quality from source to tap for the 22 million Californians whose drinking water supplies come from the Bay-Delta watershed

GOALS

- Collaborate and fund projects that seek to improve the quality of water at its source, seek advancements in treatment technology, research and perform monitoring of the Bay-Delta drinking water quality, continue to look for ways to better manage and deliver water

ACCOMPLISHMENTS

- Implemented seven projects in 2001 totaling $26 million for drinking water quality including salinity/selenium treatment and blending and exchanging source waters
- Developed solicitation and selection process for an additional $10 million in drinking water quality projects
- Worked with science program to facilitate studies and identify sources and solutions of low dissolved oxygen concentrations that hinder upstream migration of certain fish species and violate water quality standards in the Stockton Deep Water Ship Channel
- Implemented one project in 2001 to address ecosystem water quality in the Stockton Deep Water Ship Channel

2000-2001 CALFED DELTA LEVEE SYSTEM INTEGRITY

HIGHLIGHTS

- **CALFED Delta Levee Projects**

1. *McCormack-Williamson Tract (Reclamation District 2110)*
2. *Twitchell Island Levee Setback/Habitat Creation (Reclamation District 1601)*
3. *Decker Island Project*
4. *Franks Tract Channel Islands*

Widespread Flooding

LEVEE SYSTEM INTEGRITY

PURPOSE

- Improving Bay-Delta levees will provide flood protection, ecosystem benefits and protect water supplies needed for the environment, agriculture and urban users by reducing the threat of levee failure and seawater intrusion while lessening levee failures, damage to property and requests for emergency funds

GOALS

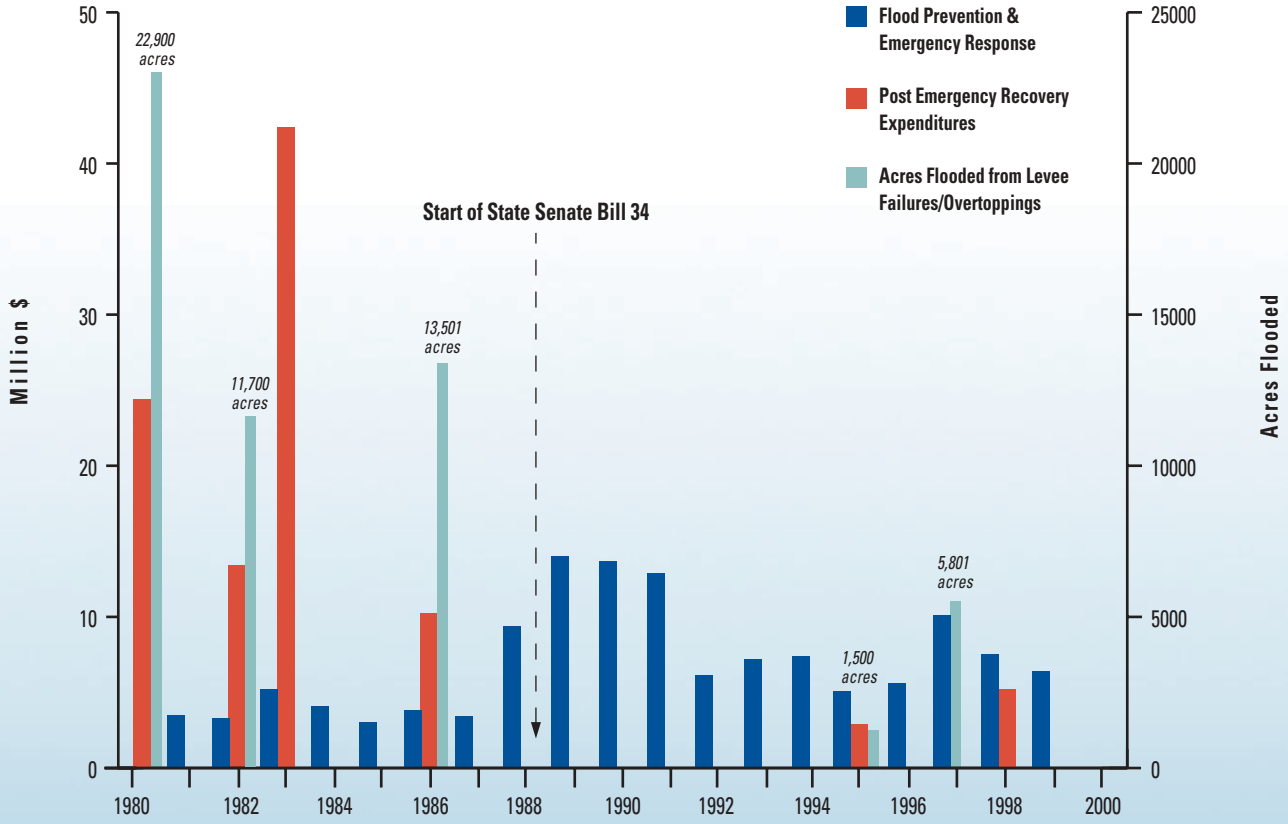
- Balance the need to improve levees to a higher standard for greater protection and fewer emergency responses, while maintaining habitat needs
- Develop adequate and reliable funding, as well as improve the permit process to increase levee stability in the Bay-Delta system

