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Implementation Status of the CALFED Bay-Delta Program, Years 1 through 5

Prepared by the
California Department of Finance
Performance Review Unit

NOVEMBER 2005

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DEPARTMENT OF FINANCE
OFFICE OF THE DIRECTOR

ARNOLD SCHWARZENEGGER, GOVERNOR
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January 27, 2006

Honorable Michael Chrisman, Secretary
Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

Dear Mr. Chrisman:

I am transmitting to you the attached final report on the implementation status of the CALFED Bay-Delta Program (CALFED) through its first five years. This report is in response to the Administration's commitment in the 2005-06 May Revision to conduct an independent program and fiscal review of CALFED to ensure accountability, highlight accomplishments, determine program status, and guide adjustments. This report constitutes the program review component of the independent review; I will transmit the fiscal review component separately.

CALFED represents one of the largest and most challenging water management and ecosystem restoration endeavors in the nation. This program began implementation five years ago as an historic undertaking to address California's longstanding, complex, and contentious water policy issues through a coordinated and cooperative enterprise involving a consortium of 25 state and federal agencies. Our review was performed at a time when questions had been raised about the future of the program in light of constrained state resources, the decline of sensitive fish populations, and concerns over water exports from the Delta. The review was not intended to address these larger policy issues, but focused on the status of the program's implementation. We believe that our review has been useful to the overall effort to revitalize CALFED, and will be useful to budget and policy decision makers in shaping the future of CALFED.

In summary, our review found that the 11 program elements that comprise CALFED varied widely in the level of progress achieved. We found areas with significant accomplishments, such as increased groundwater storage, support of local watershed efforts, and maintenance of water supplies through the Environmental Water Account, as well as areas where progress to date is promising for longer term results, such as ecosystem restoration. We also found several areas where significant progress was lacking, such as levee improvements and increased export of water from the Delta. Further, we identified factors that affected the degree of implementation achieved as well as issues that may warrant further attention.

The final version of the report includes an appendix containing your response to our draft report, as well as feedback received from implementing agencies and stakeholders. These letters were received following release of the draft report issued on November 10, 2005. Also included are our responses to the feedback received.

If you have any questions, please contact Tom Dithridge, Program Budget Manager, at (916) 445-3274.

Sincerely,

Vincent P. Brown

for MICHAEL C. GENEST
Director

Attachment

cc: Mr. Ryan Broddrick, Director, Department of Fish and Game
Ms. Celeste Cantú, Executive Director, State Water Resources Control Board
Mr. Joe Grindstaff, Director, California Bay-Delta Authority
Mr. Lester Snow, Director, Department of Water Resources

Implementation Status of the CALFED Bay-Delta Program, Years 1 through 5

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Executive Summary

Introduction

The CALFED Bay-Delta Program (CALFED), a consortium of 12 state and 13 federal agencies, was created in 1994 to address a number of water management and ecosystem restoration issues in the state's Bay-Delta region and reduce conflict among stakeholders. During legislative hearings on the 2005-06 budget, there was criticism of CALFED from the Legislature and stakeholders, who raised concern about whether the program was achieving its goals and objectives. This report was prepared by the Department of Finance, Performance Review Unit, to satisfy the Administration's commitment for an independent program review focusing on the status of the program's implementation through the first five years, from 2000-01 through 2004-05.

Methodology, Limitations, and Organization

Our methodology consisted of reviewing program documents and interviewing program staff in the California Bay-Delta Authority (Authority) and the consortium agencies to identify program commitments and accomplishments. This process was challenging because many documents were not consistent with each other, were internally inconsistent, and/or had varying degrees of support throughout the program. An additional challenge was posed by the inherent complexity of water management and ecosystem restoration programs. Limitations of our review included the short time available for completing the report, and the fact that the review was largely administrative and necessarily subjective. The report is organized to include a section with introductory information; a section with background information; sections addressing program description, findings, and observations for each program element; a section addressing program balance; appendices with detailed information on funding and projects, performance measures, and accomplishments for each program element; and a glossary.

Recent Events

The recent decline of pelagic fish in the Delta has affected the CALFED program and is reflected in our review. The state Court of Appeal's recent decision has raised questions about the key document governing CALFED implementation, but has no bearing on our review of the program's implementation status.

Background

Section II, Background, provides basic information about CALFED, including an explanation of terms and an introduction to items discussed in subsequent sections. This section presents the goals of the CALFED program and the 11 program elements addressed in our review, the program's legislative and funding history, key documents used in the program, and the role of science and performance measures. One of the most important documents for the program has been the Record of Decision (ROD), which is an environmental document that specifies commitments for the 30-year length of the program as well as for Stage 1, which covers the first 7 years. Another important document is the Conservation Agreement, which is a regulatory document that specifies there will be no reductions in water exported from the Delta as long as CALFED complies with requirements for endangered species. The annual reports and multi-year program plans convey achievements of the program.

Funding

According to the *2004 Annual Report*, the funding received for CALFED during its first five years was 71 percent of the amount originally estimated in 2000. The percentage varied by program element from 18 percent to 171 percent. The original estimate assumed that approximately equal amounts of funding would be received from state government, the federal government, and users/local matching funds. In actuality, federal funds were only 6 percent of the total amount received; the amounts provided by the state and users/local match were approximately equal. The funding information cited in the report is based on CALFED's records,[1] which have not been verified or validated in this report. Please refer to the fiscal review conducted by the Department of Finance, Office of State Audits and Evaluations, for further information regarding CALFED's fiscal records.

1 The term "CALFED's records" refers to financial information from the Authority as well as from implementing agencies in some cases.

Science and Performance Measures

Science plays an important role in CALFED, because much of the knowledge needed to restore and improve Bay-Delta systems is unknown. CALFED was designed to make significant investments in research, particularly in the early years, in order to lay the foundation for future actions. Performance measurement is widely discussed within CALFED, and several efforts have been undertaken to establish performance measures, but much work remains to develop and implement meaningful performance measures for nearly all program elements.

Findings and Observations

Implementation Status

For each program element, we assessed the extent to which it had implemented its program commitments for Stage 1 (which were contained in the ROD for all program elements and in various other documents depending on the program element) as well as its long-term goals and objectives.

Storage Program. Little progress has been made on the ROD actions for surface storage, but good progress has been made on groundwater storage. It is premature to assess progress toward the long-term goals for water supply reliability, water quality, ecosystem restoration, and increased operational flexibility.

Conveyance Program. Key ROD actions (remaining after transfer of three actions to other program elements) are behind schedule; in addition, due to the recent decline of pelagic fish in the Delta, only two projects can go forward in the South Delta. Three of five program objectives have been met, but little or no progress has been made on the long-term goals.

Water Transfer Program. The majority of ROD actions are completed or ongoing (excluding several actions that are no longer applicable). The creation of the "On-Tap" website was a significant accomplishment, but the website was terminated in July 2005 when its funding was eliminated. The program element appears to have made progress toward its goals.

Environmental Water Account. The ROD actions to provide a specified total amount of water assets generally appear to have been fulfilled, although it is unclear whether the assets were sufficient to protect fish during one out of four years. It is

uncertain whether the requirement for $50 million in annual funding has been met, due to variations in the fiscal records. The program element has met the goal of maintaining water deliveries, but it is unknown whether the goal for fish protection has been met, partly because the program is too new for a meaningful evaluation, and partly because of the recent decline of pelagic fish in the Delta, for which the cause is not known.

Water Use Efficiency Program. Progress on ROD actions is mixed. The program activities are consistent with the goal, but it is premature to assess progress. Progress is being made on the majority of the objectives. The program is not working toward the achievement of a specified amount of water savings.

Drinking Water Quality Program. Progress has been made on all ROD actions except one, and progress has been mixed. It is premature to know whether the long-term goal will be met, but the program element appears to be making progress in that direction.

Levee System Integrity Program. There has been no significant progress on any of the ROD actions; however, several of the ROD actions may no longer be applicable. The program's activities generally appear to be consistent with its goal to maintain and improve Delta levees; however, given the technical complexity and scientific uncertainty related to Delta levees, it is unclear whether this program is making meaningful progress toward its long-term goal.

Ecosystem Restoration Program. Although this program element reported that 80 percent of its Stage 1 milestones were on schedule, weaknesses in the Milestones Assessment led us to conclude that the program may have difficulty in fully achieving the milestones by the end of Stage 1, because activities will need to be completed, not merely initiated. Progress has been made toward all ROD actions, but progress has been mixed. The regulatory funding commitment of at least $150 million per year was met cumulatively, though not met for each year. The program appears to be working actively toward most of its goals, and progress is generally evident but mixed; early results of a few restoration projects are promising for species recovery.

Watershed Management. This program element has completed or continues to implement, as appropriate, its ROD actions and program plan commitments. The program element appears to be meeting its goals.

Science Program. There has been no significant progress on key ROD actions, including coordination of monitoring and research programs, refining predictive

models, developing performance measures, and annual reporting of specified status and effectiveness information. As such, it is unclear whether the Science Program is making meaningful progress toward its long-term goal.

Oversight and Coordination. Most of the activities are consistent with the ROD's implementation commitments and the Authority's legislative mandates. Effectiveness has been mixed for several reasons, including: (1) the Authority's statutory authority is unclear; (2) it is sometimes unclear which entity has responsibility for specific functions, which impedes accountability; (3) while the Authority effectively provides interagency coordination and transparency, the time and resources required may result in inefficiencies; and (4) there are weaknesses in communication and fiscal tracking.

Program Balance

We also assessed the extent to which implementation to date has been balanced among the program elements, as required by statute. Assessing program balance is difficult, because the nature and magnitude of the activities vary widely among the program elements, and because each program element has numerous components in varying stages of progress. As such, assessment is necessarily subjective. Nevertheless, it was apparent that some program elements had achieved more progress than others in terms of implementing their program commitments, and from this perspective, implementation to date has not been balanced. We grouped the program elements according to whether they had made the most progress (high), least progress (low), or were in the middle or mixed (medium), as follows:

Table ES-1. Relative Implementation Status by Program Element

Relative Implementation Status	Program Element
High	Water Transfer Program Watershed Management
Medium	Storage Program Environmental Water Account Water Use Efficiency Program Drinking Water Quality Program Ecosystem Restoration Program Oversight and Coordination
Low	Conveyance Program Levee System Integrity Program Science Program

Numerous factors affected the relative implementation status of the program elements, and are discussed briefly below:

Technical Complexity. Program elements with high technical complexity found that feasibility studies and other activities sometimes required more time than originally anticipated. Some projects were delayed or suspended because project feasibility became questionable, or costs were determined to be higher than anticipated.

Resources. Problems included inadequate staffing, inadequate funding for projects, earmarked funding, and restrictions on bond funding for monitoring and assessment.

Scientific Uncertainty. Scientific uncertainties that have hindered implementation include insufficient information about drinking water contaminants, uncertainty regarding how to ensure levee stability, and not knowing the cause of the recent pelagic fish decline in the Delta.

Stakeholder Conflicts. Stakeholder conflicts have resulted in significant delays in some areas.

Administration and Management. Several program elements experienced significant delays in contracting, including difficulties with the contract administration process as well as an administrative freeze on contracts. In some cases, management weaknesses, such as inadequate interagency coordination or lack of direction, resulted in slow or delayed action.

Problems with the ROD. Some of the schedules and milestones in the ROD were overly optimistic, and some ROD actions have become obsolete due to changed circumstances or advances in knowledge.

Other Issues

Our review also identified other issues for each program element that we believe may warrant further analysis. The following issues were common throughout the program elements:

Communication. Problems were observed for all program elements. In some cases, goals and objectives differed among the various guiding documents, or the documents were internally inconsistent, creating confusion regarding what the program was trying to accomplish. In several cases, planning and reporting documents did not convey significant changes in program direction. We found several instances of documents being used in draft form for which no final version

was produced. Documents communicating performance were often not clear, comprehensive, consistent, or accurate. For these reasons, the annual reports and multi-year program plans do not appear to provide sufficient information to decision makers and stakeholders.

Performance Measures. We found only one program element that has developed a full set of performance measures and uses them. Another program element developed performance measures, but has not yet used them. Some programs track performance of individual projects, but have not transformed these activity indicators into broader measures of achievement for the program element. Most program elements had some use of input and output measures, although in two program elements the measures are of questionable usefulness. Outcome measures remain problematic for most program elements.

Interagency Coordination. There appeared to be issues with interagency coordination in six program elements. In some cases, the management staff at the Authority did not appear actively engaged with implementing agency staff. In one case, there was no manager at the Authority. In another case, implementing agency staff indicated that they did not view the ROD as a guiding document nor perceive their agency to be an implementing agency. We also observed that although the Authority provides an effective forum for the CALFED agencies to meet and discuss interrelated program issues, the time and resources required for interagency coordination as well as consensus building may result in inefficiencies in the implementation process.

Priorities. We had concerns about program priorities in six program elements. In many cases, the program element did not appear to have sufficient focus for achieving its Stage 1 commitments within the amount of funding available. In several cases, the problem appeared to be lack of an effective implementation strategy. In other cases, the problem was caused by funding mechanisms that dictated specific projects or types of projects. The bond funds generally were available for construction and implementation, and there was limited funding available for monitoring and assessment, which are important for CALFED's science-based activities. Competitive grant funds generally were awarded based on the project proposals received, rather than on highest priority or contribution to program goals.

Program Records. For most program elements, we found differences among the fiscal records of implementing agencies, Authority program staff, and Authority fiscal staff. There may be reconciling factors; however, those issues were outside

the scope of our review. Some program elements had project databases, which also appeared to have weaknesses in that it was difficult for the program staff to produce consistent programmatic information. In one program element, categories used by implementing agencies to track expenditures were not consistent with the ROD and the Authority.

Program Assessment. Several program elements have conducted assessments of program progress or implementation status, usually in response to a statutory or other regulatory requirement or ROD action. Most of these program assessments were conducted directly by program staff, although in at least one program (Drinking Water Quality Program), an independent consultant was hired. Because assessments conducted directly by program staff lack independence, the credibility and usefulness may be diminished. For example, in at least one program (Ecosystem Restoration Program), our review indicates that the findings of a self-assessment appeared to be overly optimistic. On the other hand, due to the highly technical nature of the programs, assessing program progress or implementation status is difficult without a sufficient level of program expertise. For example, program staff indicate that, after eight months of reviewing the Drinking Water Quality Program, the independent consultant had to develop the conclusions about progress on the ROD actions jointly with the program staff because the consultant did not have the expertise to do so independently.

I. Introduction

Purpose of the Review

The CALFED Bay-Delta Program (CALFED), a consortium of 12 state and 13 federal agencies, was created in 1994 to address a number of water management and ecosystem restoration issues in the state's Bay-Delta region and to reduce conflict among stakeholders. After several years of planning, the program began implementation in 2000-01 (known as Year 1). The first 7 years of implementation (i.e., through 2006-07) are considered Stage 1 of a 30-year program.

During legislative hearings on the 2005-06 budget, there was criticism of CALFED from the Legislature and stakeholders who raised concern about whether the program was achieving its goals and objectives. The Legislature approved a budget for CALFED after the Administration committed to the following three-point plan for CALFED:

- An independent program and fiscal review of CALFED to ensure accountability, highlight accomplishments, determine program status, and guide adjustments.
- A re-focusing of program priorities.
- A 10-year financing/action plan.

This report represents the program review component of the independent review. The purpose of this review is to document the status of the program's implementation, for Years 1 through 5, and discuss which goals and objectives have been met and where performance has been measured and reported to date. This review also considers whether the program's implementation has been balanced.

Methodology

For each program element of CALFED, we reviewed program documents and interviewed program staff to determine goals and objectives as well as program commitments for Stage 1. This process was challenging because many documents were not consistent with each other, were internally inconsistent, and/or had varying degrees of support throughout the program. For each program element, we determined which documents appeared to be the most relevant, appropriate, and reasonable to use in determining program commitments and stakeholder expectations. Next, we identified the measures used to report performance and the accomplishments reported. Finally, we assessed the extent to which each program element has met its goals, objectives, and Stage 1 commitments. Our review concludes with findings and observations on implementation status as well as other issues that may warrant further analyses.

Limitations of the Review

Our task was complicated by the need to complete our review in a relatively short time in order to be useful to the concurrent CALFED revitalization effort, and to budget and policy decision makers. The inherent complexity of water management and ecosystem restoration programs as well as the limited time available required us to restrict our scope to determining the status of the program's implementation.

Another limitation of our review is that it is largely administrative, in that it focuses primarily on whether the program met its various commitments, and less on considering the relative value of each commitment in programmatic terms. The review was based on desk research and discussions with program staff. Further, our review is necessarily subjective. Many of the program commitments do not have quantifiable or concrete outcomes, and many commitments require numerous sequential actions over an extended period of time. Determining whether a commitment was met was often an exercise of judgment.

Finally, our expertise is program analysis and evaluation, not water policy. Our objective was to understand the program and issues, and to present the information in a manner that is useful and understandable to the lay reader.

Organization of the Report

Section II, Background, provides basic information about CALFED, including an explanation of terms and an introduction to items discussed in subsequent sections. Sections III through XIII address each program element individually, including discussions of goals and program commitments as well as findings and observations about implementation status and other issues. Section XIV addresses the extent to which implementation has been balanced among the program elements. Appendices A through K provide a detailed discussion of each program element's funding, performance measures, and accomplishments that support the findings and observations in Sections III through XIII. Appendix L provides a glossary describing many of the technical terms used throughout the CALFED program as well as an explanation of acronyms. Appendix M contains the Resources Agency's response to our draft report issued on November 10, 2005, as well as feedback received from implementing agencies and stakeholders. Also included are the Department of Finance's responses to the feedback submitted directly to us.

Recent Events

Decline of Pelagic Fish—In fall 2004, routine surveys indicated that pelagic fish populations in the Delta, which had been declining for several years, were at unprecedented low levels. Pelagic fish in the Delta inhabit the moving water column, and include Delta smelt, striped bass, and the threadfin shad. In summer 2005, state and federal agencies launched a multi-year research program to determine the cause of the decline. The fish decline raised questions about the effectiveness and prudence of some CALFED activities, and certain conveyance projects were suspended pending completion of the study. These changes are reflected in our assessment of the program's implementation.

Court Decision—Recently, the state Court of Appeal issued a decision raising questions about the key document governing implementation of the CALFED program. The court's decision has no bearing on our review of the status of the program's implementation through the first five years.

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II. Background

This section provides basic information about CALFED, including an explanation of terms and an introduction to items discussed in subsequent sections.

CALFED Goals and Objectives

CALFED's mission 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 System."[2] The program has four objectives:

- Provide good water quality for all uses.
- Improve fish and wildlife habitat and ecological functions.
- Reduce the gap between water supplies and projected demand.
- Reduce the risks from deteriorating levees.

The four objectives are carried out through 11 program elements, each of which includes multiple objectives. The various program documents contain slight differences in the list of program elements.[3] The following list reflects the program elements addressed in our review:

- Storage
- Conveyance
- Water Transfer
- Environmental Water Account
- Water Use Efficiency

2 http://calwater.ca.gov/AboutCalfed/CALFEDProgram.shtml, visited June 7, 2005.

3 Variations of this list are found on the Authority's website (www.calwater.ca.gov), Water Code Section 79402, and various program documents. Our review and this report are based on CALFED's *2004 Annual Report* (see Table of Contents on p. 1).

- Drinking Water Quality
- Levee System Integrity
- Ecosystem Restoration
- Watershed Management
- Science
- Oversight and Coordination

Enabling Legislation

Effective January 2003, the Legislature adopted the California Bay-Delta Authority Act (CBDA Act) that enacted the CALFED program as state policy.[4] The CBDA Act also created the California Bay-Delta Authority (Authority) as a coordinating and oversight agency to "ensure efficiency, transparency, and accountability in decision making."[5] The CBDA Act set forth the duties of the Authority, defined the program elements, and identified implementing state and federal agencies for each program element. The CBDA Act requires the Authority to promote "balanced implementation"[6] of the CALFED program, such that progress on all program elements advances at a similar pace.

The CBDA Act sets forth a process under which the implementing agencies submit annual program plans and proposed budgets, and work with the Authority to develop an integrated budget request that promotes balanced implementation. The CBDA Act specifies, however, that final decision-making authority rests with the individual implementing agencies. The annual program plans are multi-year plans that describe the annual and cumulative progress of each program element and set forth actions and funding assumptions for the remaining years of Stage 1. The CBDA Act also requires the Authority to issue an annual report by December 15 describing the implementation status of all program elements during the prior year. These annual reports highlight program accomplishments and provide funding information.

In 2004, Congress enacted the Water Supply, Reliability, and Environmental Improvement Act, which adopted the CALFED plan as a framework for federal agencies.[7]

4 Chapter 812, Statutes of 2002. This legislation added a new division to the Water Code, beginning with Section 79400.
5 Water Code Section 79401(h).
6 "Balanced implementation" is statutorily defined in Water Code Section 79402(b). Refer to Section XIV, Program Balance, for a detailed discussion.
7 Public Law 108-361, Title I.

Funding

In 2000, the CALFED program was estimated to cost a total of $30 billion over the 30-year period. Stage 1 costs were estimated at $8.5 billion, including costs for the first five years estimated to be $5.3 billion. The Stage 1 estimates included the shares of costs expected from state funds, federal funds, and users/local matching grants, based on a preliminary assessment of program beneficiaries; however, many of these assumptions have not been realized.

According to the *2004 Annual Report*, funds received for the first five years total $3.9 billion, or 71 percent of the amount estimated. (See Tables II-1 and II-2 on the following pages for additional fiscal detail.) It is our understanding that the *2004 Annual Report* includes a mixture of actual expenditures as well as encumbrances and appropriations that have not yet been encumbered. These amounts are often inconsistent with more updated records maintained by the Authority's Finance and Policy Unit as well as fiscal information maintained by implementing agency and Authority program staff. It must be emphasized that the funding information cited here and discussed in subsequent sections is based on CALFED's records,[8] which have not been verified or validated in this report. Please refer to the fiscal review conducted by the Department of Finance, Office of State Audits and Evaluations, for further information regarding fiscal records.

8 The term "CALFED's records" refers to financial information from the California Bay-Delta Authority staff as well as from implementing agencies in some cases.

Table II-1. Original Estimated Costs for Years 1 through 7 (Stage 1)
Dollars in Millions

Program Element	Total Estimated Costs for Years 1 - 7	Assumed Distribution of Costs by Fund Source			
		State	Federal	Users/Local	Total
Ecosystem Restoration	$1,326	$513 39%	$513 39%	$300 23%	$1,326 100%
Water Use Efficiency	$2,956	$759 26%	$759 26%	$1,438 49%	$2,956 100%
Water Transfer	$15	$7.5 50%	$7.5 50%	- -	$15 100%
Watershed Management	$300	$138 46%	$138 46%	$24 8%	$300 100%
Water Quality	$955	$290 30%	$290 30%	$375 39%	$955 100%
Levee System Integrity	$444	$88 20%	$142 32%	$34 8%	$264 59%
Water Storage	$1,425	$237 17%	$237 17%	$200 14%	$674 47%
Water Conveyance	$747	$366 49%	$188 25%	$193 26%	$747 100%
Science	$300	$150 50%	$150 50%	- -	$300 100%
Totals	$8,467	$2,549 30%	$2,425 29%	$2,564 30%	$7,537 89%

Numbers may not add due to rounding.

Source: CALFED Bay-Delta Program, *Implementation Plan, Final Programmatic EIS/EIR Technical Appendix,* July 2000, page 5-65.

Notes:

1. The estimated costs for Ecosystem Restoration included $200 million for the Environmental Water Account for four years.
2. The estimated costs were not fully distributed to an assumed fund source for the Levee System Integrity and Water Storage program elements. Thus, the total costs distributed by fund source are less than the total estimated costs of the program.
3. The dollar amounts displayed in the above estimates were based on many assumptions regarding fund sources. The reader is referred to the original document for detailed footnotes regarding assumptions.
4. The program elements in the original cost estimate, which was published in 2000, differ from the current list of program elements.

Table II-2. Estimated Costs and Actual Funds Received for Years 1 through 5

Dollars in Millions

Program Element	Estimated Costs for Years 1 - 5	Actual Funds Received for Years 1 - 5	Percent of Estimated Costs That Were Funded	Distribution of Funds Received in Years 1 - 5, by Fund Source			
				State	Federal	Users/ Local	Total
Ecosystem Restoration	$785	$783	100%	$541 69%	$38 5%	$204 26%	$783 100%
Environmental Water Account	$250	$248	99%	$229 92%	$19 8%	- -	$248 100%
Water Use Efficiency	$1,674	$869	52%	$216 25%	$102 12%	$552 63%	$869 100%
Water Transfer	$13	$2.6	20%	$2.4 92%	0.2 8%	- -	$2.6 100%
Watershed Management	$220	$135	61%	$108 80%	$3 2%	$24 18%	$135 100%
Water Quality	$611	$111	18%	$100 90%	$2 2%	$9 8%	$111 100%
Levee System Integrity	$314	$108	34%	$89 82%	$1 1%	$18 17%	$108 100%
Water Storage	$737	$1,260	171%	$367 29%	$30 2%	$863 69%	$1,260 100%
Water Conveyance	$589	$131	22%	$56 43%	$11 8%	$64 49%	$131 100%
Science	$200	$114	57%	$59 51%	$34 30%	$21 19%	$114 100%
Water Supply Reliability	-	$29	n/a	$29 100%	- -	- -	$29 100%
Oversight and Coordination	-	$49	n/a	$43 88%	$6 12%	- -	$49 100%
Totals	$5,393	$3,841	71%	$1,839 48%	$246 6%	$1,756 46%	$3,841 100%

Numbers may not add due to rounding.

Sources: (1) CALFED Bay-Delta Program, *Implementation Plan, Final Programmatic EIS/EIR Technical Appendix*, July 2000, page 5-65. (2) CALFED Bay-Delta Program, *2004 Annual Report,* pages 56-57.