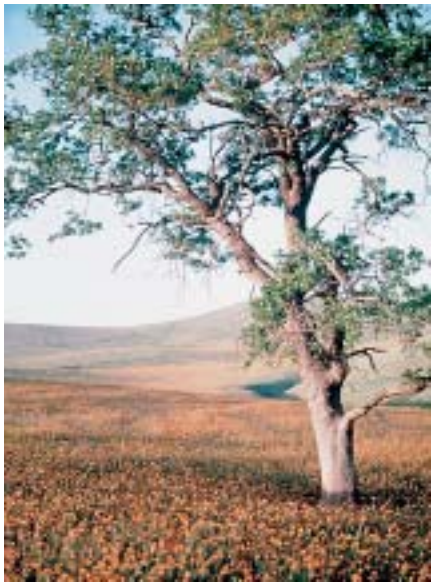
ACCOMPLISHMENTS

- Awarded more than $18 million in Year 1 to improve levees on 50 Delta islands while $14.6 million was invested in special projects like ecosystem and levee restoration for water quality and flood protection
- Efforts thus far to improve Delta levees have led to better water quality protection, enhanced habitat conditions, fewer requests for emergency funds and less acres of land flooded

DELTA LEVEE FLOOD COSTS

POST DISASTER ASSISTANCE COSTS AND ACRES FLOODED





SUMMARY OF PROGRESS AND BALANCE

As this year's report indicates, the CALFED Bay-Delta Program has made significant progress during its first year of implementation. State and federal CALFED agencies have secured and allocated more than $500 million in its first year, primarily from state bond funds. Key programs, such as ecosystem restoration, groundwater storage and recycling are meeting or exceeding their funding and program commitments. Milestones have been achieved in many key program areas, and tangible results of some projects already can be seen.

The following is a brief description of the status of each program element:

- **Storage**. Efforts to improve the use of groundwater storage are ahead of schedule, with $74 million provided to local agencies this year for planning and implementation of groundwater projects. The CALFED agencies signed agreements with local partners for Sites Reservoir and Los Vaqueros Expansion planning studies. Evaluation of a potential new off-stream storage reservoir at Sites and exploration of an In-Delta storage facility have missed some interim milestones, but increased funding in future years would allow planning studies for these projects to be completed on schedule. Studies of the expansion of Los Vaqueros Reservoir and Shasta Reservoir have also missed interim milestones due to lack of funding.
- **Conveyance**. Planning and design for installation of permanent fish barriers and other modifications in the Clifton Court Forebay are on track, and plans to increase periodic pumping are still on schedule. Although construction of the Tracy Fish Test Facility was delayed by six months due to the lack of funds, the project is back on course and expects to remain on schedule. However, the lack of funding has delayed a planned intertie between the State Water Project and the Central Valley Project near Tracy and the San Joaquin Flood Control Project.
- **Transfers**. The program is on track. Year 2 of implementation will focus on coordinating and streamlining the water transfer process and establishing the Water Transfer Information Clearinghouse.
- **Water Use Efficiency**. Efforts to define "appropriate measurement" of water usage, certify urban Best Management Practices and refine quantifiable objectives for water use efficiency are proceeding on schedule. More than $13 million in grants and loans was awarded for 65 projects in 2001, but participation in the loan program has been less than expected.
- **Ecosystem Restoration**. The program is on track, with over $150 million allocated in year 1 primarily from state and local funds as part of the "Single Blueprint" for ecosystem restoration and regulatory commitments. This is in addition to approximately $270 million of early implementation projects financed by the federal Bay-Delta Act and Category 3 funds in the prior years.
- **Environmental Water Account**. The EWA provided 287,000 acre-feet of water for environmental purposes during its first year of operation for Endangered Species Act purposes without reducing allocations to farmers and cities while meeting the commitments provided under the biological opinions (ESA) not to reduce water. The EWA expects to have Tier 3 water available for unforeseen emergencies in Year 2.

- **Watershed Management**. Progress has been made on outreach and technical assistance to local communities, with more than $18 million awarded this year to 54 grant recipients for watershed projects.
- **Drinking Water Quality**. Five early implementation projects—Bay Area Blending/Exchange, Veale-Byron Tract, Real-Time Water Quality Monitoring, Salinity/Selenium, and Delta Contaminant Sources/Load—are moving forward. About $20 million in grant funding is expected to be awarded for water quality projects in spring 2002.
- **Levees**. More than $18 million was awarded in Year 1 for levee maintenance on 50 Delta islands, while $14.6 million was invested in special projects for ecosystem, and levee restoration, water quality, flood protection and beneficial reuse and emergency response/preparedness. Although levee maintenance funding was available, the program is not funded at a level that allows progress toward Delta levee restoration. Efforts to improve all Delta levees to a base level of protection (Public Law 84-99 standard) are behind schedule, as are a planned Delta levee risk assessment and risk management plan, the Suisun Marsh levee program, and the dredge material reuse plan.
- **Science**. The Science Program conducted peer review for large projects and the EWA, conducted scientific workshops, provided oversight for the Delta Cross Channel investigations, and developed a framework for performance measures.
- **Program Oversight and Coordination**. This program element initially received adequate funding, but the state's hiring freeze and other general fund reductions will require the Program's oversight and coordination activities to be scaled back significantly. These activities include: regional coordination and implementation, environmental justice and other public outreach efforts, legal and litigation support, budget coordination and integration, finance planning and program tracking.