Notes:

1. The dollar amounts included in funds received are explained in detail in the original document. The reader is referred to the *2004 Annual Report* for detailed footnotes.
2. Water Supply Reliability is not currently considered a program element, but reflects funds received that have not yet been allocated to a specific program element.
3. Oversight and Coordination was not an original program element but was added after the ROD was issued.
4. The estimated cost for the Environmental Water Account was initially included within Ecosystem Restoration. The original amount included was $200 million, or $50 million per year for the first four years only, based on the initial commitment in the Conservation Agreement; however, the Conservation Agreement was extended through 2007, bringing the five-year estimated cost to $250 million. The total amount for Years 1-5 was increased by $50 million to reflect this adjustment.
5. Program documents indicate that the Levee System Integrity Program received 34 percent of the original cost estimate; however, our review indicates that the program received 69 percent of the original cost estimate. See Appendix G, Levee System Integrity Program, for a detailed explanation.
6. The actual funds received for Years 1-5 of $114 million for the Science Program include the Interagency Ecological Program. Of this amount, the Authority's Science Program received $57 million.

Key Documents

From 1994 through 2000, the CALFED agencies developed a plan to address Bay-Delta problems over a 30-year period and prepared environmental documents. In the summer of 2000, CALFED issued several key documents to initiate the implementation phase of the program. The documents were developed at different times by different groups, evolved over time, and are not completely consistent. Our review drew significantly from the following documents:

- **Framework.** *California's Water Future: A Framework for Action,* (June 9, 2000). Through the Bay-Delta Advisory Council, state and federal agencies worked with stakeholders and the public to shape options for a long-term restoration and management plan for the Bay-Delta into a comprehensive plan, which is commonly called the Framework. This document combines a specific set of actions, with a vision for how they fit together to create a balanced solution.
- **Program Plans and Implementation Plan.** The final programmatic environmental impact statement/environmental impact report (EIS/EIR) included several plans as technical appendices. For many of the 11 program elements, an extensive program plan was developed for addressing Bay-Delta problems over the 30-year period. An implementation plan was developed outlining regulatory, governance, and finance issues, as well as early implementation actions. The plans are dated July 2000.
- **Programmatic Record of Decision (ROD).** On August 28, 2000, the CALFED agencies issued the ROD, which is the culmination of state and federal environmental processes. The ROD reflects the selection of the long-term plan, i.e., the Preferred Program Alternative, which includes specific actions and an implementation strategy. The ROD also includes a Plan for Action, which sets forth actions that are to be implemented in Stage 1, in order to build the foundation for subsequent years. Some of the actions identified were "complementary actions" that were included in the Framework but not analyzed in the final EIS/EIR; decisions regarding implementation of the complementary actions were to be made after further study and environmental review.

  Although the ROD was a primary guiding document in our review, it posed some problems in determining program expectations. The two sections of the ROD, i.e., the Preferred Program Alternative and the Plan for Action, were not always consistent. Also, some of the ROD actions were poor guides because they were not well written or because circumstances had changed. In addition, we learned

that some of the ROD actions had been underway for several years before the ROD was issued and were considered easily achievable, while other ROD actions were very ambitious and would be difficult to achieve during Stage 1.

- **Multi-Species Conservation Strategy and Conservation Agreement.** The Multi-Species Conservation Strategy (MSCS) is a plan covering multiple species adopted by ten federal and state CALFED agencies in 2000 in order to comply with the Federal Endangered Species Act, the California Endangered Species Act, and California's Natural Community Conservation Planning Act. The Conservation Agreement[9] among the ten federal and state agencies defines the parties' commitments with respect to the MSCS; the term of the agreement is 30 years. The Conservation Agreement includes regulatory commitments, which specify that there will be no reductions in water exported from the Delta as long as CALFED complies with endangered species laws and specified program requirements. The program requirements include: (1) maintenance of annual funding of at least $150 million for the Ecosystem Restoration Program and $50 million for the Environmental Water Account; (2) implementation of the MSCS as described in the EIS/EIR; and (3) implementation of the Environmental Water Account as specified in other documents. The regulatory commitments originally expired September 30, 2004, but were extended (after demonstration of sufficient progress) to December 31, 2007.
- **Annual Reports and Multi-Year Program Plans.** In addition to the above key documents from 2000, the annual reports and annual multi-year program plans are key documents for understanding the status of the program's implementation.

Science

Science plays a fundamental role in the CALFED program because much of the knowledge needed to restore and improve Bay-Delta systems is yet to be discovered. CALFED was designed to make significant investments in research, particularly in the early years, in order to lay the foundation for future actions. In addition, the program has committed to employing "adaptive management," which is a systematic means of making changes to the program as additional knowledge is gained. Our review does not address specifically whether adaptive management has been used in the CALFED program.

9 CALFED Bay-Delta Program, *Conservation Agreement Regarding Multi-Species Conservation Strategy,* August 28, 2000, pp. 6 and 9. (Note: This document is Attachment 5 to the ROD.)

Performance Measures

Performance measurement is much discussed within CALFED, and reporting on performance is attempted annually in the annual reports and multi-year program plans. Currently, all program elements use input measures, which report administrative measures such as the number of projects and dollars invested. Some of the programs use output measures, which report program products such as levee miles improved or acres of habitat restored. Few of the programs use outcome measures, which would describe the system-wide changes effected by the program toward its mission such as changes in water supply reliability or ecosystem health. Much work remains to develop and implement meaningful performance measures for nearly all program elements.

Our review indicates that the Science Program has the lead responsibility to develop performance measures for the program elements; several efforts have been initiated, but none have been completed. Further, the various efforts to develop performance measures for the CALFED program have used differing methodologies and terminologies, resulting in confusion and frustration among program staff, both within the Authority as well as in implementing agencies. Additionally, it has not been clear to CALFED program staff whether the development of performance measures is the responsibility of the Science Program or the individual program elements.

The performance measure efforts undertaken to date use various terminology to describe different types of performance measures. The latest effort includes three general "classes" of indicators, as follows: (1) Administrative Indicators (inputs); (2) Driver Indicators (outputs and external factors affecting the program); and (3) Outcome Indicators.[10] An earlier effort included three "levels," which are still used by some program elements, as follows: Level 1 (inputs); Level 2 (outputs), and Level 3 (outcomes).

10 Science Program, "Framework for indicators for science, management and adaptive management in the CALFED Bay-Delta Program," provided on August 11, 2005.

III. Storage Program

I. Program Description

The Storage Program element consists of efforts to increase both surface and groundwater storage capacity, and to improve the management of groundwater, in conjunction with surface water, to maximize water supply reliability, help improve water quality, and support fish restoration efforts. The implementing agencies are the Department of Water Resources (DWR) and US Bureau of Reclamation (USBR).

A. Goals

The *Multi-Year Program Plan (Years 6-9)* states "the goal of the Storage Program is to increase water supply reliability, improve water quality, and support ecosystem restoration through expanded storage capacity and increased operational flexibility."[11] The Authority's website states the following as goals for the Storage Program, although they appear to be objectives rather than goals, and they duplicate the actions in the ROD:[12]

- Provide financial and technical assistance to implement 1/2 million to 1 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 ROD.

B. Program Commitments for Stage 1

ROD actions for Stage 1 include studies for all the potential surface storage projects shown in Table III-1, and initial construction for the three "specific study"

11 CALFED Bay-Delta Program, *Storage Program Multi-Year Program Plan (Years 6-9)*, July 2005, p. 2.
12 http://calwater.ca.gov/Programs/Storage/Storage.shtml, visited June 20, 2005.

projects. Potential storage capacity at completion of the projects is estimated in thousand acre-feet (TAF). Additionally, the ROD included an action for groundwater storage projects to achieve a combined storage capacity of 500-1,000 TAF by the end of Stage 1, and an action for groundwater management.

Table III-1. Storage Projects and Potential Capacity

Storage Projects	Potential Storage Capacity (TAF)
Surface Storage Projects	
■ Specific Study Projects	
• In-Delta Storage	250
• Enlarged Shasta	300
• Expanded Los Vaqueros	400
■ Projects Requiring Further Consideration	
• North-of-Delta Offstream Storage/Sites Reservoir	1,900
• Upper San Joaquin River	250 – 700
■ Complementary Action Project (transferred from Conveyance Program)[12]	
• San Luis Reservoir	200
Groundwater Storage Projects	500 – 1,000
Total	**3,800 – 4,750**

II. Findings and Observations

See Appendix A, Storage Program, for a detailed discussion supporting the findings and observations.

13 The San Luis Reservoir Low Point Improvement Project was transferred from the Conveyance Program to the Storage Program in January 2005 to better reflect its goals of water quality and water supply reliability.

A. Implementation Status

ROD Actions

- Surface storage is behind schedule on five of six projects, and the remaining project, In-Delta, has been discontinued. In-Delta was discontinued due to a lack of federal, state, and local interest as well as studies indicating that project costs were higher and benefits were lower than originally estimated. Our review indicates that the ROD actions for surface storage were not realistic, particularly in relation to the time necessary to complete studies. Additionally, there has been difficulty in generating local interest due to a more preferable alternative—groundwater storage (see discussion below).
- Groundwater storage is on schedule for meeting its goal of facilitating and funding 500-1,000 TAF of storage capacity. Local agencies have provided significant funding for groundwater storage projects due to availability of state matching funds (grants and loans). Additionally, groundwater storage is less expensive and faster to implement than surface storage, and local agencies have control over groundwater storage, whereas surface storage is controlled by one or more local, state, and/or federal agencies.
- The ROD action related to groundwater management was completed. This action led to development of legislation that provided new requirements for groundwater management plans and made the award of grant funding contingent upon compliance.

Goals and Objectives. It is premature to assess the extent to which the Storage Program's long-term goals to increase water supply reliability, improve water quality, and support ecosystem restoration have been achieved. Although the Storage Program's objectives to expand storage capacity and increase operational flexibility have not been met through surface storage projects, as no additional surface storage capacity has been added, groundwater storage projects have expanded storage capacity. It is unlikely, however, that operational flexibility has increased substantially, as added storage capacity is still in an early phase.

B. Other Issues

Our review also identified the following issues in the Storage Program that may warrant further analysis:

Communication

- Communication to stakeholders regarding the Storage Program's goals and performance is not always clear, comprehensive, or accurate. For example, the *Multi-Year Program Plan (Years 6-9)* indicates that the current schedule for completion of the environmental review and documentation for the In-Delta surface storage project is December 2006 if funding is available; however, discussions with program staff indicate that this project has been discontinued.
- Although the ROD included five surface storage projects, there was a distinction made between the three well-developed projects for which construction was expected to begin in Stage 1 (In-Delta, Enlarged Shasta, and Los Vaqueros Reservoir projects) and the two projects that required extensive additional development before a decision on implementation would be reached (North-of-Delta Offstream Storage/Sites Reservoir and Upper San Joaquin River projects). Program documents that reported program performance, however, make no mention of such a distinction, potentially resulting in confusion to stakeholders about the Storage Program's Stage 1 priorities and activities.
- There appears to be confusion among program staff regarding the numeric target for groundwater storage. The ROD expresses the target in terms of "storage capacity"; however, the DWR has interpreted the ROD to mean "yield" (yield is often deemed to be one-third of storage capacity).

Interagency Coordination. It did not appear that the Storage Program management at the Authority was actively engaged with the implementing agencies, which may hinder the Authority's ability to provide adequate oversight and coordination of the Storage Program's activities.

Performance Measures. The Storage Program has pursued several efforts to gauge performance of storage projects; however, it is not clear how these various efforts will be translated into performance measures for the Storage Program. To date, only input and output measures have been developed. Outcome measures such as yield (relative to increased water supply) and chloride content (relative to water quality) have been explored as part of the process to ultimately implement the "beneficiaries pay" principle, but outcome measures have not been completed or implemented.

Priorities. The priorities for the Storage Program are determined by the funding provided for specified projects by Congress and the Legislature, which results in a risk that federal and state funding will not be provided to complete the projects specified by the ROD. For example, the In-Delta project currently does not have federal or state funding; as such, the project has been discontinued.

IV. Conveyance Program

I. Program Description

Water is conveyed from the Delta to 23 million Californians by the State Water Project (SWP), operated by the Department of Water Resources (DWR), and the Central Valley Project (CVP), operated by the US Bureau of Reclamation (USBR). The Conveyance Program element supports CALFED's objective for water supply reliability by implementing modifications to the current Delta water conveyance system (e.g., increasing pumping, installing screens and barriers to protect fish, installing barriers to benefit agricultural users, improving flood protection, and constructing interties [i.e., channels]). The program is divided into improvements in the South Delta and the North Delta. The implementing agencies are the DWR and USBR.

A. Goals and Objectives

The goal of the Conveyance Program, as stated in the ROD (which provides the most complete explanation), is "to identify and implement conveyance modifications that will improve water supply reliability for in-Delta and export users, support continuous improvement in drinking water quality, and complement ecosystem restoration."[14] In addition, the Authority's website and program actions express a further goal of flood protection. Objectives for export and environmental purposes address "conveyance improvements needed to improve the pumping capabilities of SWP export facilities to, as follows:

1. Restore water project reliability and operational flexibility;
2. Allow the Environmental Water Account (EWA) to transfer and store water;

14 CALFED Bay-Delta Program, *Programmatic Record of Decision*, August, 28, 2000, p. 48.

3. Allow a reliable water transfer market to function;

4. Allow SWP facilities to convey larger amounts of water during periods of high quality water in the Delta to improve water quality for urban use; and

5. Provide greater capability for SWP facilities to be used to improve the reliability of CVP supplies for both its water users and wildlife refuges."[15]

The EWA and the water transfer market are separate program elements within CALFED. Refer to Section VI, Environmental Water Account, and Section V, Water Transfer Program, for discussions of those program elements.

B. Program Commitments for Stage 1

The Conveyance Program is guided by the ROD, although some actions have been transferred to other program elements. Specific actions in the ROD for the South Delta were taken from, or are related to, the South Delta Improvements Program (SDIP), which had been under development for a number of years prior to the ROD and continues to exist within the DWR. Most of the actions involved or required environmental studies; construction for several projects was scheduled to begin during Years 1 through 5 if supported by the studies. The ROD actions are summarized below.

South Delta. These ROD actions address the needs of the export projects (SWP and CVP), the Delta ecosystem, and local (in-Delta) agricultural water users.

1. Increase SWP pumping from the current limit of 6,680 cubic feet per second (cfs) to 8,500 cfs during the March 15 to December 15 period; and modify existing pumping criteria from December 15 to March 15 to allow greater use of SWP export capacity.

2. Increase SWP pumping to the maximum capability of 10,300 cfs. This action is to be accomplished subsequent to the two following actions:

   A. Design and construct new fish screens at the Clifton Court Forebay and Tracy pumping plant facilities to allow the export facilities to pump at full capacity more regularly.

   B. Dredge and install operable barriers (also known as gates) to ensure water of adequate quantity and quality to agricultural diverters within the South Delta.

15 Ibid.

3. Design and construct floodway improvements on the lower San Joaquin River to provide conveyance, flood control, and ecosystem benefits.

4. Reduce agricultural drainage in the Delta (this action has been moved to the Drinking Water Quality Program).

North Delta. These ROD actions seek to improve flood protection and conveyance facilities for water quality and fisheries, and avoid water supply disruptions.

5. Evaluate and implement improved operational procedures for the Delta Cross Channel to address fishery and water quality concerns.

6. Simultaneously evaluate a screened through-Delta facility on the Sacramento River of up to 4,000 cfs.

7. Design and construct floodway improvements in the North Delta (such as on the lower Mokelumne River and Georgiana Slough) to provide conveyance, flood control, and ecosystem benefits.

Other. These actions were in the ROD, but were not categorized as South or North Delta.

8. Pursue two intertie projects between the SWP and CVP facilities.

9. Install and operate temporary barriers in the South Delta until gates are constructed (complementary action).

10. Take actions to protect navigation and protect local diverters in the South Delta who are not adequately protected by the temporary barriers (complementary action).

11. Coordinate with the US Army Corps of Engineers (USACE) and the Reclamation Board on their development of the Sacramento and San Joaquin Comprehensive Study (complementary action).

12. Seek State Water Resources Control Board (SWRCB) approval of Joint Point of Diversion and share water derived from Joint Point of Diversion between the CVP and the EWA.[16]

16 CALFED Bay-Delta Program, *Programmatic Record of Decision*, August 28, 2000, p. 41. The responsibility of the Conveyance Program for this action is ambiguous in the ROD; however, the *Implementation Plan* clearly specifies that this action is part of the Conveyance Program. See CALFED Bay-Delta Program, *Implementation Plan*, *Final Programmatic EIS/EIR Technical Appendix,* July 2000, p. 3-18.

13. Build a bypass canal to the San Felipe Unit at the San Luis Reservoir (complementary action; has been moved to the Storage Program).

14. Facilitate water quality exchanges and similar programs to make high quality Sierra Nevada water in the eastern San Joaquin Valley available to urban Southern California interests (complementary action; has been moved to the Drinking Water Quality Program).

II. Findings and Observations

See Appendix B, Conveyance Program, for a detailed discussion supporting the findings and observations.

A. Implementation Status

ROD Actions

- The Conveyance Program is behind schedule on 7 key ROD actions, as follows:
  - It has not increased SWP pumping per ROD actions #1 and #2. Design of new fish screens at the Tracy and Clifton Court Forebay pumping plants (#2A) has been suspended due to high costs and feasibility concerns. The permanent gates project (#2B) is behind schedule.
  - The program has not yet designed floodway improvements in the South or North Delta (#3 and #7). It is our understanding that delays primarily reflect lower funding than anticipated, lack of staffing, and lack of agreement on project design.
  - Evaluation of improved operational procedures for the Delta Cross Channel (#5) and the screened through-Delta facility on the Sacramento River (#6) are behind schedule due to the need for numerous contracts and additional time needed to complete studies.
  - The aqueduct intertie is behind schedule, while the intake intertie is currently suspended (#8).
  - In addition, due to a recent decline in pelagic fish populations, no changes can be made to the South Delta conveyance system except to construct the permanent gates and the aqueduct intertie near Tracy until a cause for the

fish decline is determined. It is expected that the cause for the fish decline may not be determined until 2009.

- Two ROD actions are ongoing or on schedule. The ongoing actions include the Temporary Barrier Program (TBP) (#9), and protections to other water users that the TBP does not reach (#10); these programs were established in 1991.
- One ROD action is partly completed. The Joint Point of Diversion (#12) has been approved for two out of three components.
- One ROD action, the comprehensive study of the Sacramento and San Joaquin River watersheds to improve flood control efforts (#11), has not been addressed.
- Three actions were moved to other programs (#4, #13, and #14).

Goals. Little or no progress has been made toward the Conveyance Program's long-term goals to increase water supply reliability, improve drinking water quality, complement ecosystem restoration, and improve flood protection.

Objectives

1. The objective of restoring water project reliability and operational flexibility has not been met. Results primarily would have come from ROD actions that addressed improvements on the SWP to increase pumping and construction of interties, which are behind schedule.

2, 3. The objectives have been met to allow the EWA to store water and to allow a reliable water transfer market to function.

4. The objective to improve water quality has not been met. Results would have come from the ROD actions discussed above (Objective #1), plus the actions related to the Delta Cross Channel and the screened through-Delta facility on the Sacramento River, which are behind schedule.

5. The objective to provide SWP facilities to be used to improve reliability of CVP supplies for water users and wildlife refuges has been met.

B. Other Issues

Our review also identified the following issues in the Conveyance Program that may warrant further analysis:

Communication. Communication to stakeholders regarding the Conveyance Program's goals and performance is relatively good; however, there are two examples where progress on ROD actions was not reported (Sacramento and San Joaquin Comprehensive Study, and Joint Point of Diversion for the SWP and CVP).

Performance Measures. Efforts have been undertaken by the Science Program and the Conveyance Program to develop performance measures. Although the Conveyance Program reports some input and output measures, it does not have meaningful outcome measures at this time.

V. Water Transfer Program

I. Program Description

The Water Transfer Program element supports CALFED's objective for water supply reliability. Water transfers involve moving water between users on a voluntary and compensated basis, and contribute to the effectiveness of water management within the state. The Water Transfer Program provides a framework of administrative actions, policies, and processes that facilitate the water transfer market, helping to match water demand with water sources of the appropriate quality, and at the same time protect third parties from potential unintended negative consequences. The primary suppliers are agricultural water districts, with Central Valley farmers typically accounting for the majority of all sales. Purchases are made by other farmers, state agencies for environmental water uses, and municipal agencies. The implementing agencies are the Department of Water Resources (DWR), State Water Resources Control Board (SWRCB), and US Bureau of Reclamation (USBR).

A. Background

The DWR has facilitated water transfers since the late 1980s. When CALFED was implemented in 1994 and the ROD subsequently issued in 2000, the goals and objectives of DWR's existing water transfers program were to be subsumed into CALFED's Water Transfer Program. Based on discussions with program staff, however, because DWR's water transfer activities were ongoing prior to CALFED and the ROD, program staff did not appear to fully embrace the new organization and directive.

It should be noted that there is no funding for the Water Transfer Program for 2005-06; the Legislature deleted state funding, and federal funding has not been

provided since 2001-02. It is our understanding that water transfers will continue to be facilitated by the DWR, as funding allows, pursuant to Water Code Sections 480 and 1810, and by the USBR, pursuant to the Central Valley Project Improvement Act.

B. Goals

According to the ROD, the goal of the Water Transfer Program is "to encourage the development of a more effective water transfer market that facilitates water transfers and streamlines the approval process while protecting water rights, environmental conditions and local economic interests."[17]

C. Program Commitments for Stage 1

The Water Transfer Program was guided by the ROD as well as statute and regulations.[18] Review of the Water Transfer Program relative to statutory and regulatory commitments is outside the scope of this review. The ROD included actions for the Water Transfer Program in two sections—the Plan for Action and the Preferred Program Alternative. Although the Water Transfer Program's focus was on the ROD's Plan for Action section, our review assessed the progress on the actions included in both sections. Our review also addressed the *Water Transfer Program Plan* (Program Plan), which provided further detail on the actions in the Preferred Program Alternative, although program staff did not focus on it.

Following are the program commitments in summary form for the Water Transfer Program included in the two ROD sections:

ROD Plan for Action

1. Increase the availability of existing facilities for water transfers by facilitating "wheeling" transactions. Legislation should be enacted to clarify the wheeling laws.

2. Lower transaction costs through permit streamlining.

3. Increase access to market information by developing the "On-Tap" website as a water transfer information source, which will clarify application of policies and procedures and provide information about ongoing transfer activity.

17 CALFED Bay-Delta Program, *Programmatic Record of Decision*, August 28, 2000, p. 71.
18 The DWR program staff indicated that their activities were guided primarily by the ROD, while the SWRCB program staff indicated that their activities were guided primarily by statute and regulations.

4. Establish the California Water Transfers Information Clearinghouse to disseminate information on groundwater impacts, cumulative impacts, and local socioeconomic impacts of transfers.

5. Develop and support proposals to ensure that incentives to conserve water accrue directly to land owners, and not to the irrigation district or water supply agency (complementary action).

ROD Preferred Program Alternative (Although there are no time schedules specified for each of these actions, the Program Plan states that these actions were to be implemented in Stage 1.)

6. Require water transfer proposals submitted to the DWR, USBR, or SWRCB to include analysis of potential groundwater, socioeconomic, or cumulative impacts.

7. Refine quantification guidelines used by water transfer approving agencies.

8. Improve the accessibility of state and federal conveyance and storage facilities for the transport of approved water transfers.

9. Clearly define carriage water requirements and resolve conflicts over reservoir refill criteria.

10. Identify appropriate assistance for groundwater protection.

11. Establish new accounting, tracking, and monitoring methods to aid instream flow transfers under Water Code Section 1707.

II. Findings and Observations

See Appendix C, Water Transfer Program, for a detailed discussion supporting the findings and observations.

A. Implementation Status

ROD Actions

- Excluding actions and parts of actions that are no longer applicable (#1, part of #2, #5, and part of #9), three ROD actions have been completed (#2, #3, and #4), and three are ongoing (#6, #8, and #10). Progress was made on two

additional ROD actions (#7 and #9), but these are no longer being pursued. One ROD action (#11) is incomplete and is in progress.

- Progress on ROD actions was achieved even though program staff were not focused on the activities specified in the ROD and Program Plan. Some of the ROD actions were achieved by continuing activities that existed prior to the ROD.
- The ROD action to create the "On-Tap" website (#3) was a significant accomplishment for the Water Transfer Program and appeared to be useful to users; however, it was suspended in July 2005 due to budget constraints.
- Reduced funding levels, as compared to the original cost estimate, did not adversely affect program activities nor eliminate or delay any major program activity, which is likely due to the original cost estimate being overstated.

Goals. The Water Transfer Program appears to be making progress toward its goals.

B. Other Issues

Our review also identified the following issues in the Water Transfer Program that may warrant further analysis:

Communication

- Program documents communicating the Water Transfer Program's progress in meeting its commitments erroneously reflected no program activity prior to late 2004, which could be confusing or misleading to stakeholders.
- The draft *Multi-Year Program Plan (Years 6-9)* reported progress on certain ROD actions, and not on others, which could make it difficult for stakeholders to assess the status of the program's implementation.

Interagency Coordination. There did not appear to be adequate interagency coordination among the Authority and implementing agency staff, which hindered the Authority's oversight, coordination, and accurate reporting of the Water Transfer Program's activities.

Performance Measures. Outcome measures for the Water Transfer Program are problematic due to the administrative nature of the program. Performance to date has addressed the administrative activities, and in the *2004 Annual Report*, volume

of water transferred, which is questionable as an outcome measure for the Water Transfer Program.

Priorities. Given that the Water Transfer Program did not appear to have a focused implementation strategy, and received no funding in the 2005-06 budget, the prospect for further progress on ROD actions is unclear.

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VI. Environmental Water Account

I. Program Description

The Environmental Water Account (EWA) program element was established to improve water supply reliability while also protecting at-risk fish by more flexibly managing the water available to the State Water Project (SWP) and the Central Valley Project (CVP). The EWA acquires alternative sources of SWP and CVP water supply, known as "EWA assets," by purchasing, diverting, transferring, or borrowing water, which is stored and released at appropriate times to stabilize water deliveries during periods when pumping is being curtailed to protect fish. Prior to the EWA, pumping curtailments to protect fish affected water deliveries such that water users had to find costly alternative supplies or, at a minimum, the reliability of supplies was diminished. Also, pumping curtailments were made after excessive fish losses. Currently, under the EWA, pumping curtailments are intended to be proactive, based on system-wide monitoring and fish presence. EWA managers are able to devise strategies and plan in advance for export curtailments, adjusting as necessary for actual SWP/CVP operations and fish needs. In addition, water may be provided upstream at critical times to meet the needs of at-risk fish.