YEAR 1 CONCLUSION

In its first full year of implementation, the CALFED Bay-Delta Program moved forward aggressively to carry out the goals and objectives of the August 2000 Record of Decision. While many Program actions are just getting under way, significant progress has been made in every program area, but particularly those supported by state bond funds, including Groundwater Storage, Environmental Water Account, Ecosystem Restoration and Conveyance, and by federal Title XVI funds for water recycling. The Surface Storage, Levee, Water Quality, Science and Watershed Management Programs also made substantial progress at reduced funding levels.

YEAR 2 AND BEYOND

In year 2 (fiscal year 2001-'02), the Governor and the Legislature have contributed $508 million in funding for the Program, of which $62.6 million is from the state's general fund. Congress has approved $30 million in funding in the Energy and Water Development appropriations to support the goals of the Bay-Delta Program. Although the state and federal appropriations signal continued involvement and support in the effort, a larger amount of funding is required to meet the commitments across all program areas. Progress in Year 2 also will be impacted by a $20 million general fund reduction in the state CALFED budget and the moratorium on state hiring. These constraints on the ability to secure adequate staff and financial resources will translate into further delays in some program elements.

WE ALL DEPEND ON THE BAY-DELTA

The Bay-Delta provides drinking water for 22 million people. It supports California's trillion-dollar economy, including its $27 billion agricultural industry, and local homes and infrastructure. It is the largest estuary on the west coast—home to 750 plant and animal species—and it supports 80 percent of the state's commercial salmon fisheries.

DEFINING THE BAY-DELTA CONFLICT

California's Bay-Delta is an ecosystem in trouble:

- Straining under dual roles as critical habitat and water project crossroads, the Bay-Delta is in decline from decades of competing demands
- Today, it no longer functions as a healthy ecosystem or as a reliable source of water
- Several species—including Chinook salmon and steelhead trout—are in decline or endangered
- Water supplies are increasingly unreliable, jeopardizing the world's sixth-largest economy and 5 million acres of highly productive agricultural lands
- Water quality is degraded, making it difficult and expensive to meet drinking water standards

RESOLVING THE CONFLICT

The CALFED Bay-Delta Program is a cooperative effort involving more than 20 state and federal agencies. The Program will be implemented in stages over the next 30 years to solve California's environmental and water problems.

IMPLEMENTATION PRIORITIES INCLUDE:

- Apply independent scientific review and adaptive management to all major activities with accurate and frequent reports to the public
- Conduct early and continuous agency, stakeholder and public involvement
- Maintain a balanced and integrated Program
- Support local and regionally based strategies to achieve the Program's goals
- Develop performance standards and milestones for each program element
- Meet milestones and commitments in the Bay-Delta Plan

AN UNPRECEDENTED SCOPE AND VISION

- Strong commitment to independent scientific review, planning and tracking

- A coordinated approach by more than 20 state and federal agencies

- Eleven major program elements supporting multiple objectives

- Extensive public and local involvement in shaping each program element

- Funded projects in multiple watersheds encompassing more than 40,000 square miles—more than 70 percent of California's land

CALFED BAY-DELTA PROGRAM TIMELINE

December 1994
Bay-Delta Accord

November 1996
Prop 204 Funds Approved by Voters

March 2000
Prop 13 Funds Approved by Voters

June 2000
Framework Announced

July 2000
Year 1 Funding
State $516.4 million
Federal $56.2 million
Other $221.6 million

July 2000
Programmatic Environmental Document Finalized (EIS/EIR)

August 2000
Science Program Established

August 2000
Record of Decision Signed; CALFED Program Implementation Begins

July 2001
Year 2 Funding Begins
State $508.0 million
Federal $81.4 million
Other $262.8 million

November 2004
Major Decision and Review Points for Storage, Water Quality and Water Use Efficiency Elements

Completion of Stage 1 – First Seven Years
Foundation for Long Term Program Direction Completed

The CALFED Bay-Delta Program is a comprehensive collaborative effort that will take 30 years or more to complete.

Anderson Cottonwood Irrigation District Fsh Passage Improvement Project

SHAPING THE SOLUTION THROUGH PARTNERSHIPS

Extensive and sustained levels of public involvement have shaped every aspect of the CALFED Bay-Delta Program.

Partnerships with local communities and groups are being forged to combine resources, share knowledge and resolve problems at the local, regional and state level.

Merced River Restoration Project:

"You redesign the river, you restore it to a more naturally functioning (state), and hopefully you need less water to make the system work the way it's supposed to—everybody wins."
—Chris Robinson, General Partner Robinson Cattle Company

Potential Sites Reservoir Project:

"Local needs are going to be met first, you're going to have input as to how this is going to happen. We have a chance now to say what it is we want, what it is we need, and I think we darn well better get out and do that."
—Mary Wells, Farmer Sites, California

Upper Yuba River Studies Program:

"...In (Nevada) county, we have seized the opportunity that CALFED gave us. They've given us a lot of support and put a lot of money into the collaborative decision-making process in our own backyard."
—Elizabeth Martin, Nevada County Board of Supervisors Chairwoman