The EWA is a critical program element for implementing the Conservation Agreement (discussed in Section II, Background), a regulatory and permitting document for the CALFED program that specifies that there will be no reductions in contract water supplies exported from the Delta as long as the CALFED agencies comply with requirements for protecting fish. The EWA coordinates with the Water Transfer Program on water acquisition, and with the Ecosystem Restoration Program (ERP) and Science Program to understand and provide for fish and ecosystem needs.

The five implementing agencies include two "project agencies"—the Department of Water Resources (DWR), which operates the SWP, and the US Bureau of Reclamation

(USBR), which operates the CVP—and three "management agencies"—the Department of Fish and Game (DFG), the US Fish and Wildlife Service (FWS), and the National Marine Fisheries Service (NMFS).

A. Goals

The essential goal of the EWA, as stated in the ROD, is to provide increased water supply reliability to water users while at the same time assuring the availability of sufficient water to meet fishery protection and restoration/recovery needs as part of the overall ERP.[19]

B. Regulatory Context

Under the Conservation Agreement, CALFED agencies agreed to refrain from reducing water exported from the Delta as long as fish are protected in a specified manner, which includes the following three levels of protection:

- **Tier 1** consists of "baseline protections" in place prior to CALFED, i.e., previously existing regulations and operations.
- **Tier 2** consists of greater protections that include the water assets provided by the EWA combined with the benefits of the ERP (which promotes fish recovery by installing fish screens and diversions and restoring natural ecological processes).
- **Tier 3** consists of even greater protections through the commitment and ability of the CALFED agencies to make additional water available, should it become necessary.

C. Program Commitments for Stage 1

The program commitments for the EWA address how much water the EWA should make available, how it should acquire that water, and how much it should spend. The EWA program is guided by the ROD and the Operating Principles Agreement (an attachment to the ROD), which are incorporated by reference into the Conservation Agreement. Where the ROD and the Operating Principles Agreement may be inconsistent, the Operating Principles Agreement takes precedence. Additional detail is provided by the "Interim Protocols" that, according to program staff, are "a

19 CALFED Bay-Delta Program, *Programmatic Record of Decision*, August 28, 2000, p. 54.

living document" and are updated annually to include the latest forecast/strategy for acquiring water as well as detailed specifications for operations.

The Operating Principles Agreement states that its principles apply generally, but may not provide the necessary direction in all circumstances, and issues that arise may be resolved by mutual agreement of the implementing agencies.[20] This flexibility was exercised after the first year of the program when, according to program staff, the ROD was found to be too rigid and prescriptive, and a more flexible set of commitments and targets was adopted. The new approach eventually resulted in a new EWA ROD, issued in March 2004.[21]

The EWA is also guided by the Conservation Agreement. The Conservation Agreement required: (1) acquisition of EWA assets per the Operating Principles Agreement, which are consistent with the original ROD requirements above; and (2) funding of $50 million per year. The Conservation Agreement initially required that the EWA receive funding of $50 million per year for Years 1 through 4, or a total of $200 million. (This amount was included in the original cost estimate in the ROD, within the ERP.) Only four years were covered because, pursuant to the Conservation Agreement, the term of the EWA was to expire on September 30, 2004, unless the implementing agencies agreed that the program was a success and chose to continue it. The agencies amended the Conservation Agreement on September 30, 2004, to extend the program and funding through December 2007, based on satisfactory performance.

Stage 1 commitments for the EWA are summarized as follows:

1. Original CALFED ROD (2000). The EWA assets should provide an average of 380 thousand acre-feet (TAF) annually, which is further specified in terms of specific volumes from specific sources. (This amount was revised by EWA staff to 255 TAF to adjust for an error in the ROD.) Per the Operating Principles Agreement, the amount needed each year will vary based on hydrology and fish needs. In addition, an implementation strategy will be developed for Tier 3.

2. EWA ROD (2004). EWA will be allowed to purchase up to 600 TAF; however, in most years only 200-300 TAF will be needed.

3. Conservation Agreement. Funding of $50 million per year.[22]

20 CALFED Bay-Delta Program, *Programmatic Record of Decision, Attachment 2, Environmental Water Account Operating Principles Agreement*, August 28, 2000, p. 1.

21 The ROD is a federal document; the corresponding state document, the "Notice of Determination/Findings" (or "NOD") was also issued in March 2004.

22 CALFED Bay-Delta Program, *Programmatic Record of Decision, Attachment 5, Conservation Agreement Regarding Multi-Species Conservation Strategy*, August, 28, 2000, p. 9.

II. Findings and Observations

See Appendix D, Environmental Water Account, for a detailed discussion supporting the findings and observations.

A. Implementation Status

ROD Actions. The EWA generally appears to have fulfilled the commitment to provide sufficient water assets, as called for in the original CALFED ROD and the EWA ROD. The assets may have been insufficient in Year 3, when all the EWA assets were used and fish losses exceeded the threshold amount; however, the excessive fish losses could also have been due to the normal three-day lag period between the time a curtailment is deemed necessary and the time the curtailment is implemented.

Conservation Agreement. It is uncertain whether the EWA has met the requirement for $50 million in annual funding, due to discrepancies in the fiscal records of the agencies. There may be reconciling factors; however, those issues were outside the scope of our review.

Goals. The EWA has been successful in protecting SWP and CVP contractors from reductions in water deliveries due to actions taken to protect fish. It is uncertain whether the fish protections have been sufficient, partly because the program is too new, and partly because of the recent pelagic fish decline in the Delta, for which the cause is unknown.

B. Other Issues

Our review also identified the following issues in the EWA that may warrant further analysis:

Communication. According to program staff, the ROD was discovered in Year 1 to be too rigid and prescriptive to meet program needs, and the program developed more flexible criteria and guidelines that have since been used, beginning with Year 2. The new criteria and guidelines were publicly issued in the form of an EIS/EIR in January 2004, and a new EWA ROD was issued in March 2004. Although these changes were mentioned as accomplishments on page 7 of the *Multi-Year Program Plan (Years 5-8),* they were not incorporated into the discussion of goals and objectives on page 1, which still referred to the original ROD. The new ROD was not mentioned in the *2004 Annual Report,* nor is it available on the Authority's website.

Interagency Coordination. There appears to be good communication and coordination among the implementing agencies; however, the Authority does not have an EWA program manager, which may hinder the Authority's ability to provide adequate oversight and coordination of EWA activities.

Performance Measures. The EWA has developed and uses performance measures—including input, output, and outcome indicators. Program documents indicate that it is uncertain whether all the current measures will be used in future years.

Program Records. The fiscal records of the DWR and USBR are inconsistent with the records of the Authority, resulting in uncertainty regarding whether the annual funding commitment was met.

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VII. Water Use Efficiency Program

I. Program Description

The Water Use Efficiency (WUE) Program element promotes water conservation in the urban and agricultural sectors, and recycling (wastewater reclamation) in the urban sector. An advantage of water use efficiency programs is that they may be implemented more quickly than increases in storage and improvements in conveyance systems. The WUE Program functions primarily by providing grants and loans on a competitive basis. The implementing agencies are the Department of Water Resources (DWR), the State Water Resources Control Board (SWRCB), and the US Bureau of Reclamation (USBR). The SWRCB's activities in the WUE Program have been focused on water recycling.

A. Goals

The stated goal for the WUE Program varies depending on the document. As a result of our review, program staff are now aware of the discrepancies and agree that they need to address the issue and achieve consistency. The material below presents the various versions of the WUE goal.

The *Multi-Year Program Plan (Years 6-9)* has the clearest and most meaningful language, and is used as the "goal" for purposes of our review. This document states that the goal is "to advance the implementation of cost-effective water conservation and recycling practices throughout the State that contribute to California Bay-Delta Program water supply reliability, water quality, and ecosystem restoration goals. These practices include agricultural water conservation, urban water conservation, water recycling, and wetlands water management."[23] This description is more inclusive than the goal stated in the ROD; the ROD does not include "wetlands

23 CALFED Bay-Delta Program, *Water Use Efficiency Program Multi-Year Program Plan (Years 6-9),* July 2005, p. 4.

water management" as a target area. "Refuge water management" is mentioned in the *CALFED Bay-Delta Program Implementation Plan* as an additional focus area, and after implementation was started, water management plans for refuges were incorporated under the direction of the USBR.

The Authority's website states a different set of "goals" as shown below:

- "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."[24]

The *WUE Program Plan* and *Preliminary Program Implementation Plan* state "the ultimate goal of the CALFED WUE Program is to develop a set of programs and assurances that contributes to CALFED goals and objectives, has broad stakeholder acceptance, fosters efficient water use, and helps support a sustainable economy and ecosystem."[25]

The ROD, in the discussion of the Preferred Program Alternative, stated that the program "has identified potential recovery of currently irrecoverable water losses of over 1.4 million acre-feet (or 1,400 thousand acre-feet [TAF]) of water annually by 2020 as a result of CALFED actions."[26] While this statement was not labeled as a "goal," it nevertheless quantifies the amount of water sought to be recovered and can be interpreted as a goal or target, although staff in the implementing agencies were not aware of a quantified target. Further quantification was stated in the Plan of Action, although the ROD states that the "estimates are not intended as targets" ;[27] amounts are in ranges of water savings to be achieved by the end of Stage 1. The total amount, as shown in Table VII-1 below, is 1,005-1,348 TAF, which is only slightly less than the estimate of 1,400 TAF that was identified as potentially achievable by 2020.

24 http://calwater.ca.gov/Programs/WaterUseEfficiency/WaterUseEfficiency.shtml, visited June 20, 2005.
25 CALFED Bay-Delta Program, *Water Use Efficiency Program Plan, Final Programmatic EIS/EIR*, July 2000, p. 2-1. "CALFED Water Use Efficiency Preliminary Program Implementation Plan," December 12, 2000, p. 1.
26 CALFED Bay-Delta Program, *Programmatic Record of Decision*, August 28, 2000, pp. 19-20.
27 Ibid, p. 59.

Table VII-1. Estimated Water Savings

Sector	TAF
Urban	520 - 688
Agricultural	260 - 350
Recycling	225 - 310
Total	**1,005 - 1,348**

B. Objectives

According to the Program Plan, the program has six objectives, in summary form below. The objectives do not include quantified targets for water savings or efficiency.

- Reduce existing irrecoverable losses.
- Achieve multiple benefits.
- Preserve local flexibility.
- Use incentive-based actions over regulatory actions.
- Build on existing water use efficiency programs.
- Provide assurance of high water use efficiency.[28]

Program staff stated that they work toward achieving these objectives, although they were unaware that the objectives were articulated in program documents.

C. Program Commitments for Stage 1

The Stage 1 program commitments for the WUE Program are found in the ROD. These commitments are largely administrative, i.e., they do not address programmatic results or contain targets for water conservation or recycling. The ROD actions stated in summary form are as follows:

1. CALFED agencies will prepare a program implementation plan including incentives in the agricultural sector, urban sector, and water reclamation area, as well as a financial allocation methodology.

28 CALFED Bay-Delta Program, *Water Use Efficiency Program Plan, Final Programmatic EIS/EIR*, July 2000, p. 2-2.

2. CALFED agencies will establish milestones, benefits, remedies, and/or consequences to track and guide the implementation of the Agricultural Water Use Efficiency Program.

3. CALFED agencies will develop a detailed finance proposal for Stage 1.

4. The DWR and USBR will provide technical assistance to urban agencies and agricultural districts developing management plans under the Urban Water Management Planning Act and the AB 3616 process.[29]

5. The Department of the Interior will create a public advisory committee to advise state and federal agencies on the structure and implementation of assistance programs.

6. CALFED agencies will implement a process for certification of water suppliers' compliance with the terms of the urban Memorandum of Understanding (MOU).

7. CALFED agencies will report progress in annual evaluations and a comprehensive evaluation of the first four years, and address further program investments and actions.

8. An independent review panel will be convened to provide guidance that will help define appropriate measurement as it relates to surface and groundwater usage.

9. CALFED agencies will work with the Legislature to develop legislation for requiring the appropriate measurement of all water uses in the state.

10. CALFED agencies will develop and support proposals to ensure that incentives to conserve water accrue directly to landowners, and not to the irrigation district or water supply agency (complementary action).

II. Findings and Observations

See Appendix E, Water Use Efficiency Program, for a detailed discussion supporting the findings and observations.

29 AB 3616 is the Agricultural Water Suppliers Efficient Water Management Practices Act, enacted in 1990. See Water Code Section 10903.

A. Implementation Status

ROD Actions

- The WUE Program has fulfilled three of the ten ROD actions. Technical assistance (#4) is ongoing. The public advisory committee (#5) was established, albeit late. The independent review panel (#8) on surface and groundwater use measurement completed work (late) only for agricultural purposes; Authority staff completed the work for urban purposes.
- Three additional ROD actions have been partly fulfilled. A preliminary version of the program implementation plan (#1) was issued in 2000, but there is no final version; the preliminary version does not fully address the specific components required by the ROD (Authority staff treat the annual multi-year program plans as the implementation plan). The agricultural assurances (#2) were completed (albeit one year late), but implementation has been limited due to technical complexities, lack of funding, and marketing constraints, and a new approach is being considered. Program progress (#7) is reported annually through the multi-year program plans, as required by the ROD, but the four-year comprehensive evaluation has not been completed.
- The remaining four actions are behind schedule or were not completed. A detailed finance proposal for Stage 1 was called for by July 2001 (#3), but was not completed. A certification process for water suppliers' compliance with the Urban MOU was not implemented (#6). Legislation requiring appropriate measurement of water is in development; however, it was to have been enacted by 2003 (#9). The complementary action stating that incentives to conserve water should accrue directly to landowners, and not to the irrigation district or water supply agency (#10), was not addressed.

Goals. The grants have promoted water conservation and recycling, although recycling has been a larger part of the program than originally anticipated. Assessing the cost effectiveness of the measures adopted is beyond the scope of this review. It is premature to determine the contributions to water supply reliability, water quality, and ecosystem restoration.

Objectives. Progress has been made on four of the six objectives. Previously irrecoverable losses are expected to be reduced through the grant projects, although the amount is unclear due to inconsistent reporting and is not being compared to a specific target. Local flexibility and incentive-based actions are addressed through the grant program, and the WUE Program continues to build on certain previously

existing water use efficiency programs. We do not have sufficient information to determine if the program is achieving multiple benefits from the projects, or if it is assuring high water use efficiency.

B. Other Issues

Our review also identified the following issues in the WUE Program that may warrant further analysis:

Communication

- The goals and objectives vary between guiding documents and documents used to report program performance, potentially resulting in confusion among program staff and stakeholders regarding precisely what the WUE Program is trying to accomplish.
- Program documents contain large discrepancies regarding the amount of water that will be conserved or recycled as a result of program actions.
- Water recycling has received significantly more funding than conservation, which was not anticipated in the ROD; program documents did not address this change of focus.

Interagency Coordination. The WUE Program management at the Authority is focused on the technical aspects of the program, and less attention is paid to program coordination and management effectiveness.

Performance Measures. Performance measures are still under development. Preliminary measures are highly technical and their effectiveness has been unclear.

Program Records

- Detailed expenditure information provided by the Authority's Policy and Finance Unit differed significantly from the information in the *2004 Annual Report*. Authority staff indicated that the detailed information was more recent and accurate, which raises concerns about the overall accuracy and reliability of the Authority's fiscal records.
- Neither the Authority nor the implementing agencies could substantiate the project information reported in the *Multi-Year Program Plan (Years 6-9)* and *2004 Annual Report*.

- Implementing agencies reported that their accounting data were changed, with no explanation, after they were submitted to the Authority.

Program Assessment. The four-year comprehensive evaluation, which was to be conducted by "the CALFED agencies" is being conducted by the Authority's WUE Program manager with the assistance of economists. Although the program manager has the requisite technical expertise, the lack of independence will serve to diminish the credibility of the report. Further, given the problems with interagency coordination in this program element, the lack of participation by the implementing agencies may result in a narrow view of the program.

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VIII. Drinking Water Quality Program

I. Program Description

The Drinking Water Quality Program (DWQP) element supports CALFED's objective for water quality.[30] The DWQP performs its function by directly funding projects as well as providing grants that address source control, treatment technology, research, policy development, and water management practices. The implementing agencies are the State Water Resources Control Board (SWRCB), Department of Health Services (DHS), and US Environmental Protection Agency (USEPA).

A. Goals

The goal of the DWQP is stated various ways in the ROD, the *Water Quality Program Plan*, and on the Authority's website. The website, which appears to best capture the aim of the DWQP, states that the goal is "to provide safe, reliable, and affordable drinking water to the 23 million Californians who rely on the Delta for all or part of their drinking water."[31] This goal is not an issue in the short term, because currently it is being met. Rather, this goal is a challenge over the 30-year life of CALFED, because in the future, this goal will be more difficult to achieve due to increased population and other economic and environmental pressures.

30 Water quality is also a factor in the Ecosystem Restoration Program and Watershed Management; however, those program elements focus more on environmental water than drinking water.

31 http://calwater.ca.gov/Programs/DrinkingWater/DrinkingWater.shtml, visited July 26, 2005. The statement in the ROD is "to provide good quality drinking water for the millions of Californians who rely on the Delta for all or a part of their drinking water"; however, this statement does not address affordability (see CALFED Bay-Delta Program, Programmatic Record of Decision, August 28, 2000, p. 65). The statement in the Water Quality Program Plan is "to continuously improve source water quality that allows for municipal water suppliers to deliver safe, reliable, and affordable drinking water that meets and, where feasible, is better than applicable drinking water standards"; however, this statement places all the emphasis on source water quality, and does not address the treatment activities called for in the ROD (see CALFED Bay-Delta Program, Water Quality Program Plan, Final Programmatic EIS/EIR Technical Appendix, July 2000, p. 3-4).

The DWQP is not designed to implement specific regulations. Rather, it is designed to implement actions that will assist in meeting existing and future standards for drinking water at the tap.

B. Targets

Drinking water must meet state and federal safety standards. The quality of drinking water depends on the quality of the source water and the treatment applied to it, as affected by the entire system of flow, contamination, storage, conveyance, distribution, and use/reuse.

When the ROD was issued, stakeholders were focused primarily on the quality of source water. The initial emphasis was to reduce two major constituents of concern: bromide and organic carbons, which are converted into harmful chemicals during disinfection at treatment plants. (Bromide is also a measure of salinity, which can impair taste and limit water use and reuse.) The performance target for the DWQP was to achieve either:

(a) Average concentrations at specified Delta intake locations of 50 micrograms per liter of bromide and 3 milligrams per liter of total organic carbons (i.e., "the 3 and 50 target"), or

(b) An "equivalent level of public health" (ELPH) protection. ELPH protection is a "suite of actions" for improving water quality that are applied across the entire system—i.e., source water, treatment, flow and conveyance management, water quality exchanges, and distribution—in order to ultimately meet the standards for treated drinking water.

Because Delta water frequently exceeds the 3 and 50 target level, it would not be feasible for the DWQP to meet this target as a performance standard without significant impacts on water supply, and the DWQP has begun implementing the ELPH protection strategy through the development of regional ELPH plans. The DWQP continues to fund efforts to improve source water (which is an ELPH component), including improvements in bromide and organic carbon levels in source water, but without the expectation of achieving the 3 and 50 target. In addition, the DWQP has developed numeric concentration targets for pathogens, total dissolved solids, nutrients, chloride, and turbidity, and continues to pursue source water improvements in these constituents. Some other contaminants of Delta water (e.g., pesticides, metals) were evaluated and considered of limited significance to drinking

water, due to their relatively low concentration in the Delta.[32] (Some of these constituents are also a focus of the Ecosystem Restoration Program.)

C. Program Commitments for Stage 1

The DWQP is guided primarily by the ROD, and to some extent by the *Water Quality Program Plan*. The DWQP also undertakes some actions not directly addressed in the ROD, such as development of the ELPH protection strategy. The ROD lists seven actions for Stage 1, plus three complementary actions. The actions range from specific to broad, and each includes several short-term actions with target dates (except for one of the complementary actions). The ROD actions in summary form are listed below:

1. Address drainage problems in the San Joaquin Valley to improve downstream water quality.
2. Implement source controls in the Delta and its tributaries.
3. Support the ongoing efforts of the Delta Drinking Water Council.
4. Invest in treatment technology demonstration projects.
5. Control runoff into the California Aqueduct and similar conveyances.
6. Address water quality problems at North Bay Aqueduct.
7. Study recirculation of export water to reduce salinity and improve dissolved oxygen in the San Joaquin River.
8. Establish a Bay Area Blending/Exchange project (complementary action).
9. Facilitate water quality exchanges and similar programs (complementary action).
10. Develop and implement within two years a plan to meet all existing water quality standards and objectives for which the state and federal water projects have responsibility (complementary action).

32 CALFED Bay-Delta Program, *Water Quality Program Plan, Final Programmatic EIS/EIR Technical Appendix,* July 2000, p. 3-5.

There is some overlap among these actions, particularly among drainage in the San Joaquin Valley (#1), source controls in the Delta and tributaries (#2), and treatment technology demonstration projects (#4).

II. Findings and Observations

See Appendix F, Drinking Water Quality Program, for a detailed discussion supporting the findings and observations.

A. Implementation Status

ROD Actions

- The DWQP has made progress on all of its ROD actions except for the last complementary action (meeting all water quality standards in the state and federal water projects). Five ROD actions have been completed or are on schedule (#3 support Drinking Water Council; #4 treatment technology demonstrations; #5 runoff to California Aqueduct; #6 North Bay Aqueduct; and #8 blending exchange).
- One commitment (#2 source controls in the Delta) is partly behind schedule and partly ahead of schedule. Most of the projects and funding have been for source controls, and this part of the commitment is ahead of schedule. On the other hand, the part of the commitment calling for a new drinking water policy for the Delta is behind schedule due to issues with the Central Valley Regional Water Quality Control Board (CVRWQCB).
- Four ROD actions are behind schedule. One of these commitments (#1 agricultural drainage) involves the CVRWQCB. Another two of these commitments (#7 recirculate export water and #10 plan to meet water quality standards) involve the US Bureau of Reclamation. The fourth (#9 water quality exchanges) involves local water districts.
- In general, progress has been affected by limited funding for personnel and grants, especially competitive grants, as well as by contracting delays.
- Funding constraints have led the program to emphasize demonstration of new technologies and techniques rather than implementation of improvement projects.

- The DWQP has made a significant contribution to drinking water management through the development of the ELPH protection model, which will direct local water agencies to consider all the factors that promote healthy drinking water when they engage in planning. ELPH protection planning was not a specific ROD action.

Goals and Targets. It is premature to know whether the DWQP will meet its long-term goal for safe, reliable, and affordable drinking water; however, the program appears to be progressing in that direction.

B. Other Issues

Our review also identified the following issues in the DWQP that may warrant further analysis:

Communication. The multi-year program plans have not provided clear explanations of how the various targets (i.e., constituent targets and ELPH protection) work together to provide direction to the program. There has not been a clear explanation of the status of performance measurement. The plans have also included statements indicating that actions have been accomplished, which were inconsistent with information provided by program staff.

Performance Measures. The DWQP does not have meaningful performance measures.

Priorities. The lack of funding for systematic monitoring and assessment has hindered the DWQP's ability to address source water problems in a comprehensive and strategic manner. The competitive grants process has led to projects being funded based on the proposals received, rather than on the highest priority projects from a strategic standpoint.

Program Records. The program lacks a database of projects that ties to grant funding. The project database was developed for the Assessment Study, but considerable effort was required to relate the funding in the database to records for the grant program. In addition, the records in the project database appear to be unreliable—the program had difficulty in determining the correct number of projects and identifying the ROD action to which each project contributed.

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IX. Levee System Integrity Program

I. Program Description

The Levee System Integrity Program (LSIP) element supports CALFED's objective for levee system integrity, which is to improve Bay-Delta levees to provide flood protection, ecosystem benefits, and protect water supplies needed for the environment, agriculture, and urban uses. Actions in the LSIP are to be consistent with the Ecosystem Restoration and the Conveyance Programs. The LSIP performs its functions by directly funding projects as well as providing grants. The implementing agencies are the Department of Water Resources (DWR), Department of Fish and Game (DFG), and US Army Corps of Engineers (USACE).

A. Background

Since 1973, the DWR, in conjunction with the DFG, has had a Delta levees program.[33] Currently, Water Code Section 12300 et seq. provides the authority, guidance, and funding for this program. The program was scheduled to sunset on June 30, 2006, but legislation (SB 264, Machado) was enacted to extend one portion of the program (the Delta Flood Protection Fund) until July 1, 2008. DWR staff indicate that without additional legislation, the Delta levees program will undergo a significant reduction in its ability to work cooperatively with local agencies to achieve CALFED objectives.

When CALFED was implemented in 1994 and the ROD subsequently issued in 2000, the goals and objectives of the existing Delta Levees Program were to be subsumed into CALFED's LSIP. Our review indicates, however, that because the Delta Levees

33 The Delta Levees Program currently consists of the following components: Delta Levee Subventions; Special Flood Control Projects; Beneficial Reuse of Dredged Materials; Delta Geographic Information Systems; Emergency Response; Habitat Improvement; and Subsidence.

Program was in existence prior to CALFED and the ROD, program staff did not necessarily embrace the new organization and directive. As a result, the relationship between CALFED's LSIP and the Delta Levees Program has been confusing.

B. Goals

The goal of the LSIP is stated various ways in the ROD, the *Levee System Integrity Program Plan* (Program Plan), and on the Authority's website. According to the ROD and Program Plan, the goal of the LSIP is to provide long-term protection for multiple Delta resources by maintaining and improving the integrity of the extensive Delta levees system.[34] The Program Plan also indicates that to achieve the goals and objectives of the LSIP, as well as other CALFED objectives, the Delta levee system must remain generally in its current configuration.[35] According to the Authority's website,[36] the goals of the LSIP also include improving emergency response capabilities, ensuring levee habitat needs are met, improving coordination of permit processes, and developing adequate and reliable funding for levee maintenance, although these appear to be objectives rather than goals.

Discussions with program staff indicate that since the ROD's inception, some goals have changed and others have been discontinued, but the process for revising goals has not always been clear. It should also be noted that program staff indicate there has not always been agreement among program staff on how to reflect such changes in program documents, and that ultimately, final decision-making authority rests with the implementing agencies (DWR, DFG, and USACE).[37]

C. Elements

The LSIP is generally guided by the ROD, and to some extent by the Program Plan. Both documents present the LSIP in five elements. The Program Plan also includes more detailed implementation objectives, targets, and actions associated with each element, whereas the ROD includes several measurable Stage 1 actions as well as one complementary action. Because the Program Plan was viewed as more of a long-term plan, our review focuses on assessing the status of the ROD actions (see below for Program Commitments for Stage 1).

34 CALFED Bay-Delta Program, *Levee System Integrity Program Plan, Final Programmatic EIS/EIR Technical Appendix,* July 2000, p. 1-5, and CALFED Bay-Delta Program, *Programmatic Record of Decision,* August 28, 2000, p. 72.

35 CALFED Bay-Delta Program, *Levee System Integrity Program Plan, Final Programmatic EIS/EIR Technical Appendix,* July 2000, p. 1-1.

36 http://calwater.ca.gov/Programs/LeveeSystemIntegrity/LeveeSystem.shtml, visited July 8, 2005.

37 Section 79423(l) of the Water Code specifies that final decision making authority for the CALFED program rests with implementing agencies. (Note: The Authority is the implementing agency only for the Science Program.)

The five elements of the LSIP identified by the ROD and Program Plan are:

1. **Base Level Protection—**Provide funding to help local reclamation districts reconstruct all Delta levees to a base level of protection (i.e., the USACE's Public Law [PL] 84-99 Delta Specific Standard, or "PL 84-99 standard").

2. **Special Improvement Projects—**Enhance stability on levees that have particular importance in the system (e.g., life and personal property, water quality, agricultural production, ecosystems).

3. **Subsidence Control Plan—**Develop best management practices (BMPs) to control and reverse subsidence (i.e., sinking of land level) and work with local districts and landowners to implement cost-effective measures.

4. **Emergency Management and Response Plan**—Enhance the ability of local, state, and federal agencies to rapidly respond to levee emergencies.

5. **Risk Assessment—**Perform a risk assessment to quantify the major risks to Delta resources from floods, seepage, subsidence, and earthquakes, evaluate the consequences, and develop recommendations to manage the risk.

Suisun Marsh Levees—The ROD and Program Plan also specify that levees in the Suisun Marsh have been included within the scope of the LSIP for purposes of considering whether levees within the Suisun Marsh may need repair or improvement to accomplish other CALFED objectives (e.g., ecosystem restoration). The Program Plan indicates that efforts to clarify linkages of Suisun Marsh actions to the CALFED objectives are ongoing and will be completed during early Stage 1.[38] The ROD indicates, however, that CALFED agencies do not intend to accept any responsibility or provide any assurance for maintaining the stability of the Suisun Marsh.[39]

D. Program Commitments for Stage 1

The ROD included the Stage 1 actions identified below, along with the related element, if any:

1. During Stage 1, about 200 additional miles of levee will be brought up to the PL 84-99 standard (Base Level Protection).

38 CALFED Bay-Delta Program, *Levee System Integrity Program Plan, Final Programmatic EIS/EIR Technical Appendix,* July 2000, p. 1-5, and CALFED Bay-Delta Program, *Programmatic Record of Decision,* August 28, 2000, p. 13-1.
39 CALFED Bay-Delta Program, *Programmatic Record of Decision,* August 28, 2000, p. 73.

2. Initiate actions to refine the Delta Emergency Management Plan by 2000 (Emergency Management and Response Plan).
3. Develop by 2001 a Delta Risk Management Strategy (DRMS) that identifies risks to Delta levees, evaluates consequences, and recommends actions (Risk Assessment).
4. Develop by 2001 BMPs for the reuse of dredged materials.
5. Institute a program for using bay and Delta dredge material to repair Delta levees and restore Delta habitat, targeting 2 million cubic yards of dredge material applied in Stage 1.
6. The CALFED agencies intend that final development and implementation of actions under the Comprehensive Study of the Sacramento and San Joaquin River watersheds to improve flood control efforts will be coordinated and consistent with the CALFED program (complementary action).

The ROD did not include any Stage 1 actions related to the Special Improvement Projects or Subsidence Control Plan elements, or the Suisun Marsh Levees.

II. Findings and Observations

See Appendix G, Levee System Integrity Program, for a detailed discussion supporting the findings and observations.

A. Implementation Status

ROD Actions

- The LSIP has not made significant progress on any of its ROD actions; however, many of the ROD actions may no longer be applicable due to new program information or the fact that the ROD actions may not have been the appropriate targets.
- The *Multi-Year Program Plan (Years 6-9)* cites the absence of adequate, sustained funding from the state and federal government as the primary cause for the LSIP's delay, and indicates that the LSIP's funding has been approximately 30 percent of the ROD targets. Our review, however, indicates that the LSIP has received 69 percent of the original estimated cost for Years 1 through 5. Further,

the state government has contributed 174 percent of its estimated share, whereas the federal government has contributed less than 1 percent of its estimated share.

Suisun Marsh Levees. The status of the Suisun Marsh levee system as part of the LSIP/CALFED is unclear at this time.

Goals and Elements. Our review indicates that the LSIP's activities generally appear to be consistent with its goal to maintain and improve Delta levees; however, given the technical complexity and scientific uncertainty related to Delta levees, it is unclear whether the LSIP is making meaningful progress toward its long-term goal.

B. Other Issues

Our review also identified the following issues in the LSIP that may warrant further analysis:

Communication. Communication to stakeholders regarding the LSIP's goals and performance is not always clear and changes in the LSIP's direction are not always communicated. For example, the LSIP's goals are stated in various ways in the program documents and on the Authority's website, potentially resulting in confusion regarding precisely what the LSIP is trying to accomplish. Further, the LSIP's performance as reported in the *2004 Annual Report* and *Multi-Year Program Plan (Years 6-9)* does not easily align with the various goals, making it difficult to gauge the LSIP's success.

Interagency Coordination

- Because the Delta Levees Program was in existence prior to CALFED and the ROD, program staff did not necessarily embrace the new organization and directive. As a result, the relationship between CALFED's LSIP and the Delta Levees Program has been confusing.
- The federal implementing agency for the LSIP is the USACE; however, discussions with USACE staff indicate that the USACE does not view the ROD as a guiding document nor does it perceive itself as an implementing agency for the LSIP. Discussions with Authority, DWR, and DFG program staff confirmed this perception.

Performance Measures. Although efforts have been undertaken by the Science Program and the LSIP to develop performance measures, the LSIP does not have meaningful performance measures at this time.

Priorities. Given that the LSIP's funding demands have been greater than available funding, there is a risk that the LSIP does not have sufficient focus to best use available funding prior to completion of the DRMS. The DRMS is intended to provide overall strategy and prioritization of funding for the LSIP. There is also a risk that the timeline identified for completing the DRMS is insufficient, which may result in unrealistic expectations by stakeholders.

Program Records

- The Authority and DWR have used differing and changing categories to track LSIP activities, making it difficult to track or monitor activities. It is our understanding that an attempt is being made to simplify matters by adopting a single system, but that system does not appear to be consistent with the categorization included in the ROD.
- The users and local government amount tracked by the state does not include funds provided by these entities above their share required under existing law. As a result, the amount of funding contributed to the LSIP by users and local government may be understated, which would also understate the entire amount of funding contributed to the LSIP.

X. Ecosystem Restoration Program

I. Program Description

The Ecosystem Restoration Program (ERP) funds projects to restore ecosystems in the Bay-Delta region. Ecosystem restoration includes rehabilitating natural processes (such as river flows), restoring wildlife habitat, and eliminating or ameliorating conditions that stress wildlife (such as water pollution and nonnative invasive species). In addition, the ERP funds research to determine how best to restore ecosystems.

The ERP is a vast and complex program that does not lend itself easily to performance measurement because of its huge scope and the interrelatedness of its activities. In addition, many of the changes that the program seeks to effect will take decades to achieve and are affected by multiple forces outside CALFED's control. Many of these external forces are not known or understood. It should be noted that ecosystem restoration projects have been funded since the mid-1990s.

The implementing agencies are the Department of Fish and Game (DFG), US Fish and Wildlife Service (FWS), and National Marine Fisheries Service (NMFS).

A. Goals and Objectives

Per the ROD, the "goal of the Ecosystem Restoration Program (ERP) is to improve aquatic and terrestrial habitats and natural processes to support stable, self-sustaining populations of diverse a nd valuable plant and animal species through an adaptive management process. Implementation of the ERP includes recovery of species listed in the State and Federal Endangered Species Acts."[40] The focus on endangered species is a priority within the overall goal of ecosystem restoration.

40 CALFED Bay-Delta Program, *Programmatic Record of Decision,* August 28, 2000, p. 35.

To achieve the above goal, the ERP has developed six strategic goals, and 32 strategic objectives within the goals. The strategic goals may be summarized as follows:

1. **At-Risk Species:** Recover or contribute to the recovery of 44 listed species.
2. **Ecological Processes:** Rehabilitate natural processes (e.g., various types of water flows, temperature regimes, floodplain inundation).
3. **Harvested Species:** Maintain or enhance selected species (e.g., salmon, sturgeon, waterfowl, and crayfish).
4. **Habitats:** Protect and/or restore various specified aquatic and terrestrial habitats (e.g., tidal marshes, seasonal wetlands, grasslands, riparian habitat).
5. **Nonnative Invasive Species:** Reduce the impact of existing nonnative species and prevent the establishment of new ones.
6. **Water and Sediment Quality:** Improve and/or maintain water quality for plants, animals, and people.

The goals of the ERP are highly interrelated. For example, the rehabilitation of ecological processes, the restoration of habitat, the reduction of nonnative species, and the improvement of water quality all contribute to the recovery of at-risk species. Also, the rehabilitation of ecological processes contributes to the restoration of habitat. Crafting program activities and performance measures that roll up into individual objectives and goals is complicated.

B. Integration of ERP and Regulatory Obligations

The ERP is the primary CALFED program element for implementing the Multi-Species Conservation Strategy (MSCS) in order to comply with the Conservation Agreement (described in Section II, Background). Under the Conservation Agreement, the ERP must be implemented in a manner that also serves to implement the MSCS, and must receive funding of at least $150 million per year. The MSCS is focused on the recovery of individual species and conservation of wildlife diversity, while the ERP is focused on the recovery of ecosystems, which in turn will promote the recovery of species and conservation of wildlife. The MSCS plan components are integrated with the ERP; pursuant to the ROD, the "measures and goals of the MSCS are derived from, or are consistent with, the ERP's measures

and goals."[41] The ERP and the MSCS are designed to achieve essentially the same outcomes, but represent different perspectives and approaches. The ERP contains some elements that are not strictly a part of the MSCS, such as education and outreach; also it aims to enhance, conserve, and/or maintain other species (e.g., striped bass, which is a nonnative, harvested fish) not included in the MSCS.

C. Scientific Issues and Uncertainties

The ERP has identified 12 scientific issues and uncertainties that it must resolve during Stage 1 in order to determine subsequent appropriate actions for meeting the ERP's goals. These issues include: the ecological and physical processes affecting at-risk species, the importance of the Delta for juvenile salmon, channel flow and sediment transport, the sources and effects of water contaminants, etc. Much of the Stage 1 implementation is designed to address these issues.[42] Research is a large component of the ERP.

D. Program Commitments for Stage 1

The ERP is based on a strategic plan and a program plan that specify roughly 300 targets and over 600 activities over the 30-year life of the program.[43] These documents have been distilled into three key documents (Milestones, ROD, and Draft Stage 1 Implementation Plan) described below that are relevant for Stage 1. In addition, another document, the Conservation Agreement, established a funding commitment.

- **Funding.** Under the Conservation Agreement, the ERP was to receive funding of at least $150 million per year, to implement fish protections.[44]
- **Milestones.** To ensure that the ERP is implemented in a manner consistent with the MSCS and to comply with the Conservation Agreement, the DFG, FWS, and NMFS developed 119 MSCS-ERP milestones to be accomplished in Stage 1. The milestones address ecological processes, habitat restoration, and wildlife

41 CALFED Bay-Delta Program, *Programmatic Record of Decision,* August 28, 2000, p. 37.

42 CALFED Bay Delta Program, *Ecosystem Restoration Program, Draft Stage 1 Implementation Plan*, August 2001, pp. 22-39.

43 CALFED Bay-Delta Program, *Ecosystem Restoration Program Plan,* Final Programmatic EIS/EIR Technical Appendix, July 2000. *Volume I: Ecological Attributes of the San Francisco Bay-Delta Watershed* describes actions for individual habitats and species, and *Volume II: Ecological Management Zone Visions* describes actions for the 14 ecological management zones that comprise the geographic target area. An additional volume, *Strategic Plan for Ecosystem Restoration*, specifies the programmatic goals and objectives and addresses various implementation issues.

44 CALFED Bay-Delta Program, *Conservation Agreement Regarding Multi-Species Conservation Strategy*, August 28, 2000, p. 9.

stressors in each of the four regions (Bay, Delta, Sacramento River, and San Joaquin River); the milestones in each region are similar. In addition, there are separate milestones for research. The milestones range from specific to broad, and many have multiple components. They tend to be specific, quantified, and/or action-oriented. For example, habitat restoration milestones list numbers of acres to be restored, and research milestones focus on taking remedial action after the research is concluded. (The milestones do not encompass all the activities of the ERP, such as education and outreach.)

- **ROD.** The ROD incorporates three major commitments. First, the ROD refers to the more than 600 actions in the program plan, and then states that the ERP includes but is not limited to a list of 10 actions plus one complementary action.[45] According to Authority staff, this list is not a list of actions to be completed during Stage 1, but is a summary of the 30-year program. The actions, which are summarized below, are somewhat broad, but include specific components:

  1. Implement at least five specified large-scale restoration projects (e.g., Clear Creek).
  2. Improve fish passage by removing or modifying specified dams, and study the re-introduction of wild salmon and steelhead to the Upper Yuba River.
  3. Restore habitat in specified areas in the Delta, and establish 8,000-12,000 acres of wildlife friendly agriculture.
  4. Restore habitat and hydraulic needs on Frank's Tract; begin implementation by the end of Stage 1.
  5. Acquire 100 thousand acre-feet (TAF) of water per year by the end of Stage 1 to improve salmon spawning and juvenile survival (also known as the Environmental Water Program).
  6. Complete protection/restoration of the Sacramento River meander corridor, including easement and/or purchase of 15,000 acres by the end of Stage 1.
  7. Implement an invasive species program (prevention, control, eradication).
  8. Assess the need for additional fish contamination monitoring and advisories. If needed, fund monitoring, outreach, and pollution prevention and control.

45 CALFED Bay-Delta Program, *Programmatic Record of Decision,* August 28, 2000, p. 35.

9. Assist existing agency programs to improve water quality (i.e., address turbidity, sedimentation, low dissolved oxygen, pesticides, trace metals, mercury, selenium, salt, and toxicity of unknown origin).

10. Improve dissolved oxygen conditions in the San Joaquin River near Stockton. Finalize Total Maximum Daily Loads for dissolved oxygen precursors and begin implementing source controls (specified actions for end of 2001, June 2002, and end of 2002).

11. Implement integrated flood management, ecosystem restoration, and levee restoration pursuant to a specified comprehensive state-federal study (complementary action).

Second, the ROD incorporates the MSCS-ERP milestones for Stage 1. Third, the ROD includes a commitment for the Science Program, to "monitor and evaluate implementation of the ERP and conduct pertinent research."[46] The research commitment is a broad, open-ended component.

- **Draft Stage 1 Implementation Plan.** In August 2001, the ERP, with substantial involvement of the Science Program, issued the *Draft Stage 1 Implementation Plan* (DS1 Implementation Plan). ERP staff view the DS1 Implementation Plan, rather than the ROD, as the document that provides direction during Stage 1.

  The DS1 Implementation Plan is organized into five regions (Bay, Delta, Sacramento River, San Joaquin River, and Multi-Regional). For each region there is a set of priorities and related actions. Altogether there are 35 priorities and 177 actions. The priorities are similar, because they are based on the six strategic goals, but they are tailored to each region.

  The DS1 Implementation Plan actions range from specific to broad, and many have multiple components. They tend to be somewhat general and lacking in quantified targets, and they include numerous research activities. For example, a typical habitat restoration action describes the location to be restored but lacks any mention of acres to be restored. Research actions tend to focus on understanding the issue rather than taking remedial action. According to Authority staff, many of the research actions are related to the research commitment in the ROD.

Although the three guiding documents described above are related in content, they do not directly correspond to each other. That is, a single listed ROD

46 Ibid.

action may correspond to multiple milestones, and some milestones (especially research milestones) do not correspond to any of the listed ROD actions. A DS1 Implementation Plan action may address one or more ROD actions or milestones, or may be designed to satisfy the program's research needs. All the documents, however, derive from the program plan and the strategic goals and objectives and are compatible.

II. Findings and Observations

See Appendix H, Ecosystem Restoration Program, for a detailed discussion supporting the findings and observations.

A. Implementation Status

Funding. The commitment of at least $150 million in annual funding appears to have been met on a cumulative basis, though not met for each individual year. As noted throughout this report, the fiscal information provided by the Authority was not validated or verified for purposes of this report.

Milestones. The Milestones Assessment, completed in September 2004, concluded that 80 percent of the milestones were on or ahead of schedule. This accomplishment could be a significant achievement; however, some skepticism may be warranted because the assessment was a self-assessment (as required by statute), and because anything less than "satisfactory progress" could have resulted in serious consequences, i.e., reconsideration of the issue of reducing water exports from the Delta in order to protect fish, pursuant to the Conservation Agreement. Further, achievement was uneven—some of the "on schedule" determinations were overly optimistic because they were based on planning rather than implementation, and in some cases progress was due to independent external entities. It may be a challenge for the ERP to fully achieve the milestones by the end of Stage 1, because activities will need to be completed, not merely initiated.

ROD Actions. The ERP's progress toward the 11 ROD actions is mixed. Four actions appear to be on schedule (# 7 nonnative invasive species; #8 fish advisories; #9 water quality; and #11 comprehensive study). Three actions addressing multiple geographic areas and requiring multi-stage projects appear to be partly on or ahead of schedule and partly behind (#1 large-scale restoration projects; #2 fish passage; and #3 Delta habitat). Three actions appear behind schedule (#5 environmental

water program; #6 Sacramento River meander; and #10 dissolved oxygen). One action is no longer applicable (#4 Frank's Tract).

Goals and Objectives. Based on the level of program activity, the ERP in general appears to be working actively toward its six strategic goals, except for harvested species, which is benefiting from actions taken toward the other goals. Nonnative invasive species appears to be a low priority, and minimal funding has resulted in a program that is primarily administrative. Progress on habitats and ecological processes is evident but mixed. Water quality appears to have made a good start, particularly with the Mercury Strategy (see Appendix H for further explanation). Early results of a few restoration projects are promising for species recovery.

B. Other Issues

Our review also identified the following issues in the ERP that may warrant further analysis:

Communication

- The ERP understands its mission and strategic goals and objectives; however, it has had difficulty translating the 600 programmatic actions in the program plan into a focused program that is easily explained and understood.
- There are several ERP documents that describe actions for Stage 1, including some (not discussed in this report) that are not used, which is confusing to people who do not know which documents are used or not used. The ERP has not clearly communicated to which extent the ROD, milestones, and DS1 Implementation Plan drive the program.
- Some of the information in the *2004 Annual Report* regarding the milestones targets was incorrect, and some milestones were missing from the *2004 Annual Report*.

Performance Measures. The ERP tracks the outcome of individual projects, and has tracked the progress of milestones; however the ERP has struggled with translating these measurements into indicators of achievement for the program's goals and objectives. The ERP has also struggled with the development of broad outcome measures that indicate ecosystem response in a comprehensive manner.

Priorities

- The ERP's broad scope and multi-faceted approach had led to difficulties in setting and managing priorities. Most projects thus far have been funded based on the technical quality of the proposals, rather than on priority. The DS1 Implementation Plan, which was supposed to set priorities for Stage 1, called for projects in 168 areas, although the program funded only 100 projects pursuant to this plan. Achievement of the milestones was a regulatory requirement for Stage 1 priority, but projects were not initially linked to the milestones, and the Milestones Assessment revealed uneven progress.
- The ERP funded 30 percent of its projects as directed actions, rather than competitive grants, in order to fund "high priority" activities, although there did not appear to be a clear process for determining these priorities.

Program Records

- The ERP's project database has had major deficiencies for years. Project data were entered into it for the first time for purposes of this study, and a major effort was made to verify the data; however, there were problems with quality control as well as data production.
- The program lacks a database of projects that ties to program funding. Authority staff were eventually able to tie project fiscal data to the Authority's fiscal records; however, there is no ongoing mechanism to do so.
- The program has not tied projects to ROD actions, and did not tie projects to milestones prior to the Milestones Assessment.

XI. Watershed Management

I. Program Description

Watershed management occurs at the local level, and involves landowners, governmental agencies, and community groups. The Watershed Management program element provides grants to local entities to strengthen local watershed management in support of CALFED's objectives for clean, reliable water, and ecosystem health. The program seeks to strengthen local management capacity to result in improved management of watersheds, improvements in watershed conditions, and ultimately improvements in the health of the Bay-Delta system. The Watershed Management program element funds local activities and watershed personnel, trains local personnel involved in watershed issues, and provides technical assistance to support local watershed efforts.

The Watershed Management program element functions under the auspices of an Interagency Watershed Advisory Team, which is comprised of federal and state agency representatives, and the Bay-Delta Public Advisory Committee's Watershed Subcommittee, which is open to all interested members of the public. Watershed Management staff maintain contact with and promote cooperation among local groups and industries that affect watershed use.

The implementing agencies are: the Resources Agency, State Water Resources Control Board, Department of Water Resources, US Department of Agriculture's Natural Resources Conservation Service, Department of Fish and Game, US Fish and Wildlife Service, and US Environmental Protection Agency.

A. Goals

According to the program plan, the goals of the Watershed Management program element are "to provide assistance—both financial and technical—for watershed activities that help achieve the mission and objectives of CALFED, and to promote

collaboration and integration among existing and future local watershed programs."[47] Although the goal is stated in slightly different ways in other program documents, CALFED staff subscribe to the version in the program plan.

The program plan also contains seven principles for community involvement and support to which watershed efforts must adhere in order to receive assistance from the Watershed Management program element. The principles specify, among other things, that activities must: be community-based (e.g., involve landowners, local leaders, and diverse community interests); address multiple watershed issues; be coordinated and supported by multiple government agencies and community organizations; provide for ongoing implementation; and include monitoring.

B. Program Commitments for Stage 1

Actions for Stage 1 are described in both the ROD and the program plan. The ROD actions, however, are very narrowly defined, whereas the program plan represents the full range of activities being conducted during Stage 1.

- **ROD.** The actions described in the ROD are summarized as follows:

  1. In the first year, establish a grant program to solicit, evaluate and fund local projects that contribute to achieving CALFED goals (includes types of projects to be funded and priorities).

  2. By the end of 2002, develop program performance measures and monitoring protocols consistent with the CALFED Science Program.

- **Program Plan.** There are nine Stage 1 actions in the program plan (most of which are interrelated), which are summarized as follows:

  1. Fund and implement locally led watershed restoration, maintenance, conservation, and monitoring activities that support CALFED goals (Years 1-7).

  2. Assist local watershed groups and government agencies to address common issues, and to ensure effective communication and implementation among government and stakeholder groups (Years 1-7).

47 CALFED Bay-Delta Program, *Watershed Program Plan*, July 2000, p. 1-7.

3. Implement a funding process and provide watershed stewardship funds to build the capacity of locally led watershed organizations that ensure participation of local landowners (Years 1-7).

4. Improve use and usefulness of information clearinghouse functions (Years 3-7).

5. Ensure that grantees complete environmental documentation and permitting; assist as appropriate (Years 1-7).

6. Evaluate benefits (including economic) that accrue from watershed plans and projects (Years 3-7).

7. Establish, fund, and maintain watershed restoration and maintenance assistance to aid local groups and private landowners with projects (Years 1-7).

8. Collaborate with other CALFED and non-CALFED programs (Years 1-7).

9. Work with stakeholders and the Legislature to develop a statewide umbrella watershed management act (Year 1).

II. Findings and Observations

See Appendix I, Watershed Management, for a detailed discussion supporting the findings and observations.

A. Implementation Status

ROD Actions. The Watershed Management program element has completed its two ROD actions. It has implemented and continues to implement the grant program pursuant to the specified priorities. Performance measures have been developed (17 months late), but are not yet in use, and it is not clear to what extent they will be used.

Program Plan Commitments. The Watershed Management program element has implemented and continues to implement all nine of its program plan commitments.

Goals. The program appears to be meetings its goals.

B. Other Issues

Our review also identified the following issues in Watershed Management that may warrant further analysis:

Communication. Performance information has been difficult to understand and interpret, and its significance in terms of the program's goals has not always been clear. Some of the information reported to date has also been inconsistent. For example, the geographic scope of the Watershed Management program element is unclear, because the various maps show different boundaries.

Performance Measures. Efforts have been made to build performance measures into most program activities, including competitive grants, watershed coordinators, and partnership seminars; however, these disparate measures have not been translated into overall measures for the program. Also, five new performance measures are not integrated with previously used measures that have appeared in the multi-year program plans and annual reports. The *Watershed Program Status Review (Years 1-4),* conducted in 2004, appears to be a solid effort to assess the strengths and weaknesses of the grant program, and to shape future direction.

Program Records. The financial data in the projects database and the Authority's financial records are inconsistent. There may be reconciling factors; however, those issues were outside the scope of our review.

XII. Science Program

I. Program Description

The Science Program supports the entire CALFED program, including its objectives for water quality, ecosystem restoration, water supply reliability, and levee system integrity. According to the ROD, the purpose of the Science Program is to provide a comprehensive framework and develop new information and scientific interpretations necessary to implement, monitor, and evaluate the success of the CALFED program, and to communicate to managers and the public the state of knowledge of issues critical to achieving CALFED goals.[48] The Science Program performs some of its functions through directly funding projects as well as providing grants. The implementing agency is the California Bay-Delta Authority (Authority).