ACTIVITIES THAT SUPPORT PARTNERSHIPS

- Scoping Meetings
- Technical Workshops
- The Newly Formed Bay-Delta Public Advisory Committee and Related Work Group Meetings
- Media Events
- Annual Reports
- Newsletters
- Coordinating with Local Groups
- Environmental Justice
- Brochures
- Briefing Materials
- Comprehensive Web Site http://calfed.ca.gov
- Toll-free Public Information Telephone Line (800) 700-5752
- Presentations
- Technical Documents
- Tribal Participation
- Science Consortium

June 2001 Policy Group Meeting

Environmental Justice Workshop in Richmond

Delta Cross Channel News Coverage

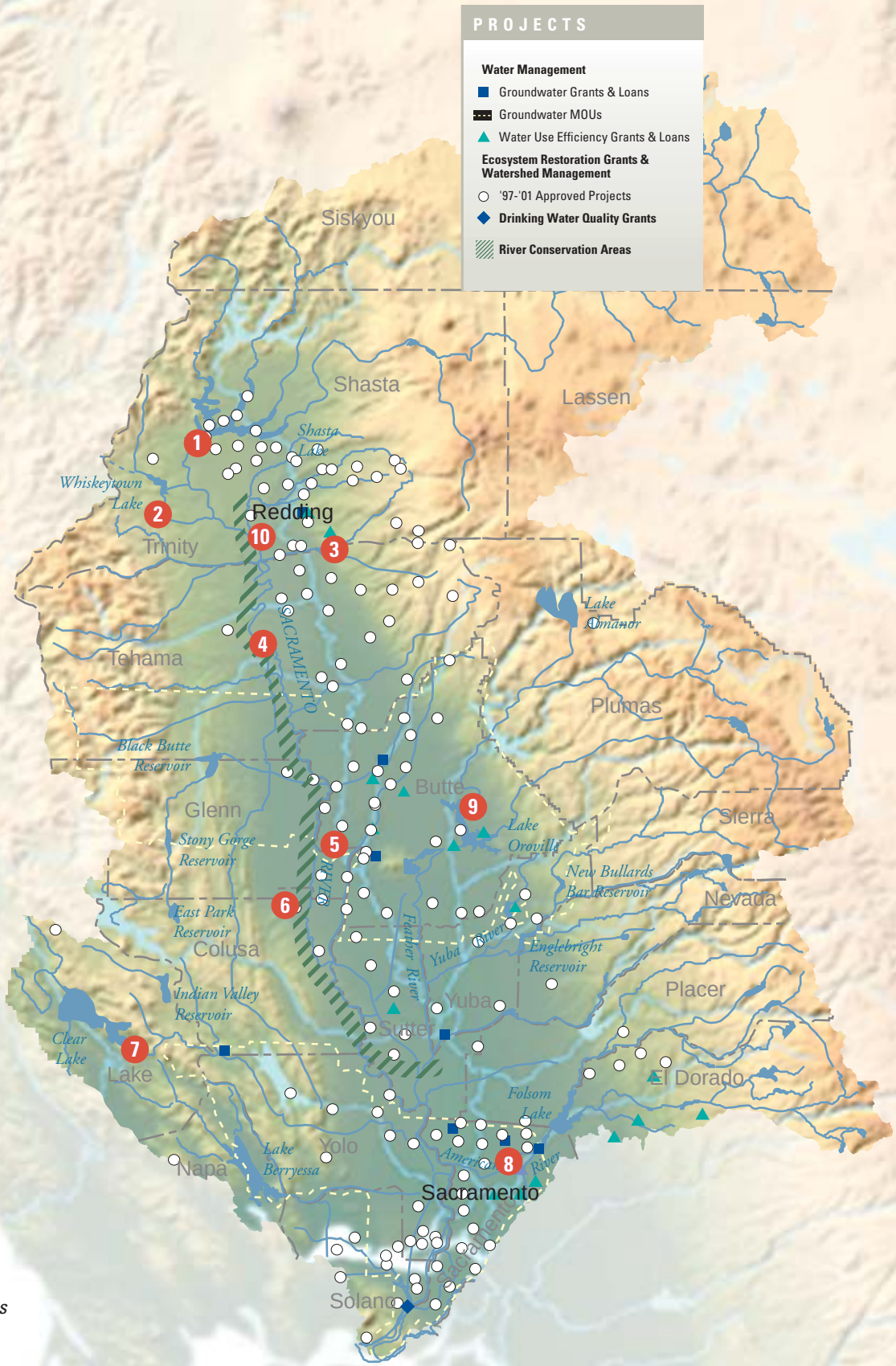
REGIONAL VIEW

The CALFED Agencies are investing in collaborative regional projects that provide local benefits while helping achieve overall Program objectives and commitments.

THE CALFED BAY-DELTA REGIONS

- The Sacramento Valley Region
- The Delta Region
- The Bay Region
- The San Joaquin Valley Region
- The Southern California Region

The Regional View provides information on regional CALFED Program highlights and accomplishments. Locally based projects have been funded through individual and collaborative resources by the CALFED agencies and stakeholders.