A. Organizational Structure and Vision

There are a number of science-related entities included in the CALFED program, as follows:

- **Science Program**—Established in accordance with the ROD, and formalized as a state entity in 2003 by the California Bay-Delta Authority Act (CBDA Act), the Science Program is a statutorily defined CALFED program element.
- **Lead Scientist**—Established in accordance with the ROD, and authorized in 2003 by the CBDA Act, the Lead Scientist is appointed by and reports directly to the Authority's Board.
- **Independent Science Board (ISB)**—Created in accordance with the ROD, authorized in 2003 by the CBDA Act, and formally established in 2003 by Authority Resolution 03-08-03, the ISB is a panel of independent scientists nominated by the Lead Scientist and adopted by the Authority's Board.

48 CALFED Bay-Delta Program, *Programmatic Record of Decision,* August 28, 2000, p. 74.

- **Interagency Ecological Program (IEP)**—The IEP, in existence for over 30 years, is a partnership of state, federal, and nongovernmental agencies that conducts baseline scientific monitoring and research in the Sacramento-San Joaquin Estuary.

Our review indicates that the goals/objectives, responsibilities, and reporting relationships of these various entities currently are not clearly defined or understood. For example, the current organizational chart reflects a direct reporting relationship of the Science Program to both the Lead Scientist (who in turn reports directly to the Authority's Board) and the Authority's Director. Program staff indicate that the reporting relationship of the Science Program to the Authority's Director should be reflected by a dotted line (to reflect only an administrative reporting relationship), and that the goals/objectives, responsibilities, and reporting relationships of the various science-related entities are still being refined.

It should be noted that the vision for the Science Program is set by the Lead Scientist. The vision for the Science Program has changed since the program was initiated. Initially, the Science Program's focus was of an administrative nature providing oversight, coordination, and communication to the various program elements. Most recently, the Science Program's focus has been of a scientific/technical nature performing more direct science/research for the various program elements. Currently, the Authority is conducting a search for a new Lead Scientist; therefore, the vision for the Science Program may change again.

B. Goals and Objectives

According to the Authority's website, the long-term goal of the Science Program is to establish a body of knowledge relevant to CALFED actions and their implications. That body of knowledge, both in perception and reality, must be unbiased, relevant, authoritative, integrated across program elements, and communicated to the scientific community, CALFED agency managers, stakeholders, and the public.[49]

49 http://science.calwater.ca.gov/, visited July 8, 2005.

The *Multi-Year Program Plan (Years 6-9)* further indicates that three documents set the framework and establish the goals/objectives for the Science Program, as follows:[50]

1. **ROD and attached Implementing Memorandum of Understanding (MOU).**[51] Both the ROD and MOU broadly articulate the Science Program's purpose. The ROD also includes broad program commitments as well as several measurable Stage 1 actions (see Program Commitments for Stage 1 below).

2. **CBDA Act.** Section 79452 of the Water Code broadly specifies the purpose of the Science Program.[52]

3. **Authority's Resolution 03-08-03 (dated August 14, 2003).** This Resolution primarily establishes the ISB and outlines its associated responsibilities, and broadly describes the goals of the Science Program.

C. Program Commitments for Stage 1

The guiding documents for the Science Program primarily discuss broad, open-ended program commitments, which are not possible to evaluate given the time frame of our review. Therefore, our review focuses on assessing the status of the following ROD actions, as well as considering whether the Science Program is working toward its long-term goals and objectives.

1. Appoint an independent science board by the middle of 2001.

2. Appoint an independent science panel for the Environmental Water Account (EWA) by the middle of 2001.

3. Coordinate existing monitoring and scientific research programs.

4. Refine the set of ecological, operational, and other predictive models that will be used in the evaluative process by the end of 2001.

5. Establish performance measures and indicators (and a consistent strategy of ongoing development of these) for each of the program areas.

50 Program staff indicate that the Implementation Plan is not viewed as a guiding document for the Science Program; thus, our review did not include the actions identified in that document.

51 MOU refers to the Amended and Restated Implementation Memorandum of Understanding, dated September 2003.

52 The CBDA Act also governs the activities of the Lead Scientist and ISB; however, assessing the effectiveness of the activities related to those entities is outside the scope of our review and thus not addressed in this report.

6. Develop an annual science report, format, and content (including specified content), and prepare the first annual report by the end of 2001.

7. Implement the Comprehensive Monitoring, Assessment and Research Program (CMARP).

II. Findings and Observations

See Appendix J, Science Program, for a detailed discussion supporting the findings and observations.

A. Implementation Status

ROD Actions. The Science Program has made some progress on all of its ROD actions; however, there has not been significant progress on the following key actions:

- Coordination of monitoring and research programs (#3 and #7).
- Refining predictive models (#4).
- Developing performance measures (#5).
- Annual reporting of specified material, including (1) the status of species and effectiveness of efforts to improve conditions, and (2) the assessment of progress and effectiveness of each program element (#6).

Goals and Objectives. Our review indicates that the Science Program's activities generally appear to be consistent with its long-term goal, and that progress has been made in some areas but not in others. Given that there has not been significant progress in several key areas (including coordination of monitoring and research programs, refining predictive models, and developing performance measures), it is unclear whether the Science Program is making meaningful progress toward its long-term goal.

B. Other Issues

Our review also identified the following issues in the Science Program that may warrant further analysis:

Communication

- The Science Program's tracking and reporting methodology is easy to follow and effectively communicates to stakeholders the Science Program's activities; however, program documents inconsistently and/or erroneously reflect the status of the ROD action to develop an annual science report (including specified content), which could be confusing or misleading to stakeholders.
- It does not appear that the Science Program adequately communicates to stakeholders key program changes (e.g., implementation of the CMARP has been unsuccessful to date and has undergone significant scope changes).

Organizational Structure. The CALFED program and the Authority have been in existence since 1994 and 2003, respectively; however, the goals/objectives, responsibilities, and reporting relationships of the various science-related entities currently are not clearly defined or understood.

Performance Measures. The Science Program currently reports on some inputs (e.g., dollars invested) and outputs (e.g., workshops conducted); there are no stated outcome measures for the Science Program.

Priorities. There is a risk that the Science Program does not have sufficient long-term focus to best use available funding. This view is based on the fact that the project and funding priorities are largely determined by the Lead Scientist, and the Lead Scientist incumbent will change, which may result in significant changes in project and funding priorities.

Program Records. Currently, the Science Program and the Authority's Policy and Finance Unit track and report project funding for the Science Program differently, potentially resulting in confusion to stakeholders.

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XIII. Oversight and Coordination

I. Program Description

The Oversight and Coordination (O&C) function is not defined as a program element in statute; however, it is included in our review because it was included in the ROD (referred to as Governance), its objectives and accomplishments are included in the annual reports, and a multi-year program plan is prepared for it. The O&C function supports the entire CALFED program, including its objectives for water quality, ecosystem restoration, water supply reliability, and levee system integrity. Pursuant to the California Bay-Delta Authority Act (CBDA Act), the California Bay-Delta Authority (Authority[53]) has O&C responsibilities for the 24 state and federal agencies that make up the CALFED consortium.[54]

The ROD and CBDA Act primarily mandated broad, long-term responsibilities for O&C; only a few items contained measurable Stage 1 program commitments. Assessing the implementation status of O&C is challenging, therefore, because we do not believe that an assessment of whether the Authority has completed the few date-specific actions adequately addresses whether the Authority is effectively providing O&C as envisioned in the ROD and CBDA Act.

Concurrently with our review, the Little Hoover Commission is examining the governance of the CALFED program in its entirety, including the Authority Board and the Bay-Delta Public Advisory Committee (BDPAC), and KPMG, a consulting firm, is conducting an internal business process review of the Authority, including its oversight and coordination functions. As such, the focus of our review is a high-level

53 In this section, "Authority" encompasses both the Authority Board (24-member board established by the CBDA Act) and the "Authority staff" (the Director appointed by the Governor pursuant to the CBDA Act and his/her staff). Distinctions between the Authority Board and the Authority staff are made where appropriate.

54 The CALFED consortium consists of the Authority and 24 state and federal agencies, for a total of 25 agencies.

assessment of whether the activities being conducted by the Authority staff are consistent with the O&C function envisioned in the ROD and CBDA Act.

A. ROD and Implementation Plan

In terms of governance of the CALFED program, the ROD called for an interim process, which consisted of a memorandum of understanding[55] among numerous state and federal agencies, executed contemporaneously with the ROD, as well as a long-term proposal, which envisioned a joint federal-state commission (which was subsequently established as the Authority) and an advisory committee (which was subsequently established as the BDPAC). It also specified the following mandate, responsibilities, and commitments:

Overarching Mandate—The overarching mandate of the joint commission would be to assure effective, balanced, and coordinated implementation of the CALFED program by maintaining visibility inside and outside of the government, assuring agency coordination, helping secure funding, and providing policy leadership and accountability.

Major Responsibilities—The major responsibilities of the commission would be as follows:

- Reviewing and approving program priorities and budget proposals.
- Assessing and reporting on progress toward program goals.
- Coordinating within CALFED and with related programs to maximize resources and reduce conflicts.
- Resolving disputes among CALFED agencies.
- Maintaining contact with and receiving communications from the public and the media, as well as Congress and the Legislature.

Implementation Commitments—The ROD also identified the following "Implementation Commitments" related to governance of the CALFED program:

1. **Local Leadership**—Rely on advice and support from leadership in local communities.

55 Attachment 3 to the ROD, *Implementation Memorandum of Understanding*, dated August 28, 2000, was replaced in September 2003 by the *Amended and Restated Implementation Memorandum of Understanding*.

2. **Stakeholder Consultation**—Solicit and incorporate diverse stakeholder perspectives; establishment of a new federal advisory committee.

3. **Environmental Justice**—Consistent with federal Executive Order 12898, Title VI of the Civil Rights Act of 1964, and recent state legislation, seek fair treatment of people of all races, cultures, and incomes, such that no segment of the population bears a disproportionately high or adverse health, environmental, social, or economic impact from CALFED programs, policies, or actions. Specifically, by December 2000, CALFED agencies will collaborate with environmental justice and community stakeholders to develop a comprehensive environmental justice workplan across all program areas, as specified.

4. **Tribal Consultation**—Consistent with the President's April 29, 1994 memorandum, assess the impact of CALFED project-specific plans, projects, and activities on tribal trust resources and tribal government rights and concerns, and actively engage federally recognized tribal governments in the planning and development of projects.

5. **Land Acquisition**—Preserve agricultural lands and minimize impacts to agriculture consistent with meeting program goals, including: partner with landowners (e.g., easements); acquire fee title to land from willing sellers only; seek implementation through technical/financial assistance to locally based, collaborative programs (e.g., Sacramento River Conservation Area/SB 1086 program).

6. **CALFED Agency Coordination**—Extend coordinated and cooperative state and federal agency institutional relationships.

7. **Integration of Nonsignatory Agencies**—Work with federal and state agencies that implement other programs that relate to CALFED's mission.

8. **Environmental Documentation**—Fulfill legal responsibilities for environmental analysis, documentation, and permitting pursuant to the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and all other environmental laws.

9. **Permit Clearinghouse**—Establish a clearinghouse for obtaining the necessary permits and approvals by December 2000.

10. **Adaptive Management/Science**—Use science-based adaptive management.

11. **Beneficiaries Pay**—Costs should, to the extent possible, be paid by the beneficiaries of the program actions.

12. **Compliance with Water Rights Laws**—Comply with California's water rights laws, including area-of-origin statutes, applicable to actions.

13. **Project Operations**—Operators of the State Water Project (SWP) and Central Valley Project (CVP) will continue to meet regularly with the fishery agencies through the CALFED Operations Group (Ops Group).

14. **Coordinated Operation Agreement**—Department of Water Resources (DWR) and US Bureau of Reclamation intend to modify the 1986 CVP/SWP Coordinated Operation Agreement (COA); renegotiation will commence by mid 2001.

Additionally, the *Implementation Plan* included a detailed discussion of a governance plan for the CALFED program, indicating that "the decision-making process and governance structure for implementation of the CALFED Preferred Alternative is a key feature in assuring successful program implementation."[56] The *Implementation Plan* highlighted the fact that the CALFED implementation phase, commencing with the ROD, would require a stronger, more formal governance structure than the planning phase had required. For example, in the planning phase, authority for funding and program implementation was dispersed throughout many state and federal agencies and each agency retained its own authority but voluntarily agreed to coordinate with other agencies. The *Implementation Plan* further indicated that additional refinement and necessary details of the governance plan would occur in the ROD and implementing statute; however, it appears that neither the ROD nor the CBDA Act implemented a governance structure as strong as that envisioned in the *Implementation Plan*. Our review is based primarily on the ROD and CBDA Act.

B. CBDA Act

In 2002, legislation implementing the long-term proposal envisioned by the ROD was enacted. Specifically, the CBDA Act established the Authority within the Resources Agency as the joint federal-state body responsible for implementing the ROD. The advisory committee, BDPAC, envisioned by the ROD as part of the long-term proposal, had been established by a US Department of Interior charter dated June 8, 2001, and filed on July 2, 2001. (The charter was subsequently revised in 2003 and 2005.)

56 CALFED Bay-Delta Program, *Implementation Plan, Final Programmatic EIS/EIR Technical Appendix,* July 2000, p. 4-1.

Essentially, the Authority was established to ensure efficiency, transparency, and accountability in decision making in implementing the CALFED program. To do so, the CBDA Act outlined numerous intentions for the Authority (findings and declarations) and imposed numerous mandates on the Authority (powers and duties).

The CBDA Act also imposed numerous mandates directly on the implementing agencies, sometimes causing challenges in determining which entity (i.e., the Authority or implementing agency) has authority and/or responsibility for a function or activity. For example, regarding balanced implementation of the CALFED program, Water Code Section 79403.5(a) specifies that the Authority shall coordinate the activities of the implementing agencies to promote balanced implementation that meets the goals and objectives of the CALFED program. Water Code Section 79403.5(b), however, specifies that state agencies, whenever feasible, shall carry out their authority and responsibilities in a manner that is consistent with the goals of the CALFED program to promote cooperative and coordinated actions and programs that result in balanced solutions. As another example, regarding implementation of the CALFED program, Water Code Section 79420(a)(9) provides the Authority the power to adopt regulations necessary to implement the CALFED program, but specifies that such power does not extend to the adoption of regulations to "implement" any of the program elements except the Science Program. Ultimately, however, notwithstanding the numerous mandates imposed on the Authority, Water Code Section 79423(l) indicates that nothing in the CBDA Act limits or interferes with the final decision-making authority of the implementing agencies.

The scope of our review does not include assessing the implementing agencies' progress in implementing the ROD or CALFED program relative to O&C, nor whether their activities are consistent with the CBDA Act.

C. Activities and Goals

As noted above, the ROD and CBDA Act primarily mandated broad, long-term responsibilities for O&C. As a result, the Authority staff interpreted the ROD and CBDA Act as guiding documents and developed the following categories to track and report O&C activities, which are referred to in the *Multi-Year Program Plan (Years 6-9)* as goals:

1. Financing
2. Program Tracking

3. Regional Coordination
4. Public Information and Outreach
5. Support for the Authority Board and the BDPAC (including its subcommittees)
6. Coordination of Environmental Justice Activities
7. Coordination of Tribal Activities
8. Water Management
9. Annual and Multi-Year Program Planning
10. Annual Report of Progress and Balance

The Authority staff have further interpreted more specific objectives for many of the goals.

II. Findings and Observations

See Appendix K, Oversight and Coordination, for a detailed discussion supporting the following findings and observations identified during our review, which may warrant further analysis.

Assessment of O&C Activities. Because the ROD and CBDA Act primarily mandated broad, long-term responsibilities for O&C, assessing the implementation status of O&C is challenging. Our high-level assessment of whether the activities being conducted by the Authority staff are consistent with the O&C function envisioned in the ROD and CBDA Act indicates the following:

- Most of the Authority's O&C activities are consistent with the ROD's implementation commitments and CBDA Act's mandates.
- In some cases, it does not appear that any of the Authority's O&C activities address the ROD's implementation commitments and/or CBDA Act's mandates (i.e., land acquisition, integration of nonsignatory agencies, environmental documentation, permit clearinghouse, adaptive management/science, and coordinated operation agreement). As a result, the Authority's assertion that progress is being made on all O&C tasks may be incorrect.

- In some cases, it appears that the Authority's O&C activities may be broader than envisioned in the ROD and/or CBDA Act (i.e., environmental justice and tribal consultation activities).

The Authority's Statutory Authority is Unclear. The ROD and *Implementation Plan* envisioned broad and strong O&C responsibilities for the Authority, but it does not appear the CBDA Act provides the commensurate authority necessary to achieve the desired outcomes. For example, although there has been significant effort by the Authority to implement a beneficiaries pay principle, it is not within the Authority's existing statutory authority to do so.

CALFED Implementation Lacks Accountability. It is not always clear whether the Authority or implementing agencies are responsible for a function or activity, which may result in a lack of ownership and accountability. For example, the CBDA Act indicates that the Authority was established to ensure accountability in decision making in implementing the CALFED program, but specifies that final decision-making authority rests with the implementing agencies.

Communication

- The focus of the annual reports and multi-year program plans appears to be on highlighting program accomplishments and/or activities rather than to measure the program's performance against the ROD and/or guiding statute or to communicate program changes.
- Reporting requirements are not always completed timely.
- Decision makers and stakeholders may not view the annual reports and multi-year program plans as useful for communicating CALFED's implementation status or performance.

Interagency Coordination. The Authority effectively provides a forum for CALFED agencies to meet and discuss interrelated program issues. On the other hand, the time and resources required for interagency coordination as well as consensus building may result in inefficiencies in the CALFED implementation process.

Performance Measures. The O&C function currently reports some input and output measures; however, because of the nature of the O&C function, any outcome measures likely would be qualitative rather than quantitative.

Program Records. Discrepancies often exist between the fiscal information tracked by the implementing agencies and/or the Authority's program staff and the

Authority's fiscal staff. There may be reconciling factors; however, those issues were outside the scope of our review.

Transparency. The Authority effectively provides transparency to the CALFED process, including providing a forum for stakeholder and public input via the Authority Board and BDPAC meetings. On the other hand, the time and resources required for stakeholder and public participation as well as consensus building may result in inefficiencies in the CALFED implementation process.

XIV. Program Balance

A fundamental principle of the CALFED program is that implementation should be balanced. Although the focus of our review was on the status of the program's implementation, our review would not be complete without considering whether the program's implementation has been balanced to date.

Statutory Definition

"Balanced implementation" is statutorily defined in Water Code Section 79402(b) to mean "the implementation of projects, programs, or other actions in a manner that meets both of the following requirements:

1. Is consistent with the implementation schedule and milestones described in the CALFED Bay-Delta Program Record of Decision, dated August 28, 2000, or as it may be amended.

2. Results in concurrent improvement in all program elements in a manner that ensures that improvements in some program elements are not made without corresponding improvements in other program elements."

Responsibility for achieving balanced implementation is shared by the Authority and the implementing agencies. The Authority is required to coordinate the activities of the implementing agencies to promote balanced implementation, pursuant to Water Code Section 79403.5(a), and to develop policies, make decisions, and provide direction "to achieve balanced implementation, integration, and continuous improvement in all program elements," pursuant to Water Code Section 79421. State agencies are required, whenever feasible, to be consistent with CALFED to promote cooperative, coordinated, and balanced solutions, pursuant to Water Code Section 79403.5(b).

Annual Review of Progress and Balance

Both state and federal law require an annual review of progress in implementing the program according to the schedule and objectives, and require the preparation of a new schedule to achieve program balance if the original schedule has not been adhered to. The laws do not require a positive finding of balance. Specific provisions are:

State Law—Requires the Authority annually to review the progress in implementing the program by November 15, and to submit a report by December 15 on the implementation status of each program element to the Governor, Secretary of the Interior, Legislature, and Congress. If the Authority, Governor, or Secretary of the Interior determines that the program schedule or objective has not been substantially adhered to, then a revised schedule that will achieve balanced progress must be prepared, in coordination with the Bay-Delta Public Advisory Committee (BDPAC). (See Water Code Sections 79421(e), (f), and (g).)

Federal Law—Requires the Secretary of the Interior, in cooperation with the Governor, to review annually, by November 15, progress in implementing the program based on consistency with the ROD and balance in achieving the program's goals and objectives. If the Secretary or Governor determines that either the implementation schedule has not been substantially adhered to or that balanced progress in achieving goals and objectives is not occurring, then a revised schedule must be prepared, in coordination with the BDPAC. (See Public Law 108-361, Section 105(b).)

To date, none of the state or federal annual reviews have resulted in a finding that the program is not balanced.

Methodology

As noted above, the statutory definition dictates that a determination of balance be based on: (1) consistency with the ROD implementation schedule and milestones, and (2) concurrent and corresponding improvement in all program elements.

Determining consistency with the ROD's schedule and milestones sounds simple; however, because each program element includes numerous ROD actions with individual schedules and milestones, and some actions include multiple milestones, such a determination is often subject to interpretation. We approached the issue of schedule and milestones in a generally quantitative manner, by considering for each

program element the number of ROD actions that were completed, not completed, or were in other categories, and arriving at a summary assessment of the degree to which the ROD actions were consistent with the schedule.

Assessing concurrent and corresponding improvement was more subjective than determining consistency with schedules and milestones, because improvement is not inherently quantifiable or explicitly defined. One alternative was to consider relative expenditures to date, in comparison to the original cost estimates in the ROD. As noted in Table II-2 (in Section II, Background), funding for the program elements ranged from 18 percent to 171 percent of the amount originally estimated. This disparity suggests a lack of balance.

We believe it is most meaningful to focus on what each program element accomplished, not only in terms of the ROD actions, but also in terms of goals, objectives, and other relevant program commitments. Therefore, we made a summary assessment of each program element regarding the extent to which it fulfilled its commitments. Although we assessed each program element in terms of its goal, we recognize that goals by their nature are long term and usually are to be pursued over the life of a program. Because CALFED is a 30-year program, some program elements had goals for which it is premature to expect any measurable progress; others, however, had demonstrated progress toward their goals. We also believe that concurrent improvement need not be measured absolutely, but could be assessed in a relative sense; that is, we believe that it is possible to address concurrent and corresponding improvement in terms of how programs compared on their overall achievement level.

The information used for the summary assessments is based on the findings and observations in the previous sections, as supported by the detail in the appendices. Our assessment of balance is constrained by the general limitations of this report—the report was conducted in a short period of time and is largely administrative in nature.

Findings

After completion of the summary assessments and comparison of the program elements to each other, it was apparent that some program elements have achieved more progress than others. Program elements that appeared to have made the most improvement in terms of implementing their program commitments were designated "high," and those that made the least were designated "low"; program elements

for which the progress was neither high nor low, or was mixed were designated "medium." These results are shown in Table XIV-1, which displays the relative implementation status for each program element. The Water Transfer and Watershed Management program elements were designated high; the Conveyance, Levee System Integrity, and Science Programs were designated low; and the remaining six program elements were designated medium.

Table XIV-1. Relative Implementation Status by Program Elements

Program Element	Relative Implementation Status	Comments
Storage	Medium	• No significant progress on surface storage; groundwater storage on schedule. • Assessment of goal is premature.
Conveyance	Low	• Behind schedule on key ROD actions. • Mixed accomplishment of objectives. • Little or no progress toward goal.
Water Transfer	High	• Majority of ROD actions ongoing or completed (excluding several no longer applicable). • Appears to have made progress toward goals.
Environmental Water Account	Medium	• Ongoing fulfillment of ROD actions. • Uncertain if regulatory funding commitment has been met. • Goal partly met, partly uncertain.
Water Use Efficiency	Medium	• Mixed accomplishment of ROD actions. • Progress being made on majority of objectives. • Assessment of goal is premature.
Drinking Water Quality	Medium	• Mixed accomplishment of ROD actions. • Appears to be working well toward goal.
Levee System Integrity	Low	• No significant progress on ROD actions; several may no longer be applicable. • Unclear if making meaningful progress toward goal.
Ecosystem Restoration	Medium	• Mixed accomplishment of ROD actions and regulatory milestones. • Regulatory funding commitment was met on cumulative basis though not met for each year. • Appears to be making progress toward goals.
Watershed Management	High	• Has met commitments in ROD and Program Plan. • Appears to be meeting goal.
Science	Low	• Limited progress on key ROD actions. • Unclear if making meaningful progress toward goal.
Oversight and Coordination	Medium	• Activities mostly consistent with requirements, but effectiveness mixed.

Factors Affecting Implementation

A number of factors affected the relative implementation status of the program elements. Although both the Water Transfer and Watershed Management program elements experienced implementation issues, they were able to achieve a relatively high level of improvement because they are essentially administrative functions and are relatively straightforward. Additionally, the Water Transfer Program had been functioning prior to the ROD. Other program elements were affected to a greater degree by implementation issues, which are discussed briefly below. The examples cited are illustrative only, and are not intended to be an exhaustive list.

- **Technical Complexity.** Some program elements, such as Conveyance, Drinking Water Quality, Levee System Integrity, and Ecosystem Restoration, conducted activities of high technical complexity. Projects often involved multiple phases in which many issues and problems needed to be resolved. Feasibility studies and other activities sometimes required more time than originally anticipated. Some complex projects were delayed or suspended because project feasibility became questionable, or costs were determined to be higher than anticipated, such as the fish screens at the Delta intakes for the water projects.
- **Resources.** Some program elements suffered from inadequate staffing, inadequate funding for projects, or both, such as the Science Program. In some cases, funding was earmarked for specific projects or types of activities, such as water exchanges in the Drinking Water Quality Program. Funding was not sufficient for surface storage projects in the Storage Program, for floodway improvements in the Conveyance Program, nor for monitoring and assessment, which adversely affected the Science and Drinking Water Quality Programs.
- **Scientific Uncertainty.** Scientific uncertainty has affected several program elements. For example, insufficient information about drinking water contaminants has delayed some activities in the Drinking Water Quality and Ecosystem Restoration Programs. Uncertainty regarding how to ensure levee stability has hindered progress in the Levee System Integrity Program. Lack of knowledge regarding why pelagic fish declined in the Delta has put some activities on hold in the Conveyance Program, and has called into question the effectiveness of the Environmental Water Account.
- **Stakeholder Conflicts.** Some projects were delayed due to stakeholder conflicts, including the In-Delta storage project in the Storage Program (currently discontinued), and floodway improvements as well as increased State Water

Project pumping in the Conveyance Program. Both the Drinking Water Quality and Ecosystem Restoration Programs had ROD actions that were contingent upon the establishment of total maximum daily loads (TMDLs) through the State Water Resources Control Board's regulatory processes; those processes were controversial among stakeholders, which delayed the ROD actions.