HIGHLIGHTS:

1. *Evaluate Enlargement of Shasta Dam*
2. *Saeltzer Dam Removal on Clear Creek*
3. *Battle Creek Fish Passage & Dam Removal*
4. *Improve Red Bluff Diversion Facilities*
5. *Sacramento River Conservation Area* (Continuous riparian corridor along 222 miles of the Sacramento River between Keswick and Verona)
6. *Sites Reservoir Memorandum of Understanding and Studies*
7. *Mercury Assessment—Clear Lake & Cache Creek*
8. *Lower American River Corridor Management Plan*
9. *Butte Creek Fish Passage and Dam Removal*
10. *Anderson-Cottonwood Irrigation District Fish Screens and Ladders*

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Participated in an agreement with local partners to study the 1.8 million acre-foot Sites Reservoir off-stream storage project
- Funded over 120 ecosystem restoration efforts to date, including 47 projects to improve fish passage on rivers and streams. A small dam that blocked salmon passage on Clear Creek was removed, and CALFED agencies provided more than $10 million for a state-of-the-art fish screen and ladder project for the Anderson-Cottonwood Irrigation District
- Dedicated more than $2 million for nine water use efficiency grants to help farmers irrigate more effectively and conserve water
- Signed agreements with six local water agencies to study groundwater storage improvements
- Funded over 10 groundwater loans and grants for recharge construction and storage pilot projects
- Worked with local stakeholders to determine feasibility of introducing Chinook salmon and Steelhead to the Upper Yuba River
- Began to assemble and interpret salmon data for individual tributaries and the Sacramento mainstem with the goal of relating trends in threatened groups to restoration actions

THE SACRAMENTO VALLEY REGION:

- Provides 60 percent, or 22 million acre-feet of the water flowing into the Delta
- Offers major habitat/spawning ground for several threatened and endangered fish species
- Contributes significantly to the state's farmlands and agricultural output

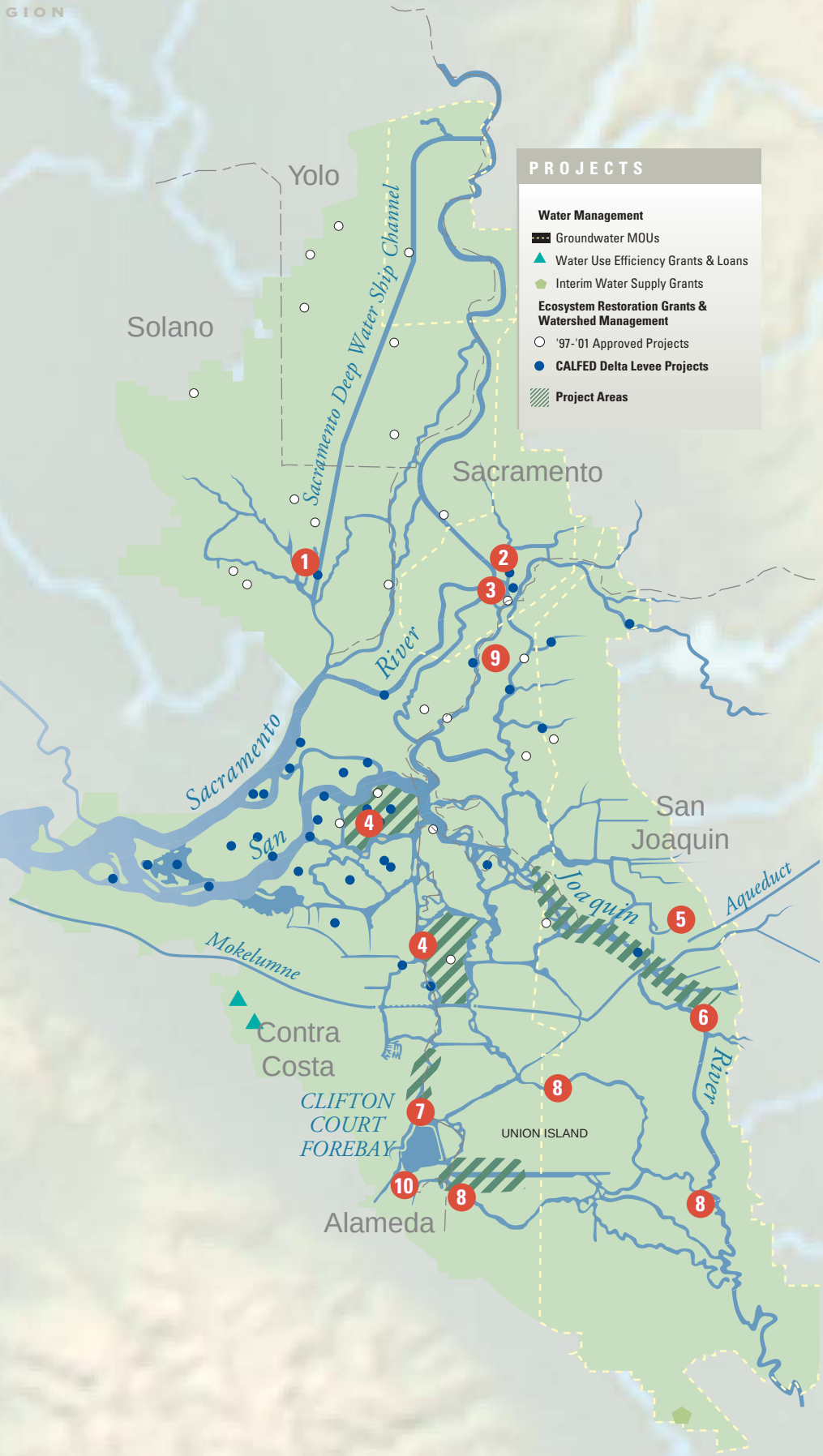
Red Bluff Diversion Dam

ACID Fish Screening and Ladders

YEAR 1 FUNDING
43 projects
$12,587,729.00

REGIONAL VIEW

THE DELTA REGION



HIGHLIGHTS:

1. *Yolo Bypass Habitat Restoration*
2. *McCormack Williamson Tract Habitat Restoration*
3. *Delta Cross Channel and Through Delta Facility Operational Studies*
4. *In Delta Storage (Potential) "Delta Wetlands Project"*
5. *Sub-Surface Drip Irrigation on Asparagus*
6. *Stockton Deep Water Dissolved Oxygen Investigation*
7. *Clifton Court Intake and Fish Screens*
8. *Fish & Flow Control Structures (Temporary / Permanent) & Dredging*
9. *Staten Island Restoration*
10. *Tracy Fish Test Facility*

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Invested $18 million to improve Delta levees on over 50 Delta islands resulting in better water-quality and flood protection and greatly enhanced habitat conditions
- Funded over 70 ecosystem restoration projects to date, including in-channel island restoration, fish screens, and riparian habitat restoration
- Funded seven watershed projects including flood protection, creek restoration strategies and stewardship
- Planned for construction of the Tracy Fish Test Facility to provide data on the effectiveness of screening facilities in the South Delta
- Worked on the South Delta Improvement Program to install permanent fish and flow control structures and modify Clifton Court Forebay to eventually increase periodic pumping to 10,300 cubic feet per second
- Began environmental documentation for North Delta Flood Protection improvements
- Explored options for addressing drainage problems in the Delta
- Continued work on the Delta Dredge and Reuse Strategy
- Continued work on developing practical ways to slow, stop, and reverse island subsidence
- Successfully implemented and reviewed an Environmental Water Account, designed to manage water operations so that they both improve water supply reliability and protect targeted fish species
- Initiated several studies:
  - Feasibility of a through-Delta diversion facility to the Sacramento River
  - Feasibility of alternatives for In-Delta storage
  - Operational studies to address fishery and water quality impacts
  - Approval to begin dissolved oxygen studies in the Stockton Deep Water Ship Channel
  - Sources and concentrations of contaminants in the Bay-Delta water
  - Evaluate factors influencing outcomes and impediments in restoring breached islands in the Delta
  - Identify mercury distributions and contamination patterns in the Delta

THE DELTA REGION:

- Up to 47 percent of the Delta's flow is diverted in dry years from the Delta for beneficial uses
- Supports 750 plant and animal species including 120 fish species
- Diversion point for irrigation water to California's $27 billion agricultural industry
- Contains the largest wetland habitat in the western United States

Delta Cross Channel

Tracy Fish Facility

YEAR 1 FUNDING
19 projects
5,916,272.00

REGIONAL VIEW

THE BAY REGION

HIGHLIGHTS:

1. Petaluma Marsh Expansion
2. Napa River Floodplain Restoration Project
3. Cullinan Ranch Project
4. Suisun Marsh Management and Restoration
5. Suisun Marsh Fish Screens
6. Los Vaqueros Expansion
7. Guadalupe River Restoration
8. San Pablo Baylands
9. Bay Area Blending/Exchange

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Completed a Memorandum of Understanding with local partners and initiated studies to evaluate the expansion of Los Vaqueros Reservoir
- Began studies on the feasibility of a San Luis Reservoir bypass to improve the quality of water imported to the Bay Area from the state and federal water projects
- Signed a Memorandum of Understanding and started feasibility studies for the Bay Area Blending and Exchange Study aimed at improving water quality by blending and exchanging source waters among local providers
- Hosted the first CALFED Bay-Delta Program Science Conference to engage the scientific community and the public. Co-sponsored and participated in the October 2001 State of the Estuary Conference
- Contributed to funding 40 ecosystem restoration projects to date, including Napa River floodplain restoration, fish screens in Suisun Marsh and improvements to the Petaluma Marsh
- Allocated nearly $2.5 million to provide rebates to Bay Area households that install ultra low-flow toilets
- Funded over five groundwater loans and grants for recharge construction and storage pilot projects
- Reviewed and supported plans for establishing a coordinated wetlands monitoring program in the Delta
- Reviewed and recommended future directions for the Bay Program of the Interagency Ecological Program, a premier aquatic monitoring program in the Bay
- Reviewed and began revision and multi-agency coordination of water quality monitoring conducted by the Interagency Ecological Program
- U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, Department of Fish and Game, Department of Water Resources and Suisun Resource Conservation District established a charter to begin work on a single blueprint for ecosystem restoration of Suisun Marsh

THE BAY REGION:

- The Bay and Delta form the west coast's largest estuary
- Drains more than 40 percent of the state's water
- Is America's fourth largest metropolitan area and location of Silicon Valley