- **Administration and Management.** Several program elements—especially Conveyance, Levee System Integrity, Ecosystem Restoration, and Science—reported significant delays in contracting, including difficulties with the contract administration process as well as an administrative freeze on contracts. In some cases, management weaknesses, such as inadequate interagency coordination or lack of direction, resulted in slow or delayed action, particularly in the Water Use Efficiency and Science Program elements.
- **Problems with the ROD.** Some of the schedules and milestones in the ROD were overly optimistic. Although some of the actions that were to be completed in a relatively short time frame had already been started, in other cases the timetables did not account for all the implementation issues (such as stakeholder conflicts, complex feasibility studies, and approval of federal funding). Examples of timeline problems include the surface storage projects in the Storage Program element, actions involving TMDLs in the Drinking Water Quality and Ecosystem Restoration Program elements, and an action requiring a federally funded feasibility study in the Drinking Water Quality Program element. Some ROD actions have become questionable due to changed circumstances or advances in knowledge; for example, the reuse of dredged material in the Levee System Integrity Program may no longer be cost-effective due to regulatory changes.

Conclusion

Table XIV-1 demonstrates that CALFED's implementation to date has not been balanced. Consistency with the ROD schedule and milestones is mixed among and within program elements, ranging from little or no consistency to high consistency. Overall improvements, considering ROD actions, goals, objectives, and other program commitments, have not been concurrent or corresponding, as some program elements have outpaced others.

It should be noted that the issue of balance hinges on the ROD; however, the ROD is not a living document. Many factors have changed since it was issued in 2000, and a number of ROD actions are no longer applicable. We also note that, in most cases, lower levels of achievement in some areas have not impeded improvements in other areas.

APPENDICES

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Appendix A. Storage Program

I. Funding[57] and Projects

A. Total Funding

For the Storage Program, the *2004 Annual Report* indicated funding of $1.26 billion for Years 1 through 5, or 171 percent of the $737 million originally estimated. Of the funds reported, 29 percent was provided by the state, 2 percent by the federal government, and 69 percent by users/local.

B. Project Funding

Funding for the Storage Program has included direct funding for surface storage planning studies, and allocation of grants and loans for groundwater projects. Table A-1 displays the specific projects, original funding estimates, and the reported amounts spent. There was a large disparity in the funding of surface water projects compared to groundwater projects during Years 1 through 5. The ROD estimate for surface storage was $423 million, but only $91 million, or 22 percent of the estimate, was received. The ROD estimate for groundwater storage was $295 million, but $1.2 billion, or 391 percent of the estimate, was received, primarily consisting of user/local funds. The absence of user/local funding for surface storage reflects the principle of "beneficiaries pay," which will occur in later years when designs are complete and beneficiaries identified.

57 As discussed in Section II, Background, the funding amounts in this report are taken from program records that have not been verified or validated.

Table A-1. Projects by Estimated Costs and Actual Funds Received
Dollars in Millions

Project	Estimated Costs for Years 1 - 5	Actual Funds Received for Years 1 - 5	Percent of Estimated Costs That Were Funded	Distribution of Funds Received in Years 1 - 5, by Fund Source			
				State	Federal	Users/ Local	Total
Surface Storage							
In-Delta	$236	$12	5%	$11	$1	-	$12
Enlarged Shasta	58	7	12%	1	6	-	7
Expanded Los Vaqueros	38	16	42%	8	8	-	16
North of Delta/Sites Reservoir	50	31	62%	27	4	-	31
Upper San Joaquin	41	11	27%	4	7	-	11
San Luis Reservoir *	-	14	N/A	14	-	-	14
Total Surface Storage	**$423**	**$91**	**22%**	**$65**	**$26**	**-**	**$91**
Groundwater Storage							
Feasibility Study Grants	$45	$35	78%	$35	-	-	$35
Implementation Grants & Loans	250	1,109	444%	246	-	$863	1,109
Technical Assistance to Local	-	8	N/A	8	-	-	8
Total Groundwater Storage	$295	$1,152	391%	$289	-	$863	$1,152
Other	$19	$17	95%	$13	$4	-	$17
Total Storage	**$737**	**$1,260**	**171%**	**$367**	**$30**	**$863**	**$1,260**

Source: California Bay-Delta Authority.

* Because the San Luis Reservoir was a complementary action, no cost was estimated in the ROD.

Groundwater storage received $289 million in state funding ($204 million more than the $85 million estimate in the ROD) and $863 million in local funding (the local amount is unconfirmed by the Authority). This program has been mostly funded through Proposition 13; however, all of the Proposition 13 funds have been allocated.

The groundwater program has also received funding from Proposition 50, and approximately $13 million is still available. It is our understanding that local water agencies have been motivated to fund groundwater projects because the state has a matching program of grants and loans. In addition, adding groundwater storage is less expensive and faster than adding surface storage, and local agencies have control over groundwater storage, as opposed to the surface storage projects, which may be controlled by one or more local, state, and/or federal agencies.

In contrast to the groundwater projects, the surface storage projects have progressed at a much slower pace than planned. A significant reason for the disparity between estimated and reported expenditures for surface storage projects is that the original $423 million estimate included $200 million for start-up construction costs of the In-Delta project; however, construction was never started.

C. Project Information

The Department of Water Resources (DWR) provided information from its program records on groundwater grants and loans funded from Proposition 13. This information has not been reconciled with the fiscal information provided by the Authority. As shown in Table A-2, 63 grants and loans were awarded in three award cycles (2000-01, 2001-02, and 2003-04), and 22 have been completed. A total of $205.6 million was awarded, and total project costs including local contributions were $1 billion. (An additional $45 million was provided to the Metropolitan Water District for a groundwater grant program.)

Table A-2. Proposition 13 Groundwater Projects Awarded and Completed, by Year of Award

Year of Award	Dollars in Millions		Number of Projects	
	Dollars Awarded	Total Project Costs	Awarded	Completed
2000-01	$18.4	$29.6	28	19
2001-02	96.2	620.5	17	2
2002-03	-	-	-	-
2003-04	91.0	408.8	18	1
2004-05	-	-	-	-
Total	**$205.6**	**$1,058.9**	**63**	**22**

Table A-3 displays the types of groundwater projects funded. Of the 63 projects, 28 were for groundwater storage construction grants, including wells, pipelines, recharge basins, water treatment facilities, pumping stations, and canals. These projects

received the vast majority of the funding. These projects take several years to complete, and only three projects have been completed to date. Note: DWR staff did not reconcile the difference between Table A-2 and Table A-3 for total project costs.

Table A-3. Proposition 13 Groundwater Projects Awarded and Completed, by Type

Type of Project	Dollars in Millions		Number of Projects	
	Dollars Awarded	Total Project Costs	Awarded	Completed
Storage construction grants	$168.0	$958.3	28	3
Recharge feasibility study	1.4	2.6	15	11
Storage pilot projects	8.9	11.7	8	3
Recharge construction loans	26.2	58.7	7	3
Storage feasibility studies	1.1	2.3	5	2
Total	**$205.6**	**$1,033.6**	**63**	**22**

The DWR also provided information about grants awarded through the Local Groundwater Assistance Program,[58] which were funded by the General Fund and Proposition 50. This program is for studies and monitoring and management activities. Projects have included groundwater management plans, installation of groundwater monitoring wells, studies of groundwater basins, and development of groundwater models. As shown in Table A-4, 129 grants and $27.8 million were awarded during the years 2000-01 through 2004-05. (Note: This funding is included in the $35 million shown in Table A-1 for Feasibility Study Grants.)

Table A-4. Local Groundwater Assistance Grants (General Fund and Proposition 50)

Dollars in Millions

Fiscal Year Awarded	Dollars Awarded	Number of Grants	
		Awarded	Completed
2000-01	$5.0	24	23
2001-02	4.4	21	21
2002-03	5.8	26	15
2003-04	6.2	28	0
2004-05	6.4	30	0
Total	**$27.8**	**129**	**59**

Note: Years 2000-01 and 2001-02 were funded by the General fund. Years 2002-03 through 2004-05 were funded by Proposition 50.

58 Pursuant to Water Code Sections 10795-10795.20. This program is sometimes identified by the bill number of the enabling legislation, AB 303, which was enacted in 2000.

II. Performance Measures[59]

As discussed in the *Multi-Year Program Plan (Years 6-9)*, the Storage Program has pursued several efforts to gauge performance of storage projects, as summarized below; however, it is not clear how these various efforts will be translated into performance measures for the Storage Program.

The Storage Program has been working with the Science Program and the Bay-Delta Public Advisory Committee (BDPAC) Water Supply Subcommittee in developing input, output, and outcome measures. To date, only input and output measures have been developed. Outcome measures such as yield (relative to increased water supply) and chloride content (relative to water quality) have been explored as part of the process to ultimately implement the "beneficiaries pay" principle.

For surface storage projects, the program has engaged in a "Common Assumptions" effort, which seeks to establish standard methods and models for assessing proposed storage projects in terms of hydrology, water quality, and economic impact. These tools appear to be part of the planning process, and it is unclear how they will be used to measure the performance of the Storage Program.

In the groundwater area, the Conjunctive Water Management Program (CWMP) within DWR (which promotes the coordinated management of surface water and groundwater) has started working with the Science Program to develop indicators for assessing proposed projects for implementation as well as implemented projects for benefits provided. It is expected that these measures will address economic efficiency, environmental benefits, water produced to meet local, regional, and statewide needs, and improvements in water quality. The CWMP expects to apply these performance measures to all groundwater projects that receive state funding. To monitor progress in groundwater management, the number and location of groundwater management plans throughout the state is being tracked; however, the *Multi-Year Program Plan (Years 6-9)* indicates that this is an imperfect indicator because local agencies are not required to submit the plans to the DWR.[60]

For the groundwater grant review process, the Storage Program and the Science Program developed analysis tools involving a standardized methodology to characterize the operations of individual projects for comparison purposes. The methodology includes projected yield, cost per acre foot of water produced, and economic efficiency (benefit-cost ratio). These indicators will be applied again to projects as they are completed.

59 See Section II, Background, for an overview of CALFED performance measures.
60 CALFED Bay-Delta Program, *Storage Program Multi-Year Program Plan (Years 6-9)*, July 2005, p. 7.

III. Accomplishments

This section reviews the Storage Program's accomplishments, first in terms of a recent self assessment, then in terms of the ROD, and finally in terms of the goals and objectives.

A. Assessment Report

In April 2005, the DWR and the US Bureau of Reclamation (USBR) published a report titled *CALFED Bay Delta Program Surface Storage Investigations Progress Report.* The report was the second periodic update (the first was issued in April 2004) on the progress of the original five surface storage projects addressed in the ROD, and therefore does not include progress on the San Luis Reservoir project. The report discusses the projects, addresses concerns, and presents the Common Assumptions modeling data. Table A-5 summarizes information from the report on the cost and projected storage capacities of the projects (storage capacity is indicated in terms of thousand acre-feet, or TAF). Compared to Table III-1 (in Section III of the report), the estimated storage capacity has been revised somewhat. The capacity and cost ranges in Table A-5 reflect multiple alternatives studied for the respective projects.

Table A-5. Revised Estimates of Capacity and Cost for Surface Storage Projects

Storage Project	Storage Capacity (TAF)	Capital Cost Estimate ($ Millions)
Shasta Lake Water Resources Investigation	300 - 635 (6.5 - 18.5 foot Raise)	$280 – $480
North-of-the-Delta Offstream Storage/Sites Reservoir	1,800	$1,300 - $2,300
In-Delta Storage	217	$700 - $800
Los Vaqueros Reservoir Expansion	200 - 400 (Range of expansion)	$870 - $1,300
Upper San Joaquin River Basin Storage Investigation	450 - 1,200 (Range of options)	$600 - $1,200

Note: There is a wide range of capital cost estimates due to the wide range of storage options, conveyance facilities, and appurtenant structures being studied. The cost estimates do not include pumping and operations and maintenance costs.[61]

Specific information about the progress of each storage project is presented in the following discussion of the individual ROD actions. It should be noted that the status of the In-Delta project as reported in the Progress Report reflects it as a viable

61 Department of Water Resources and U.S. Department of the Interior, Bureau of Reclamation, *CALFED Bay-Delta Program Surface Storage Investigations Progress Report*, April 2005, p. 4.

project; however, recent discussions with program staff indicate the project has been discontinued, as discussed below.

B. ROD Actions

This section assesses the Storage Program's progress on meeting its ROD actions.

1. ***In-Delta Storage (approximately 250 TAF).*** *A facility can provide both fishery benefits and enhanced water project flexibility. CALFED will explore the lease or purchase of the Delta Wetlands project (a water storage effort by a private developer). CALFED is also given the flexibility to initiate a new project in the event that Delta Wetlands proves cost prohibitive or unfeasible. Actions include:*

   - *By October 2000: Make decision as to whether to seek authorization for a feasibility study of alternatives (federal funds).*
   - *By December 2001: Select project alternative and initiate negotiation with Delta Wetlands owners or other appropriate landowners for acquisition of necessary property.*
   - *By July 2002: Develop project plan that addresses local concerns about effects on neighboring lands and complete any additional needed environmental documentation.*
   - *By the end of 2002: Complete environmental review and documentation, obtain necessary authorization and funding, and begin construction.*

   Assessment of Progress—No longer applicable (project discontinued). According to DWR staff, the first two milestones were met. The third milestone (i.e., developing a project plan that would incorporate local concerns and completing needed environmental documentation) was not met, and the project was discontinued. It is our understanding that the In-Delta project was chosen as a ROD action because it had previously been studied and received permits, and thus could have been implemented sooner than other alternatives; however, the project lacked local and stakeholder support. Additionally, studies indicated that project costs were higher and benefits were lower than originally estimated. The project was not funded in the 2005-06 budget.

2. ***Expansion of Central Valley Project (CVP) storage in Shasta Lake (approximately 300 TAF).*** *Such an expansion will increase the pool of cold water available to maintain lower Sacramento River temperatures needed by*

certain fish and provide other water management benefits, such as water supply reliability. Actions include:

- *By the end of 2000: Resolve legal issues to allow state agency cooperation.*
- *By the end of 2003: Complete feasibility study and preliminary design.*
- *By the end of 2004: Complete environmental review and documentation, obtain federal authorization and funding, and begin construction.*

Under current law (Public Resources Code 5093.542(c)), state agencies other than the DWR are not allowed to participate in the studies necessary for this project; however, in order for the state to perform environmental studies for this project, the DWR would need assistance from other state agencies (i.e., the Office of Planning and Research and the Department of Fish and Game).

Assessment of Progress—Behind schedule. The legal issues have not been resolved, and the USBR is proceeding alone with the necessary studies. It is likely that state permits will be needed to construct the project; however, the USBR intends to address the legal issues and enlist state cooperation after the feasibility study and environmental impact statement (EIS) are completed. To date, no state legislator has proposed the necessary change in law, and the state has not provided funding for this project in 2005-06. Currently, state agencies are not formally participating with the USBR in the studies.

The USBR expects to complete the EIS and feasibility study by fall 2008. The DWR's modeling studies indicate that a 6.5 foot raise in Shasta Dam would increase storage by 300 TAF, and an 18.5 foot raise would increase storage by 635 TAF (as displayed in Table A-5), versus the 300 TAF projected in the ROD.

3. ***Expansion of Los Vaqueros Reservoir (up to 400 TAF).*** *The expansion would be accomplished with local partners as part of a Bay Area water quality and water supply reliability initiative. The reservoir would provide water quality and water supply reliability benefits to Bay Area users. As an existing reservoir operated by the Contra Costa Water District (CCWD), the Los Vaqueros Reservoir is subject to a number of mandates and agreements. The DWR and USBR would work with the CCWD and interested stakeholders to assure that previous commitments, including local voter approval required for expansion, would be respected. Actions include:*

   - *By March 2001: Identify potential local partners and develop agreement with CCWD and other partners as needed for necessary studies.*

- *By July 2001: Secure authorization and funding for feasibility studies. Begin feasibility study and environmental review.*
- *By July 2002: Complete feasibility study.*
- *By the end of 2003: Complete environmental review, documentation, and preliminary design on a selected alternative.*
- *By mid-2004: Finalize agreements with project participants.*
- *By the end of 2004: Obtain necessary authorizations and funding (including local voter approval).*
- *By the end of 2005: Begin construction.*

Assessment of Progress—Behind schedule. Potential local partners were identified and an agreement was completed in June 2001; however, the federal authority for the feasibility study was not received until 2003, and therefore the feasibility study is not expected to be completed until late 2007. The environmental document will be prepared concurrently with the feasibility study, as required by the federal planning process, and is also projected to be completed in late 2007. Funding has been constrained but will need to be adequate for the project to maintain the revised timeline. The DWR's current projections show increased storage as a result of the planned expansion to be 200-400 TAF; this amount is consistent with the ROD.

4. ***North-of-Delta Offstream Storage/Sites Reservoir (up to 1,900 TAF).*** *By reducing water diversion on the Sacramento River during critical fish migration periods, this project can greatly increase reliability of supplies for a significant portion of the Sacramento Valley. It can also provide storage and operational benefits for other CALFED programs including Delta water quality and the EWA (Environmental Water Account). Actions include:*

   - *By October 2000: Develop joint planning program through a memorandum of understanding (MOU) with local water interests.*
   - *By August 2004: Complete environmental review and planning documentation.*

   Although the project was identified in the ROD as being located at Sites Reservoir, in actuality, Sites Reservoir is one of four locations being considered for North-of-Delta Offstream Storage. The other locations are the Red Bank

Project, Newville Reservoir, and Colusa Reservoir, which are all located on the west side of the Sacramento Valley.

Assessment of Progress—Behind schedule. The first milestone was completed in November 2000. The federal feasibility study authorization was not received until 2003, and funding has been constrained such that the final environmental impact statement/environmental impact report (EIS/EIR) and feasibility reports are now projected for winter 2008. Modeling for storage capacity shows estimated storage may be up to 1,800 TAF.

5. ***Upper San Joaquin River Basin Storage Investigation (250–700 TAF).*** *Additional storage 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 deliveries to urban communities. Additional storage could come from enlargement of Millerton Lake at Friant Dam or a functionally equivalent storage program in the region. Actions include:*

   - *By the end of 2000: Begin comprehensive study of alternatives..*
   - *By mid-2001: Begin feasibility study on selected project.*
   - *By mid-2006: Complete environmental review and planning documentation.*

   Assessment of Progress—Behind schedule. Initial studies have been completed assessing alternatives for additional storage on the Upper San Joaquin watershed, including potential groundwater and conjunctive management opportunities. The feasibility study was delayed due to funding constraints and late receipt of the federal authorization for the feasibility study (received February 2003). Projected federal funding appears adequate. The expected date for the final EIS/EIR and feasibility report is summer 2009. The expected storage capacity of the project is now 450-1,200 TAF, which is significantly greater than the 250-700 TAF that was originally projected in the ROD due to more recent information.

   It should be noted that in August 2004, the US District Court found that Friant Dam had been operated in violation of Fish and Game Code Section 5937, which requires that water be released from the dam to maintain a river's historic fishery. The ruling specified that a remedy to the violation be determined at a later date. While a future ruling may influence the downstream use of water supply, it is recognized that a remedy to the violation is very complex and may take several

years of study. To date, the issues related to the litigation have not affected the schedule.

6. ***Bypass Canal at the San Felipe Unit at the San Luis Reservoir.*** *Originally in the ROD as a complementary action of the Conveyance Program, this project was transferred to the Storage Program in 2005 to better reflect its goals of water quality and water supply. When operated in conjunction with local storage, this canal would allow Santa Clara Valley Water District to receive water directly from the Delta pumping facilities, thereby avoiding water quality problems associated with the "low point" water levels in San Luis Reservoir. Resolving this "low point" issue also will increase the effective storage capacity in San Luis Reservoir up to 200 TAF. Actions include:*

   - *By October 2000: Fund studies of bypass canal and related expansion of local storage through Proposition 13, allocate funds to Santa Clara Valley Water District (SCVWD), the implementing agency.*
   - *By the end of 2003: Complete environmental review and documentation and preliminary design.*
   - *By the end of 2004: Obtain necessary authorization and funding and begin construction.*

   Assessment of Progress—Behind schedule. The DWR awarded Proposition 13 funds to SCVWD in August 2000. State funds were granted for a feasibility study, which was started along with an environmental review, but was halted until the federal appraisal study is completed. Reclamation and SCVWD will initiate a federal feasibility study in January 2006. Feasibility and environmental studies are expected to be complete by mid-2007. Authorization and funding to begin construction will follow completion of the feasibility study and a recommended plan justifying federal, state, and SCVWD investment. Currently, the original concept of a canal is one of several options being considered.

7. ***Groundwater Storage Projects.*** *CALFED agencies will facilitate and fund locally supported, managed, and controlled groundwater and conjunctive use projects with a total of 500-1,000 TAF of additional storage capacity by 2007. These will be implemented as locally supported and managed projects or as partnerships with local and regional interests. Groundwater quality will be an important criterion in the selection, operation, and management of the sites. The projects will include a combination of purchase, lease, or sharing storage space with others, and will include consideration of existing groundwater storage facilities.*

CALFED identified projects in the Sacramento Valley, near the Delta, the San Joaquin Valley, and Southern California. Actions include:

- *By February 2001: Finalize agreements with new local project proponents for joint planning and development.*
- *By March 2001: Begin feasibility studies with funding through CALFED and Proposition 13.*
- *By the end of 2002: Report on the performance of feasibility studies, projects to be implemented, and potential benefits and beneficiaries. The report will separately identify likely local benefits as well as opportunities to benefit statewide water supply reliability and the EWA.*
- *By the end of 2004: Implement early stages of the most promising projects.*
- *By the end of Stage 1: Aggressively pursue implementation of additional projects.*

This ROD action specifies a target for groundwater storage capacity. Another way to quantify groundwater is in terms of annual yield. Annual yield is often considered a more meaningful measure because it can be related to delivery; furthermore, actual storage capacity cannot be precisely determined. According to Authority staff, a common rule of thumb applied in the groundwater field is that annual TAF yield is equivalent to one-third of TAF storage capacity, although the ratio can vary depending on numerous local conditions.

Assessment of Progress—On schedule. As discussed above, the Storage Program has provided grants and loans for groundwater storage projects. As shown in Tables A-2 and A-3, 63 projects were funded at a cost of $205.6 million state funds (over $1 billion total funds) from 2000-01 through 2003-04. The projects are estimated to yield approximately 300 TAF per year. This yield amount is derived from grant applications and is not verified; actual yields will not be known until projects are completed and yield is monitored. Based on the industry rule of thumb, 300 TAF yield is equivalent to storage capacity of approximately 900 TAF. It should be noted that DWR staff interpret the ROD target of 500-1,000 TAF to mean yield and not storage capacity and are aiming to achieve additional yield of 200 more TAF per year through conjunctive use and additional groundwater storage projects, which they anticipate will be funded from Proposition 50 monies for Integrated Regional Water Management. Such interpretation of the ROD has resulted in confusion over the program's target.

Many agreements with local project proponents for joint planning and development were completed by the February 2001 target date; additional agreements have been developed after the deadline. There are currently 21 areas in the state in which the DWR has signed agreements with one or more local agencies. A total of 20 feasibility studies (15 recharge and 5 storage) and 8 pilot projects were funded under Proposition 13. Additional feasibility studies were funded under the Local Groundwater Assistance Grant Program, which was supported by the General Fund and Proposition 50.

Regarding the report called for at the end of 2002, status reports were completed, but many feasibility studies are ongoing, so additional feasibility study reports and updated status reports will continue to be completed until the end of Stage 1. It is expected that many of the funded projects will be operational by the end of 2007. Additional projects are under development and will begin construction if funding becomes available.

8. ***Groundwater Management.*** *Effective groundwater management programs are essential to the success of groundwater and conjunctive use projects, as well as to other CALFED programs such as water transfers and water quality. When the ROD was developed, groundwater was managed in some areas of the state through adjudicated basins and by local water districts and agencies. While many of these districts and agencies had developed effective local groundwater programs, most groundwater basins in California were not managed to obtain the benefits that could be gained through conjunctive management of both groundwater and surface water. The benefits could include increased local water supply reliability, water quality protection, reduced subsidence, and mitigation of overdraft. Furthermore CALFED believed that groundwater management at the sub-basin level would better protect groundwater resources and also encourage local agency and stakeholder coordination. CALFED supported objectives and legislation related to a sub-basin management effort. These objectives should include compliance with existing county ordinances and AB 3030.*[62] *AB 3030 authorizes local agencies to enact voluntary groundwater management plans within their boundaries, and enter into agreements to develop basin-wide plans. Actions include:*

   - *By 2004: The DWR will adopt regulations for expenditure of grant and loan funds that make funding contingent upon local agencies having an AB 3030 plan or a functional equivalent in place. CALFED will work with local governments and affected stakeholders to develop legislation to strengthen*

62 Water Code Sections 10750-10756, pursuant to Chapter 947, Statutes of 1992 (AB 3030).

AB 3030 and provide technical and financial incentives to encourage more effective basin-wide groundwater management plans, in part by conditioning future state funding for water programs on the development of local groundwater management plans.

Assessment of Progress—Completed. Legislation enacted in 2002 provided new requirements for groundwater management plans and made the award of DWR grant funding contingent upon compliance (Water Code Section 10753.7(a)). This requirement led to the development or update of many groundwater management plans in the state. Further legislation enacted in 2003 gave preference to entities with groundwater management plans that applied for Integrated Regional Water Management grants funded by Proposition 50 (Water Code Section 79562.5(e)); these grants are administered by the DWR and the State Water Resources Control Board.

C. Goals

The goals of the Storage Program are to increase water supply reliability, improve water quality, and support ecosystem restoration through expanded storage capacity and increased operational flexibility.

1. **Increase water supply reliability, improve water quality, and support ecosystem restoration—**These are long-term goals, and it is premature to assess the extent to which they have been achieved.

2. **Expanded storage capacity and increased operational flexibility**—No additional surface storage capacity has been added; one project has been discontinued, and the remaining five are behind schedule. The groundwater storage program is on schedule to achieve 300 TAF additional yield, which equates to approximately 900 TAF in additional storage capacity based on projects funded to date. Expanded storage capacity helps increase operational flexibility; given that added storage capacity is still in an early phase, it is unlikely that operational flexibility has increased substantially.