Suisun Marsh

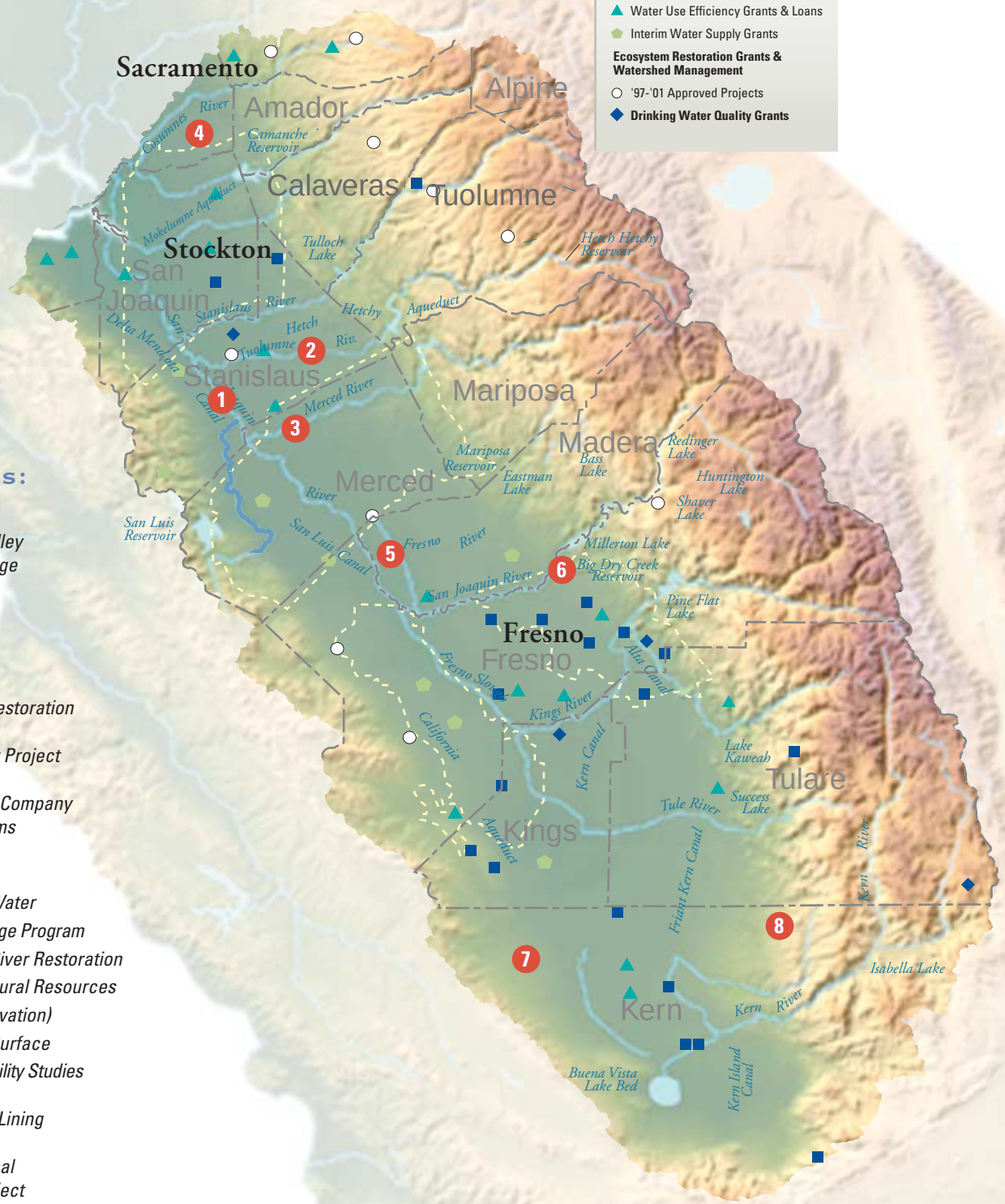
Los Vaqueros Reservoir

Recharge Pond

YEAR 1 FUNDING
17 projects
$5,916,354.00

REGIONAL VIEW

THE SAN JOAQUIN VALLEY REGION



HIGHLIGHTS:

1. San Joaquin Valley Regional Drainage Management
2. Tuolumne River Restoration
3. Merced River Restoration
4. Cosumnes River Project
5. Columbia Canal Company Irrigation Systems Improvement
6. • Friant-MWD Water Quality Exchange Program
   • San Joaquin River Restoration (Friant and Natural Resources District Conservation)
   • San Joaquin Surface Storage Feasibility Studies
7. Lost Hills Canal Lining
8. Kern-Tulare Canal Automation Project

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Funded 51 ecosystem restoration projects, including improving riparian and stream habitats on the San Joaquin, Merced, Tuolumne and Stanislaus rivers
- Approved $3.4 million in funding for 11 water use efficiency projects to help farmers save water
- Began feasibility studies for the lower San Joaquin River flood protection improvements
- Launched the Salinity and Selenium Project to build a pilot plant to treat agricultural drainage and produce water for reuse
- Signed agreements with four local water agencies to study groundwater-storage improvements
- Explored water quality exchange partnership between Friant Water Users Association and Metropolitan Water District
- Funded over 10 groundwater loans and grants for recharge construction and storage pilot projects
- Began evaluation of selenium effects from San Joaquin River discharges to the Delta
- Implemented state and federal dry year programs to provide over 200,000 acre-feet to water short areas

THE SAN JOAQUIN VALLEY:

- Produces 45 percent of the nation's fruits and vegetables
- Is the drainage for seven major Sierra Nevada rivers draining into it
- Anticipates population to double over the next 20 years