Appendix B. Conveyance Program

I. Funding[63] and Projects

A. Total Funding

The *2004 Annual Report* indicated funding of $131 million for the Conveyance Program for Years 1 through 5, or 22 percent of the $589 million original amount estimated for this period. Of the reported funds, 43 percent was provided by the state (General Fund and Proposition 13), 8 percent by the federal government, and 49 percent by water users. The $458 million difference in reported costs versus the estimate is largely due to the suspensions of the fish screen projects at Tracy and Clifton Court Forebay, and delays in the North Delta regional floodway improvement project, as further discussed below.

B. Project Funding

Table B-1 displays the specific projects, original funding estimates, and the actual amounts spent, based on Authority records. These records differ from the figures in the *2004 Annual Report* because, according to Authority staff, they are based on more recent information.

63 As discussed in Section II, Background, the funding amounts in this report are taken from program records that have not been verified or validated.

Table B-1. Projects by Estimated and Actual Costs
Dollars in Millions

Project	Estimated Costs for Years 1 - 5	Actual Funds Received for Years 1 - 5	Percent of Estimated Costs that Were Funded
South Delta			
Tracy Fish Screen	$100	$47	47%
New Clifton Court Forebay Intake	292	5	2%
CVP/SWP Intake Intertie	7	-	0%
CVP/SWP Aqueduct Intertie	5	3	60%
Barriers, Dredging, Diversion Modifications	65	53	82%
Total South Delta	**469**	**108**	**23%**
North Delta			
Evaluate Delta Cross Channel Gate Operation	7	9	129%
Screen Thru-Delta Diversion on Sacramento River	8	12	150%
Regional Flood Control/Ecosystem Restoration	105	4	4%
Total North Delta	**120**	**25**	**21%**
Oversight, Coordination, and Science	-	5	N/A
Total Conveyance	**$589**	**$138**	**23%**

As displayed in Table B-1, $292 million, or 50 percent of the total amount estimated for the Conveyance Program, was for the Clifton Court Forebay Intake (design and construction of the intake and beginning construction of one new 2,500 cubic feet per second [cfs] screened module). The project incurred only $5 million in costs and is currently suspended due to concerns about cost and feasibility. For the Tracy Fish Screen, over $20 million was paid by the state to the federal government for the state's portion of the facility; however, the project has been suspended and it is our understanding that the federal government will reimburse the state for those funds that have not been spent on this project.

The $105 million original estimate for Regional Flood Control/ Ecosystem Restoration included 100-year flood protection for the North and South Mokelumne Rivers and significant ecosystem restoration; however, this project is significantly behind schedule.

The most significant costs incurred to date have been $53 million for temporary barriers and permanent gates, which are used to facilitate agricultural users' access to water, and to improve fish passage. These costs included $24 million for the

temporary barriers and $29 million for environmental studies for permanent gates, which have been entirely borne by SWP water users (i.e., beneficiaries).

II. Performance Measures[64]

According to the *Multi-Year Program Plan (Years 6-9)*, the Conveyance Program has been working with the Science Program to design performance measures. To date, only potential measures have been identified for the first two levels of measurement, which are shown below:

- **Simple Administrative Measures**—To monitor project funding and progress, the program may measure the percent of funds spent, and the percent of projects complete. To monitor the sharing of project costs, the program may measure the percent of sharing achieved.
- **Quantifiable Accomplishments**—Several of the Conveyance actions are expected to increase water supply reliability relative to federal, state, and/or local water entities. The water supply improvement related to the projects could be measured in acre-feet, and the cost of the projects could be measured in dollars per acre-foot. To measure water quality for such projects as the Delta Cross Channel and the screened through-Delta facility, the program could measure levels of salinity, organic carbon, chloride, and bromide. Other measures could include fish population estimates, and average export pumping levels (cfs per specified time period).
- **System-wide Indicators**—Future measures might include more broad indicators of water supply reliability and ecosystem health.

III. Accomplishments

Accomplishments have been limited for the Conveyance Program. Program staff indicate that some actions have been delayed because costs were higher than anticipated, and as a result, project alternatives are being evaluated. Other actions have been delayed because the environmental studies required more time. None of the projects have entered the construction phase. In addition, due to the recent decline in pelagic fish populations, no changes can be made to the South Delta conveyance system except to construct the permanent gates and the aqueduct intertie near Tracy until a reason for the fish decline is established. It is expected

64 See Section II, Background, for an overview of CALFED performance measures.

that the reason for the fish decline may not be determined until 2009. This section examines progress made on ROD actions and on Conveyance Program goals.

A. ROD Actions

1. ***Increase SWP pumping from the current limit from March 15 to December 15 to 8,500 cfs; and modify existing pumping criteria from December 15 to March 15 to allow greater use of SWP export capacity.*** *Increased pumping is conditional upon avoiding adverse impacts to fishery protection and in-Delta water supply reliability.*

   - *Complete environmental review by the end of 2002.*
   - *Secure appropriate regulatory permits by the middle of 2003 to increase pumping up to 8,500 cfs during periods that are currently restricted. This includes completing a project-specific operations plan that addresses the potential impacts of increased pumping. This pumping increase will increase export capability by up to 100,000 acre-feet per month depending on hydrological conditions, fisheries conditions, and availability of storage south of the Delta.*
   - *Full use of increased pumping capability will require continued implementation of temporary barriers on an annual basis as well as project-specific actions to protect agricultural diversions and navigation in the South Delta.*

   Currently, the pumping maximum is 6,680 cfs on a three-day average basis. The purpose of this action is to provide more water for agricultural and urban users from March to December when demand is greatest and the threat to fish is relatively low. Increasing the average pumping rate to 8,500 cfs is a key element of CALFED. The original concept in the ROD was to increase pumping to 8,500 cfs and simultaneously construct three fish protection projects, i.e., the Tracy and Clifton Court Forebay fish screens and the permanent gates. It was assumed that after the fish protection projects were completed, pumping could increase to 10,300 cfs, as described in ROD action #2 below.

   Assessment of Progress—Behind schedule. Pumping has not been increased to 8,500 cfs on a consistent basis because the environmental studies have not been completed pending resolution of issues raised by stakeholders and the recent pelagic fish decline in the Delta.

2. ***Increase SWP pumping to the maximum capability of 10,300 cfs.*** *As the South Delta Improvement Program is fully implemented through the end of Stage 1, the SWP export capability will increase to 10,300 cfs, greatly expanding benefits for all purposes. Full use of this capacity will depend on protection of agricultural diversions and navigation in the South Delta, hydrologic conditions, fisheries conditions, availability of storage south of the Delta, and use for non-SWP purposes.*

Assessment of Progress—Behind schedule. See discussion of ROD action #1 above.

2A. ***Design and construct new fish screens at the Clifton Court Forebay and Tracy pumping plant facilities to allow the export facilities to pump at full capacity more regularly.***

- *Complete funding plan by early 2003.*
- *Complete facilities design by the middle of 2004.*
- *Seek funding and authority to complete initial fish screens, and begin operations and performance testing by the middle of 2006.*

Assessment of Progress—Project no longer applicable. The fish screen projects are currently suspended because of their high costs and concerns about feasibility; the program is evaluating alternatives. A test facility was to be built at Tracy to be used as a guide for further fish screen development at Tracy and Clifton Court Forebay, but this facility was not constructed.

2B. ***Dredge and install operable barriers (also known as gates) to ensure water of adequate quantity and quality to agricultural diverters within the South Delta.*** *This will include installation of an operable Grant Line Canal gate, which will be constructed and operated in accordance with conditions and directions specified by the US Fish and Wildlife Service, Department of Fish and Game, and National Marine Fisheries Service. In the interim, prior to installation of permanent gates, the Department of Water Resources (DWR) would continue to install temporary barriers on an annual basis.*

- *Complete funding plan by early 2003.*
- *Complete facilities design by the middle of 2005.*

- *Seek funding and authority to complete Head of Old River barrier by the end of 2006.*
- *Seek funding and authority to complete Middle River barrier, Tracy barrier, and Grant Line Canal barrier by the end of 2007.*

The gate at the Head of Old River is for the purpose of controlling the movement of fish, to keep them away from the pumps at the state and federal water projects. The gates at the other locations are to increase the water level for the agricultural users to facilitate pumping to their crops. The gates should be operable because they are only needed at certain times of the year.[65]

Assessment of Progress—Behind schedule. Delays are due to the complexity of the project and unresolved issues raised by stakeholders over operation of the SWP at the higher pumping rates. It is currently estimated that the environmental impact statement/environmental impact report (EIS/EIR) will be completed in April 2006, and construction will be completed in April 2009.

3. ***Design and construct floodway improvements on the lower San Joaquin River to provide conveyance, flood control and ecosystem benefits.*** *US Army Corps of Engineers (USACE) and DWR will work with the other CALFED agencies to assure that the Comprehensive Study is consistent with this project.*

- *Complete environmental studies by early 2003.*
- *Complete project design and funding plan by early 2004.*
- *Begin construction by the middle of 2005.*

This project refers to floodway improvements in an area south of Stockton where land use development is in the early stages.

Assessment of Progress—Behind schedule. According to the *Multi-Year Program Plan (Years 6-9)*, the project has been delayed due to insufficient state and federal funding and lack of staffing support at the DWR. In addition, local flood control interests are not in agreement with the government agencies' recommendations relative to the program. There is no revised schedule at this time.

65 Design of the barriers involves a concrete base on the bottom of the river with a steel gate attached; the gate would have a hinge on the upstream side and a thick rubber bladder in between that would inflate when the barriers were in operation, pushing the steel gate up, and deflate when the barriers were not needed.

4. ***Reduce agricultural drainage in the Delta.*** *Actions to reduce such drainage will include early implementation of projects on Veale and Byron tracts to reduce or relocate major sources of drainage into South Delta channels. The purpose of these projects is to minimize elevated salinity and other constituents of concern to drinking water at urban intakes in the South Delta. These projects will be completed prior to completion of the installation of permanent gates in Old River near the San Joaquin River, Grant Line Canal, Old River near Tracy and Middle River and before SWP pumping can increase to its full capacity of 10,300 cfs during periods that are currently restricted.*

   Assessment of Progress—Action was moved to the Drinking Water Quality Program. Because this action was to be completed prior to completion of the installation of the permanent gates, the Conveyance Program is coordinating with the Drinking Water Quality Program.

5. ***Evaluate and implement improved operational procedures for the Delta Cross Channel to address fishery and water quality concerns.*** *The US Bureau of Reclamation (USBR) will lead this effort, in cooperation with the other CALFED agencies, particularly the fishery agencies.*

   - *Complete studies and make specific recommendations by the end of 2003.*

   To maximize water quality and quantity flowing to the SWP and the CVP, the Sacramento River has an easterly diversion in the North Delta, through the Delta Cross Channel; from there, water flows south via the North and South Forks of the Mokelumne River. Operable gates are in place at the Delta Cross Channel which can close off the flow through the channel to protect fisheries that could potentially become trapped in the pumps of the SWP and the CVP. With the gates closed, the fish are forced to follow the path of the Sacramento River out to the Bay. To minimize the gate closures, which would maximize the quantity and quality of water to the SWP and the CVP, studies are being conducted that include examining the behavior of fish relative to tides, flows, and movement at different times of day and night.

   Assessment of Progress—Behind schedule. According to the *Multi-Year Program Plan (Years 6-9)* and program staff, the revised schedule for completing the studies and making recommendations is July 2008. Delays are due to the need for numerous contracts and additional time to conduct studies.

6. ***Simultaneously evaluate a screened through-Delta facility on the Sacramento River of up to 4,000 cfs.*** *The lead agencies for this effort are the DWR and the USBR. The historic emphasis has been on a screened diversion at Hood on the Sacramento River. This and other potential sites between and including Hood and Georgiana Slough will be considered as part of this evaluation.*

   - *Develop specific study plan by October 2000.*
   - *Fund and begin studies through CALFED agency appropriations by October 2000.*
   - *Complete water quality and fish effects studies and develop recommendations by end of 2003.*
   - *Complete environmental review of recommended program. If fish protection conditions are met and the facility is found to be necessary, seek funding and authority to begin construction by the end of 2007.*

   Installing a screen at the through-Delta facility is an option for protecting fish in addition to modifying gate closures at the Delta Cross Channel, as discussed in ROD action #5, and installing fish screens at the SWP/CVP facilities, as discussed in ROD action #2A.

   Assessment of Progress—Behind schedule. According to the *Multi-Year Program Plan (Years 6-9)* and program staff, the revised schedule for completing the water quality and fish studies and making recommendations is November 2008. Delays have been due to the need for numerous contracts and additional time to develop and conduct studies.

7. ***Design and construct floodway improvements in the North Delta (such as on the lower Mokelumne River and Georgiana Slough) to provide conveyance flood control and ecosystem benefits.***

   - *Complete environmental studies by 2003.*
   - *Complete project design and funding plan by early 2004.*
   - *Make decision whether to seek funding and authority to begin construction by the middle of 2005.*

   The ROD estimated a cost of $105 million during Years 1 through 5 to begin implementation of 100-year flood protection for the North and South Forks of the Mokelumne Rivers and significant ecosystem restoration. According to the

project website, the North and South Forks of the Mokelumne River combined can currently convey approximately 40,000 cfs; however, in a 100-year flood event, the river would need to convey 90,000 cfs. Current conditions leave a number of areas in the North Delta vulnerable to flooding. In addition, habitat for wildlife has been degraded. This ROD action would address both floodway and ecosystem improvements.

Assessment of Progress—Behind schedule. As noted in Table IV-1, only $4 million has been spent on this project. According to the *Multi-Year Program Plan (Years 6-9)*, the revised schedule for completing the environmental studies is fall 2005. Delays have been due to problems in executing contracts, General Fund budget constraints, lack of a federal lead agency, and difficulty obtaining consensus on ecosystem alternatives.

8. ***The CALFED agencies will pursue a number of interties and bypasses in the water system, including an intertie between the SWP and CVP facilities at or near Tracy.*** *This short channel between the state and federal canals would allow operators to take advantage of fluctuations in Delta water quality at the two project intakes, delivering higher quality to either project canal.*

   - *Complete environmental work and project design by the middle of 2004.*
   - *Complete funding plan by the middle of 2004.*
   - *Make decision whether to seek funding and authority to begin construction by the end of 2004.*
   - *Assess the connection of the CVP to the SWP's Clifton Court Forebay with a corresponding increase in the Forebay's screened intake.*

   This ROD action addresses two interties. The first three bulleted sentences refer to the "aqueduct intertie" near Tracy, which would connect the Delta Mendota Canal and the California Aqueduct. This project also includes construction of a small pumping plant. According to the USBR website, this intertie would achieve multiple benefits, "including meeting current water supply demands, allowing for the maintenance and repair of the CVP Delta export and conveyance facilities, and providing operational flexibility to respond to emergencies related to both the CVP and SWP."[66] The fourth bulleted sentence refers to the "intake intertie," which would connect the Delta Mendota Canal to Clifton Court Forebay; this intertie would allow for one fish screen and collection facility to serve both the SWP and the CVP, and is an alternative to the two screens proposed in ROD action #2A.

66 http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=1014, visited September 13, 2005.

Assessment of Progress—Partly behind schedule (aqueduct intertie), partly no longer applicable (intake intertie). The environmental studies for the aqueduct intertie were completed in April 2005; construction is expected to begin this year with local user funds. The intake intertie and single fish screen are suspended in conjunction with the fish screens in ROD action #2A.

9. ***Install and operate temporary barriers in the South Delta until fully operable gates are constructed as the South Delta Improvements Program is implemented.*** *The Temporary Barriers Program (TBP) is an annual activity requiring the preparation of environmental documentation, securing required regulatory and access permits, interagency coordination, monitoring, modeling, installation, operation, and removal (complementary action).*

   Temporary barriers are used at three locations to support agricultural users, and at one location to protect fish from being trapped in the pumping facilities. The agricultural barriers consist of rocks placed in the water to increase the water level. The higher water level reduces the pumping necessary by agricultural irrigators to water their crops. The barrier for the fish is placed in the water to control movement of the fish away from the pumping facilities. The barriers are placed and removed seasonally. Removal of the barriers facilitates boat passage and fish movement. The temporary barriers are to be used until the permanent gates called for in ROD action #2B are constructed and operational.

   Assessment of Progress—Ongoing. The TBP has been in place since 1991 (i.e., before the ROD).

10. ***Take actions to protect navigation and protect local diverters in the South Delta who are not adequately protected by the TBP.*** *Although the South Delta barriers provide adequate protection to much of the South Delta, there are still some diverters who suffer from low water levels because they are downstream or located too far away from the barriers. Actions which need to be taken to protect these diverters may include: installation and operation of portable pumps, limited project-specific dredging of existing intakes, and/or project-specific modification to existing diversion structures including the conversion of siphons to pumps. This action requires preparing detailed plans at each diversion location, preparing permit applications, preparation of environmental documentation (as needed), securing applicable permits and funding and finalizing agreements with the diverter as to the scope of work to be done and funding of the work (complementary action).*

Assessment of Progress—Ongoing. This program has been operated simultaneously with the TBP since 1991. According to the *Multi-Year Program Plan (Years 6-9)*, last year portable pumps were installed, limited dredging was conducted, and agricultural diversions were installed and modified. Aquatic plants that had infested Tom Paine Slough were removed, which should help improve irrigation water conveyance (flow) and reduce reliance on portable pumps in 2005 and beyond. In regard to navigation, according to program staff, the DWR provides boat ramps so that boats can go over the barriers.

11. ***Comprehensive study of Sacramento and San Joaquin River watersheds to improve flood control efforts out to San Francisco Bay.*** *The USACE and the USBR are currently implementing a Comprehensive Study of the Sacramento and San Joaquin River watersheds to improve flood control efforts out to San Francisco Bay. The Delta and its ability to convey flood waters play a crucial role in the Comprehensive Study. The CALFED agencies intend that final development and implementation of actions under the Comprehensive Study will be coordinated and consistent with the CALFED Bay-Delta Program (complementary action).*

This study is a complementary action that also appears in the Levee System Integrity and Ecosystem Restoration Programs. The study was essentially a large feasibility study addressing flood control, land development, and ecosystem restoration. It received final approval by early 2004. The expected outcome of the study is the identification of individual projects to undergo more specific feasibility study, and then design and construction. All work is to be funded with a 50-50 match of state and federal funds.

Assessment of Progress—Not addressed. The Comprehensive Study has not been followed by the Conveyance Program staff but was brought to their attention during the course of our review, and they will now be involved.

12. ***Seek State Water Resources Control Board (SWRCB) approval of Joint Point of Diversion and share water derived from Joint Point of Diversion (JPOD) between the CVP and the Environmental Water Account (EWA).***[67]

As referred to above, the JPOD is the use of excess pumping capacity of the SWP, when available, to meet additional pumping needs of the CVP and the EWA. There are three JPOD stages, each of which requires two or more specified plans.

67 CALFED Bay-Delta Program, *Programmatic Record of Decision*, August 28, 2000, p. 41. The responsibility of the Conveyance Program for this action is ambiguous in the ROD; however, the Implementation Plan clearly specifies that this action is part of the Conveyance Program. See CALFED Bay-Delta Program, *Implementation Plan, Final Programmatic EIS/EIR Technical Appendix,* July 2000, p. 3-18.

Assessment of Progress—Partly completed. The DWR and the USBR have sought approval of the SWRCB in the past and have used the excess pumping capacity at the SWP. They were able to obtain long-term approval for one stage because the necessary plans were in place. Approval of a second stage was granted temporarily on the basis of interim plans. Approval of the third stage has not been granted because one of the plans has not been completed. Long-term approval of the latter two stages is contingent upon plans that cannot be completed until permanent gates are in place (see ROD action #2B above).

13. ***A bypass canal to the San Felipe Unit at the San Luis Reservoir (complementary action).***

    Assessment of Progress—Action was moved to the Storage Program.

14. ***Facilitate water quality exchanges and similar programs to make high quality Sierra Nevada water in the eastern San Joaquin Valley available to urban Southern California interests (complementary action).***

    Assessment of Progress—Action was moved to the Drinking Water Quality Program.

B. Goals

The overarching goal of the Conveyance Program is to identify and implement conveyance system modifications that will improve water supply reliability, help improve drinking water quality, and complement ecosystem restoration. The program also has a goal of flood protection. Little or no progress has been made toward the Conveyance Program's long-term goals to increase water supply reliability, improve drinking water quality, complement ecosystem restoration, and improve flood protection. Projects to improve flood protection have not been completed; see discussions above regarding flood control (i.e., ROD actions #3 and #7).

C. Objectives

Specific objectives address water project operations, as well as specified transfer and storage functions.

1. **Restore water project reliability and operational flexibility.** The Conveyance Program has not completed any projects which would improve water project reliability and operational flexibility. The ROD actions that would address this

goal are suspended or behind schedule. See discussions above regarding increased pumping, fish screens, and operable gates (i.e., ROD actions #1, #2, #2A, #2B, and #8). Water supply reliability has been improved, however, through the EWA, because the EWA stores water that can be released to meet demand when the pumping facilities need to be shut down to protect fish. For additional discussion regarding the EWA, see Section VI, Environmental Water Account.

2. **Allow the EWA to transfer and store water.** This objective has been met. Refer to Section VI, Environmental Water Account.

3. **Allow a reliable water transfer market to function.** This objective has been met. Refer to Section V, Water Transfer Program.

4. **Allow SWP facilities to convey larger amounts of water during periods of high quality water in the Delta to improve water quality for urban use.** This objective refers to the ROD actions to increase pumping at the SWP to 8,500 cfs, and then to 10,300 cfs (ROD actions #1 and #2). This objective also involves the actions on the Sacramento River to improve operational procedures at the Delta Cross Channel and to evaluate a screened through-Delta facility (ROD actions #5 and #6). Finally it includes construction of the aqueduct intertie (ROD action #8). This objective has not been met. See discussions above regarding the specified ROD actions.

5. **Provide greater capability for SWP facilities to be used to improve the reliability of CVP supplies for both its water users and wildlife refuges.** This objective has been met since 2004. Program staff indicated that currently the state has a limited amount of storage upstream of the Delta, and the federal government has a limited amount of conveyance capacity south of the Delta. Beginning in 2004, whenever the SWP pumps (intermittently) at 8,500 cfs at the Clifton Court Forebay facility, state agencies may convey up to 100,000 acre-feet of water for wildlife refuges and/or for other beneficial water uses south of the Delta. In turn, the federal government allows the state to use storage capacity at the Shasta and Folsom reservoirs.

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Appendix C. Water Transfer Program

I. Funding[68] and Projects

A. Total Funding

According to the *2004 Annual Report*, the Water Transfer Program received $2.6 million for Years 1 through 5, or 20 percent of the $13 million original cost estimated for this period. The original estimate assumed that costs would be shared equally by the state and federal governments, but federal funds represent only 8 percent of the amount received.

The draft *Multi-Year Program Plan (Years 6-9)* indicates that the reduced funding levels did not adversely affect program activities nor eliminate or delay any major program activity. According to program staff, the lack of adverse impact is likely due to the original cost estimate being overstated.

B. Project Funding

According to the draft *Multi-Year Program Plan (Years 6-9)*, approximately 35 percent of the funds were used to develop and maintain the On-Tap website and the California Water Transfers Clearinghouse. The remainder of the funds was used for other program activities, primarily of an administrative nature.

68 As discussed in Section II, Background, the funding amounts in this report are taken from program records that have not been verified or validated.

II. Performance Measures[69]

The draft *Multi-Year Program Plan (Years 6-9)* does not identify any performance measures for the Water Transfer Program, but rather states that it is unclear whether the program is suitable for science-based performance measures because the program is primarily administrative. It is also stated, however, that the Water Transfer Program will cooperate with the Science Program to develop suitable performance measures; however, given that funding has since been eliminated, development of performance measures is questionable.

The *2004 Annual Report* indicated that the Water Transfer Program is "on track," citing the total acre-feet of water transferred in 2004, as well as a cumulative total for the first four years of CALFED.[70] Our review indicates that using this measure alone as a performance indicator is questionable for two reasons. First, the total amount of water transferred cannot be determined, because the state is aware only of the water transfers requiring state involvement,[71] and because in very wet years, a water transfer may be brokered but never actually occur. Second, using the total amount of water transferred as a performance indicator suggests that transferring more water is better; this is not necessarily the case because the necessity for water transfers depends on the amount of rainfall and other factors. It does indicate the Water Transfer Program is facilitating transfers for stakeholders, and staff time is spent on transfers brokered regardless of whether the transfer actually occurs.

III. Accomplishments

The documents generally used for communicating the performance of the Water Transfer Program are CALFED's annual reports and multi-year program plans. Our review is based primarily on the *2004 Annual Report* and the draft *Multi-Year Program Plan (Years 6-9)*, as well as discussions with program staff.

The *2004 Annual Report* and draft *Multi-Year Program Plan (Years 6-9)* both include a chart intending to reflect the Water Transfer Program's progress in meeting the program's commitments; however, the charts erroneously reflect no program activity prior to late 2004.

69 See Section II, Background, for an overview of CALFED performance measures.
70 CALFED Bay-Delta Program, *2004 Annual Report,* p. 8.
71 Pre-1914 water rights are exempt from State Water Resources Control Board regulations.

A. ROD Actions

This section assesses the Water Transfer Program's progress on meeting its ROD actions.