Water Use Efficiency for Irrigation

Merced River Restoration

Agriculture Production

YEAR 1 FUNDING
39 projects
$24,423,489.00

REGIONAL VIEW

THE SOUTHERN CALIFORNIA REGION

PROJECTS

Water Management

- Groundwater Grants & Loans
- Groundwater MOUs
- Water Use Efficiency Grants & Loans
- Interim Water Supply Grants

Watershed Management

- Approved Projects

HIGHLIGHTS:

1. *Water Conservation Recycling and Groundwater Desalination in San Diego*

2. *Conservation Rebate Programs*
   - *Commerical*
   - *Industrial*
   - *Institutional*

3. *Landscape Water Consumption Controller*

4. *Chino Basin Water Use Efficiency*

5. *Storm Water Augmentation Study*

6. *Wetland Restoration on the Santa Ana River*

7. *Desalination Research and Innovation Partnership (DRIP)*

8. *Water Quality Exchange Partnership with Friant Water District (MWD/Friant)*

REGIONAL ACCOMPLISHMENTS
CALFED AGENCIES:

- Signed agreements with five local water agencies to study ways to improve groundwater storage
- Provided nearly $1.9 million for 14 water use efficiency programs in urban areas
- Began a desalination research and innovation partnership at Metropolitan Water District resulting in three desalting facilities and final design plans for three more
- Funded over 20 groundwater loans and grants for recharge construction and storage pilot projects
- Funded restoration of wetlands and river systems to protect endangered and threatened fish in Southern California, reducing the demand for water from the Bay-Delta ecosystem
- Implemented state and federal dry year programs to provide approximately 80,000 acre-feet to water short areas

BENEFITS FLOW SOUTH AND NORTH

Implementation of CALFED's projects in the Southern California Region will:

- Produce more reliable, higher-quality water statewide
- Reduce the need for additional water from the Bay-Delta to meet the growing needs of the region
- Enhance ecosystem restoration in the Bay-Delta and in the region
- Expand groundwater storage and pumping capability
- Use water efficiently through conservation, recycling and water management

SOUTHERN CALIFORNIA REGION:

- Inland Southern California is among the fastest growing regions in North America
- Southland water users conserve 480,000 acre-feet of water a year and produce 230,000 acre-feet of recycled water—reducing the demand for additional Bay-Delta water and meeting the needs of a growing population
- Southern California's large contribution to the state's economy depends on a more reliable water supply, some of which is imported from the Delta

High Efficiency Clothes Washer Program

Santa Ana River in Riverside,
Arundo and Wetlands Improvement

YEAR 1 FUNDING
36 projects
$20,973,705.00

A BALANCED APPROACH

Launched in the summer of 2000 with broad public support, the CALFED Bay-Delta Program Record of Decision is a balanced, comprehensive approach to reduce conflicts over limited water supplies and to address California's long-term water needs.

The Bay-Delta Program is unique in its approach to solving California's environmental and water problems. The Bay-Delta solutions address four interrelated, interdependent program areas concurrently.

RESOURCE MANAGEMENT GOALS

Four resource management goals are implemented through 11 major program elements.

PROGRAM ELEMENTS

- Science
- Water Management
- Storage
- Conveyance
- Water Use Efficiency
- Water Transfers
- Ecosystem Restoration
- Environmental Water Account
- Watershed Management
- Drinking Water Quality
- Levee System Integrity

Fish are Dyed for Delta Cross Channel Studies

CALFED SCIENCE PROGRAM

Integrating world-class science and peer review into every aspect of the Bay-Delta Program, CALFED is developing the best scientific information possible to guide decisions and evaluate actions that are critical to its success.

GOALS

- To establish a body of knowledge that is unbiased, relevant, authoritative and integrated, while communicating that knowledge to the scientific community, agency managers, stakeholders and the public
- Establish protocols and incorporate independent peer review into all Program activities
- Develop science-based performance measures for each CALFED program

ACCOMPLISHMENTS

- Developed directed research processes to identify and provide independent peer review of CALFED research needs
- Developed plans for each program element in order to incorporate peer review into activities
- Initiated and compiled performance measures within and across individual programs
- Hosted the first CALFED Science Conference to engage the scientific community and the public and co-sponsored and participated in the October '01 State of the Estuary Conference
- Funded The Estuary Newsletter's publication of a Delta Cross Channel fact sheet
- Convened expert panel and conducted first annual review for the Environmental Water Account, as well as several scientific workshops and program reviews
- Supported and integrated the activities of the independent ecosystem science board, interagency ecological program, EWA science advisors and other independent peer review efforts
- Completed or solicited for several monitoring plans to identify existing needs
- Began applying adaptive management within the program
- Published two reviews of ecosystem restoration indicators
- Led the effort to develop an interagency Science Consortium to support common efforts to investigate and share information
- Continued operational studies to address fishery and water quality impacts of Delta Cross Channel (DCC)

Turlock Irrigation District Project Event

State of the Estuary Conference
Posterboard Session

PRIORITIES

- The Science Program's priorities include:
  - Conduct adaptive management experiments
  - Build population models for at-risk species
  - Establish integrated science programs in complicated field settings
  - Compare relative effectiveness of different restoration strategies
  - Understand intertwined implications of all CALFED actions
  - Advance the scientific basis of regulatory activities
  - Develop performance measures
  - Coordinate and extend existing monitoring
  - Increase relevant scientific analyses of existing data

Delta Cross Channel Studies