1. ***Increase the availability of existing facilities for water transfers.*** *It is necessary to encourage and promote water transfers by facilitating "wheeling" transactions (the transfer of water between willing sellers and buyers). Such transactions are paramount to the ultimate success of CALFED. Therefore, if legislation is not enacted during the 2000 legislative year to clarify the state's wheeling laws, the state administration will sponsor legislation in 2001.*

   Assessment of Progress—No longer applicable. Former Senator Costa convened a group of stakeholders to evaluate potential legislation regarding water transport facilities and their availability. After reviewing existing law, the parties determined that no further legislation was required. The Department of Water Resources (DWR) works with transferring parties to provide capacity when available, and provided storage for transferred water on a pilot project basis in 2003. Legislation has not been pursued because the market is young and needs to maintain flexibility at this time, and new legislation could hamper water transfers. This decision regarding legislation was not addressed in the draft *Multi-Year Program Plan (Years 6-9).*

2. ***Lower transaction costs through permit streamlining.*** *The CALFED agencies propose to develop streamlined transfer approval procedures for certain kinds of transactions (intra-regional transfers, short-term transfers, dry-year transfer). This streamlining would include "pre-certification" of certain classes of transfers (e.g. local transfers) and expedited environmental review procedures and may necessitate legislation to implement. Actions include:*

   - *By December 2000: Convene a panel of stakeholders, including both transfer supporters and community representatives with concerns about transfers, to draft recommendations for a streamlined transfer approval process.*
   - *By April 2001: Introduce legislative changes.*

   Assessment of Progress—Partly completed (late), partly no longer applicable. A stakeholder panel was established. In 2001, the forum had not made sufficient progress to have a streamlined process in place for water transfers occurring in 2002. In March 2002, the DWR produced, in cooperation with the US Bureau of Reclamation (USBR) and stakeholders, the draft "Water Transfers Papers for

Water Transfers in 2002 Involving the Department of Water Resources" (also known as the "white papers"), to establish agreed upon methods for structuring water transfers from the Sacramento Valley. The papers have continued to be used to accelerate the review process. The DWR attempted to reconvene the stakeholders to address their concerns following implementation of the Water Transfers Papers and lessons learned since 2002. The second forum was to include interested parties south of the Delta; however, the attempt is currently suspended due to budget constraints. Again, specific legislation to streamline the transfer process was not pursued because the water transfer market is young and needs to maintain flexibility. The decision not to pursue legislation was not communicated in the draft *Multi-Year Program Plan (Years 6-9)*; however, the draft Water Transfers Papers are posted on the DWR's website.[72]

3. ***Provide the "On-Tap" website by the end of 2000*** *as a water transfer information source, which will clarify application of policies and procedures and provide information about ongoing transfer activity.*

   Assessment of Progress—Completed (late), but no longer operational due to budget constraints. The "On-Tap" website was created and operated until July 2005, at which time it was suspended due to budget constraints. The purpose of the website was to provide an online application for transfers as well as a historical database of water transfers. The website provided information on previous transfers, including description (e.g., sale or exchange, temporary, or long term), participants, volume, and relevant dates (filing, approval, and delivery dates). It included 3,685 transactions in its database going back to the late 1980s. It was interactive such that users with a guide and using drop down boxes, could furnish information about a proposed transfer. The website was receiving about 3,000 "hits" per month before it was suspended.

4. ***Establish California Water Transfers Information Clearinghouse*** *to disseminate information on groundwater impacts, cumulative impacts, and local socioeconomic impacts of transfers by the end of 2001.*

   Assessment of Progress—Completed. According to program staff, this action was satisfied by implementation of the DWR's Water Transfer Program website (www.watertransfers.water.ca.gov), which includes links to reports and information specified in the ROD action.

72 http://www.watertransfers.water.ca.gov/docs/WTO_Papers_2002_3_8_02.doc, visited September 21, 2005.

5. ***Develop and support proposals to ensure that incentives to conserve water accrue directly to land owners, and not to the irrigation district or water supply agency (complementary action).***

   This complementary action also appears in the Water Use Efficiency Program.

   Assessment of Progress—No longer applicable. According to program staff, this action was deemed not applicable to the Water Transfer Program, and therefore no proposals were developed. This determination was not addressed in the draft *Multi-Year Program Plan (Years 6-9)*.

6. ***Require water transfer proposals*** *submitted to the DWR, USBR, or the State Water Resources Control Board (SWRCB) to include analysis of potential groundwater, socioeconomic, or cumulative impacts as warranted by individual transfers.*

   Assessment of Progress—Ongoing activity. The Water Transfer Program encourages that water transfer proposals be structured to avoid potential impacts, and most contracts include an "immediate response" plan to claims of harm. Each water transfer is analyzed for groundwater and socioeconomic impacts and compliance with Water Code Sections 1727(a) and (b) for short-term transfers, and 1735 and 1736 for long-term transfers. Analysis of cumulative impacts is required for long-term transfers and certain short-term transfers under the California Environmental Quality Act (CEQA) and/or the National Environmental Policy Act (NEPA). Relative to socioeconomic impacts specifically, studies have indicated that by limiting land idling to 20 percent of the irrigable land in a county, there are no unreasonable impacts on the local economy from lower agricultural production.

7. ***Refine quantification guidelines*** *used by water transfer approving agencies when they are reviewing a proposed water transfer. This will include resolving issues between stakeholders and approving agencies regarding the application of current agency-based quantification criteria.*

   Assessment of Progress—Not completed. The values (quantification) used were published in the State Water Plan in 1998. In 2004-05, the DWR and USBR applied for a CALFED Science Program grant to further study the values used for quantifying crop water use. They did not receive the grant, and nothing further was done.

8. ***Improve the accessibility of state and federal conveyance and storage facilities*** *for the transport of approved water transfers.*

   Assessment of Progress—Ongoing activity. The DWR and USBR work with transferring parties to provide capacity when available and continue to work with water transfer parties on storage issues.

9. ***Clearly define carriage water requirements and resolve conflicts over reservoir refill criteria*** *such that transfer proponents have a clear understanding of the implications of these requirements.*

   Carriage water is the additional water—paid for by the buyer—that may be necessary to accompany or "carry" across-Delta transfer water to maintain water quality or other standards. According to program staff, the amount of carriage water that must be purchased can vary, but an additional 20 percent over the amount of the transfer water is usually assumed for planning purposes. Because of the cost of carriage water, conflicts have arisen over the amount, if any, of carriage water required. The Water Transfer Program Plan expected this issue to be addressed by the development of carriage water criteria and improvement in stakeholder understanding of carriage water requirements. Other conflicts have arisen over water transfers because the State Water Project (SWP) and the Central Valley Project (CVP) believe that transfers may reduce the amount of water available to their reservoirs and cause the reservoirs to refill more slowly, which affects the ability of the projects to meet their water delivery obligations. This ROD action was intended to develop agreements or policies governing water transfers to reduce conflicts.

   Assessment of Progress—Partly not completed, partly may no longer be applicable. The Water Transfer Program Plan suggested potential solutions to define carriage water which included (1) convening agencies, stakeholders, and a technical team to improve understanding, and (2) formulating a through-Delta alternative to reduce or eliminate the need for carriage water. According to DWR staff, some of these activities did not take place. To determine the exact amount of carriage water to be included in transfers, the DWR annually assesses hydrology, water quality standards, and other operational constraints. With regard to reservoir refill criteria, the Water Transfer Program Plan suggested the projects and water sellers negotiate to agree on (1) the refill percentage and assumption of risk/liability, (2) a policy to require reservoir refill impact analysis and mitigation measures, and (3) a method to determine applicability and amount of refill, and the monitoring of its impact. DWR staff indicated that

discussions have been ongoing. Currently reservoir refill criteria are established on a case-by-case basis. DWR staff indicated that each reservoir is unique in the criteria that are used to establish refill requirements and that it is not possible to develop one set of criteria for all reservoirs.

10. ***Identify appropriate assistance for groundwater protection programs*** *through interaction with CALFED agencies, stakeholders, the Legislature, and local agencies. This is intended to assist local agencies in the development and implementation of groundwater management programs that will protect groundwater basins in water transfer source areas.*

    Assessment of Progress—Ongoing activity. The DWR has an established and growing groundwater monitoring system in the state, and the Water Transfer Program depends on the information from that system to approve groundwater transfer programs and monitor the transfers. There is interaction among CALFED agencies, stakeholders, and local agencies; there has been no recent legislative activity in this area. The Program Plan, however, suggested certain potential solution options to develop appropriate assistance for groundwater programs. The options were not addressed specifically by the Water Transfer Program staff, but several of the options are included in the program and DWR operations in general. Included are the protection of groundwater resources through local ordinances, development of data regarding the Sacramento Valley groundwater basin, local management of conjunctive use programs, and modeling of regional groundwater.

11. ***Establish new accounting, tracking, and monitoring methods*** *to aid instream flow transfers under Water Code Section 1707.*

    Assessment of Progress—Incomplete. Instream flow transfers under Water Code Section 1707 are a relatively new means of providing habitat protection. These transfers are usually sought by government agencies such as the Department of Fish and Game and US Fish and Wildlife Service. The DWR, USBR, and SWRCB are working with wildlife agencies to understand the complex issues associated with these transfers; the program will develop new accounting, tracking, and monitoring methods as it gains sufficient experience.

B. Goals

According to the ROD, the goal of the Water Transfer Program is "to encourage the development of a more effective water transfer market that facilitates water transfers

and streamlines the approval process while protecting water rights, environmental conditions, and local economic interests." The goal is analyzed in two parts below relative to progress on the ROD actions:

1. **Encourage the development of a more effective water transfer market and streamline the approval process.** The Water Transfer Program has made some progress during the five years since the ROD in facilitating water transfers and in streamlining the process. The ROD actions that address this goal relate to the draft Water Transfers Papers, the "On-Tap" website, and the California Water Transfers Information Clearinghouse. Due to budget constraints, the Water Transfers Papers were not developed further, and the "On-Tap" website is no longer operational. See discussions above under ROD actions #2, #3, and #4.

2. **Protect water rights, environmental conditions, and local economic interests.** The Water Transfer Program is engaged in ongoing activities that further this goal. These activities include analyzing potential groundwater, socioeconomic, and cumulative impacts as well as through providing assistance with groundwater protection programs. See discussions above under ROD actions #6 and #10.

Appendix D. Environmental Water Account

I. Funding[73]

The *2004 Annual Report* indicated that funding for the first five years was $248 million, including 92 percent state funds and 8 percent federal funds. The implementing project agencies (the Department of Water Resources [DWR] and US Bureau of Reclamation [USBR]) reported $186 million for the same period. As noted in Section II, Background, the *2004 Annual Report* often differed from other CALFED fiscal records. There may be reconciling factors; however, those issues were outside the scope of our review. Funds were mainly used for water and power purchases, and also for staff and environmental compliance.

II. Performance Measures[74]

The Environmental Water Account (EWA) has developed preliminary performance measures that are presented in the draft *Multi-Year Program Plan (Years 6-9)*. There are three displays, as follows:

- The first display is a list of seven output measures developed by the EWA Technical Review Panel, including the amounts of water acquired and used, fish losses and survival, whether supply goals were met, and whether the Endangered Species Act (ESA) commitments for sufficient water to protect fish were obtained.

73 As discussed in Section II, Background, the funding amounts in this report are taken from program records that have not been verified or validated.

74 See Section II, Background, for an overview of CALFED performance measures.

- The second measure is a bar graph showing the amount of State Water Project (SWP) and Central Valley Project (CVP) water not pumped (and EWA assets used) along with fish losses for four at-risk species. The graph shows that in most cases, pumping was curtailed before fish losses reached a specified critical level. Although the graph contains useful information, it is confusing because it is not self-explanatory and no explanation was provided.
- The third display is a summary table of 17 input, output, and outcome indicators ("metrics") for various aspects of the program's performance, including the seven output measures developed by the EWA Technical Review Panel. The metrics include environmental compliance, water acquired and used, evaluation of EWA decisions, fish population indicators, etc. For each metric, the table displays the objective, the value achieved, whether the objective was met, and applicable comments. Some of the measures are quantified and some are not.

EWA staff anticipate that most or all of the 17 metrics in the third display will continue to be used in the future, subject to revision and refinement as the program evolves. It is not clear if the bar graph will continue to be used.

III. Accomplishments

Accomplishments are considered first in terms of assessment reports, then in terms of the ROD and the Conservation Agreement, and finally in terms of the goals.

A. Assessment Reports

Two reports have been issued addressing the results of EWA operations, referred to herein as the "2004 Report" and the "2005 Report." The first report covered the first three years of operation, and the second report covered the fourth year of operation. These reports are discussed below.

1. **2004 Report.** This report, "The Efficacy of the Environmental Water Account Implementation," is part of a larger report assessing the Ecosystem Restoration Program (ERP) and EWA pursuant to the Conservation Agreement.[75] It is a comprehensive review of EWA's implementation during Years 1 through 3.

75 U.S. Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Game, *Reinitiation of Consultation: Assessing Progress Toward Milestones and the Efficacy of the Environmental Water Account,* July 9, 2004, pp. vi-viii and pp. 5-1 through 5-38.

Some of the information is used elsewhere in our report regarding progress on ROD actions. Highlights include:

- Asset (water) acquisition in terms of source and quantity varied from the ROD.
- There were no reductions in CVP or SWP exports to water users resulting from measures to protect fish. Pumping curtailments were compensated with EWA assets.
- Three years is too short a period to assess the adequacy of fish protection provided by the EWA, and there are many variables other than water availability; many of these variables are unknown and/or require further investigation. The 2004 Report addressed salmonids (Chinook salmon and steelhead) and Delta smelt.
- An EWA Technical Review Panel was convened for each year of EWA operation.[76] The panel noted that "the EWA was able to purchase the needed assets, work together collaboratively, involve stakeholders, and create decision criteria, but that improving species protection would require improved understanding of species biology and Delta processes." The Panel also expressed concern that the decreasing amounts of staffing and funding could seriously jeopardize the future ability of the EWA to respond to extreme events.[77]

2. **2005 Report.** This report[78] was prepared by the 2004 EWA Technical Review Panel. The 2005 Report focused on EWA operations for the first four years and long-term proposals. It provided an overview of EWA with an emphasis on the science aspect, rather than on detailed operations. Highlights include:

- The acquisition of water for the EWA continues to be performed effectively.
- There has been continuing advancement of understanding of Delta smelt ecology and incorporation of this information into models. Also, improved estimates of salmon spawning and incorporation of water quality concerns demonstrate good coordination and strategizing with regard to use of EWA resources.
- Integration and communication among environmental water programs (EWA, ERP, and CVP programs) has increased.

76 The EWA Technical Review Panel consisted of 10 members who were independent technical experts assembled by the Science Program's Lead Scientist. The Panel met annually until 2004; and will be meeting biennially in future years.

77 U.S. Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Game, op. cit., p. 5-36.

78 2004 Environmental Water Account Technical Review Panel, *Review of the 2003-2004 Environmental Water Account,* January 17, 2005.

- Gaming models were used to examine future EWA needs based on application of existing decision tree criteria. The Technical Review Panel supports the past and ongoing use of gaming models, which provide a better understanding of the options and limitations of water availability and ecosystem needs.
- EWA has helped reduce clashes among fish agencies, water system operators, and urban and agricultural water contractors.
- The Technical Review Panel recommended that once the long-term planning needs are met, the reviews take place every two years.

In August 2005, as a response to the above report and its suggestions, the EWA implementing agencies and Authority's Lead Scientist prepared a draft plan to address the panel's suggestions to the extent practicable given levels of funding and staffing.

B. ROD Actions and Conservation Agreement

This section assesses the EWA's progress on meeting its ROD actions and targets as well as the funding commitment in the Conservation Agreement. The information on ROD actions was based on the draft *Multi-Year Program Plan (Years 6-9*), the 2004 Report, and discussions with program staff.

1. **Original CALFED ROD:**

   - ***Tier 2—****The volume of water available annually for Tier 2 should average 380 thousand acre-feet (TAF)—185 TAF from purchases, and 195 TAF through water released upstream for ecological/fish purposes and water pumped at the SWP and CVP when there is additional capacity/flexibility ("operational assets"). The 195 TAF is subject to variation based on hydrologic conditions, and the entire amount is subject to variation per the ROD and EWA Operating Principles Agreement.*
   - ***Tier 3—****Although it is unlikely that these assets will be needed to meet ESA requirements, the CALFED agencies will prepare an implementation strategy for Tier 3 by August 2001 identifying tools and funding. In considering the need for Tier 3 assets, the fishery agencies will consider the views of an independent science panel.*
   - ***Asset Sources for Tier 2—****Initial water purchases and lease of groundwater storage will be secured from willing sellers by the end of 2000. In addition to the 380 TAF in assets to be acquired annually from specified sources, an*

initial deposit of water equivalent to 200 TAF of south-of-Delta storage will be acquired from a variety of sources to assure the effectiveness of the EWA and provide assurances for SWP and CVP water supply/deliveries. Borrowing agreements will allow the EWA to borrow water from the projects (SWP and CVP) for necessary actions during a water year as long as the water can be repaid without affecting the following year's allocations. Source shifting agreements with south-of-Delta water providers for 100 TAF will be used to enhance the effectiveness of the EWA.

There is an error in the description of the Tier 2 assets. The specification of 185 TAF in purchased water is correct, but the specification of 195 TAF in operational assets available from SWP/CVP pumping is incorrect—only 70 TAF is available from project operations. (According to program staff, this error was discovered during the first year of program operations.) The total amount of water available for Tier 2 was 255 TAF.

Assessment of Progress—Ongoing. Table D-1, below, displays the water available during the first four years of the EWA, compared to amounts specified in the ROD (as corrected for the error in operational assets), and the amount of EWA assets used to compensate for fish actions.

Table D-1. Annual EWA Assets Available, Fish Actions, and Source Shift Activations, per ROD (Corrected) and for Years 1 through 4 In Thousand Acre-feet (TAF)

	Corrected ROD *	Year 1	Year 2	Year 3	Year 4
Assets					
Purchases—Upstream of Delta	35	105	142	70	120
Purchases—South of Delta	150	231	98	145	35
SWP & CVP Operations/Other	70	31	32	75	-28
Carryover from Prior Year	n/a	n/a	77	58	0
Total, Assets	**255**	**367**	**349**	**348**	**127**
Fish Actions (EWA Water Use)**	**n/a**	**290**	**291**	**348**	**124**
Source Shift Activation	**Up to 100**	**50**	**0**	**0**	**0**

* The amount for SWP and CVP operations has been corrected from 195 TAF to 70 TAF to correct for the error in the ROD.

** The amount of EWA water needed to compensate for fish actions was not identified in the ROD.

Total Assets. Assets of 348-367 TAF exceeded the corrected ROD amount in Years 1 through 3. Assets of 127 TAF in Year 4 were lower than in prior years and lower than the amount specified in the ROD, because the frequency, severity, and duration of pumping curtailments were less than in prior years as a result of fewer fish in the area of the pumps and a drier year.[79]

Asset Sources. (1) The ROD had identified south-of-Delta water as making up the majority of purchases in the first year, but anticipated that upstream purchases would be greater in later years, which is what has occurred (upstream water was less expensive). (2) Regarding the 200 TAF equivalent initial deposit called for in the ROD, the EWA was not able to purchase 200 TAF of south-of-Delta storage. Instead, the DWR allowed the EWA to carry over (delay replacement of) into the following year up to 100 TAF of water borrowed from the SWP, which is considered functionally equivalent. (3) Source shifting—accelerating or delaying delivery of water to an SWP/CVP contractor—was identified in the ROD as a means for the EWA to satisfy obligations to contractors when storage and timing of exports are problematic. Source shifting was necessary only in Year 1.

Fish Actions. The assets appear to have been sufficient to compensate for the water reductions due to fish actions; however, in Year 3 (according to the chart in the draft Multi-Year Program Plan (Years 6-9)), fish losses for spring run surrogates exceeded the reconsultation level, possibly because there was not enough EWA water to further curtail pumping. It is also possible that excessive fish were lost because the lag time between determining the need for a fish action and implementing the curtailment is 3 days (per the Interim Protocols), although curtailments can be implemented in 3 to 4 hours in an urgent situation.

Tier 3. The third tier of fish protection has not yet been needed. According to the draft *Multi-Year Program Plan (Years 6-9)*, a process was put in place in March 2002 (seven months later than called for) to activate this tier if necessary. Funding was subsequently made available.

2. ***EWA ROD.*** *The EWA is allowed to purchase up to 600 TAF annually for fish actions. In most years, only 200-300 TAF will be required. The EWA agencies will apply the concept of functional equivalency by combining acquisition methods, water sources, and operational flexibilities to effectively respond to annual changes in hydrology and fish behavior in the Delta.*

79 In a drier year, there is less water available to pump, and therefore there is less water pumped.

Assessment of Progress—Ongoing. See discussion above regarding the original ROD. Although the EWA ROD was not adopted until March 2004, the EWA has operated in a more flexible manner than described in the original CALFED ROD, beginning in Year 2. (Prior to completion of the new ROD, annual environmental documents were prepared.)

3. ***Conservation Agreement.*** *The EWA shall receive funding of $50 million annually.*

   Assessment of Progress—Uncertain. As noted above, the *2004 Annual Report* indicated funding of $248 million for Years 1 through 5, which implies that this commitment was close to having been met; however, the DWR and USBR reported funding of only $186 million, which would imply that the funding commitment was not met. (According to the schedule provided by the DWR and USBR, the funding commitment was met in Year 1 only.)

C. Goals

The goal of the EWA is to provide increased water supply reliability to water users while at the same time assuring the availability of sufficient water to meet fishery protection and restoration/recovery needs as part of the overall ERP. More specifically, under the Conservation Agreement, there was to be no uncompensated reduction in water supplied by the SWP and CVP due to pumping curtailments for fish protection.

1. **Water Supply.** The EWA has been successful in maintaining water supplies during pumping curtailments taken to protect fish. According to the draft *Multi-Year Program Plan (Years 6-9)*, during Years 1 through 4, there were no reductions in SWP and CVP water deliveries. (Information for Year 5 water supplies is not yet available.) The EWA was deemed sufficiently successful in the 2004 Report (required by the Conservation Agreement for assessing the ERP and EWA) that it was extended through December 2007.

2. **Fish Protection.** It is not known whether the pumping curtailments were effective in protecting the fish. As noted in the 2004 Report, the program is too new to determine its impact on fish, and there are many other variables affecting fish health and safety. Also, the experience in Year 3 may warrant further investigation to determine if EWA assets were insufficient. Finally, since spring 2005, there has been a major decline in pelagic fish in the Delta that has generated great concern; intensive efforts are being made to determine the cause. Many Delta improvement projects are on hold until the cause of the fish decline can be determined and resolved. According to Conveyance Program staff, it is expected that the reason for the fish decline will not be determined until 2009.

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Appendix E. Water Use Efficiency Program

I. Funding,[80] Program Components, and Projects

A. Total Funding

For the Water Use Efficiency (WUE) program element, the *2004 Annual Report* indicated funding of $869 million during Years 1 through 5, which was 52 percent of the amount estimated in the ROD for this period. Of the funds received, 25 percent was provided by the state, 12 percent by the federal government, and 63 percent by users/local. (The original estimate in the ROD assumed that the state and federal governments would each provide 26 percent, and the users/local would provide the remaining 49 percent). State funding was provided through the General Fund (SB 23), Proposition 13, and Proposition 50. The local funding amounts are estimates of local matching funds for grants. Information is provided periodically from the implementing agencies but the final funding amounts are not verified.

B. Program Components

Table E-1 displays the specific components, original funding estimates, and the actual amounts spent, based on Authority records. These records differ from the figures in the *2004 Annual Report* because, according to Authority staff, they are based on more recent information.

80 As discussed in Section II, Background, the funding amounts in this report are taken from program records that have not been verified or validated.

Table E-1. Program Components by Estimated Costs and Actual Funds Received
Dollars in Millions

Program Component	Estimated Costs for Years 1 – 5	Actual Funds Received for Years 1 - 5	Percent of Estimated Costs That Were Funded	Distribution of Funds Received in Years 1 - 5, by Fund Source			
				State	Federal	Users/ Local	Total
Financial Incentives							
Urban, Agricultural & Wetlands	$975	$123	13%	$100	$11	$12	$123
Water Recycling	650	746	115%	114	92	540	746
Subtotal	**$1,625**	**$869**	**53%**	**$214**	**$103**	**$552**	**$869**
Technical Incentives							
Urban, Agricultural & Wetlands	$34	$29	85%	$29	-	-	$29
Water Recycling	6	-	23%	-	-	-	
Subtotal	**$40**	**$29**	**73%**	**$29**	**-**	**-**	**$29**
Directed Studies and Other	9	6	67%	6	-	-	6
Total	**$1,674**	**$904**	**54%**	**$249**	**$103**	**$552**	**$904**

As shown in Table E-1, the WUE program element has two main components, financial incentives and technical incentives, and each component includes two parts—urban/agricultural/wetlands and water recycling. The financial incentives component, which received $869 million, consists of grants, because CALFED recognized that grants provided the best incentive for achieving statewide water use efficiency. The technical incentives component, which received $29 million, includes labor to overcome technical barriers and low interest loans to overcome financial barriers.

Table E-1 shows that spending on financial incentive grants to urban, agricultural, and wetlands users ($123 million) was only 13 percent of the amount estimated in the ROD, while grants for water recycling ($746 million) were 115 percent of the amount estimated in the ROD. Although the incentives for urban, agricultural, and wetlands areas were anticipated in the ROD to receive 50 percent more funding than recycling, the reported actual funds for recycling were over six times greater than the amount for urban, agricultural, and wetlands areas. This disparity was mainly due to the fact that the large local cost share contributed toward water recycling grants

was not anticipated in the ROD; however, even the amount of state funds provided for water recycling was greater than the amount provided for conservation.

Specific criteria for grant funding were not reviewed for this report, although implementing agency staff stated that they rated proposals based on criteria including feasibility, technical merit, scientific merit, goals and objectives, monitoring and assessment, involvement and innovation, and benefit/cost.

C. Project Information

Table E-2, below, which was derived from the *Multi-Year Program Plan (Years 6-9)* and the *2004 Annual Report*, displays information about projects funded.[81] The table indicates that 272 projects were funded, for a total of $558.8 million in initial capital costs, including $92.8 million in state funding. The grant recipients reported on their applications that they expected the projects to yield potentially 89 thousand acre-feet (TAF) of savings per year. Each of the three implementing agencies (the Department of Water Resources [DWR], the State Water Resources Control Board [SWRCB], and the US Bureau of Reclamation [USBR]) administers grants. It should be noted that, although this information appears in both the *Multi-Year Program Plan (Years 6-9)* and the *2004 Annual Report*, neither the Authority nor the implementing agencies could substantiate the information or explain how it relates to the fiscal information in Table E-1.

Table E-2. Projects by Type, Dollars Awarded, and Yield

Dollars in Millions

Type of Project	Number of Projects	Dollars Awarded*				Annual Yield in TAF**	Dollars Awarded* per Annual TAF** Yield
		State	Federal	Local	Total		
Agricultural Water Conservation	113	$6.2	$6.4	$0.4	$13.0	15	$0.9
Urban Water Conservation	132	32.5	2.1	20.3	55.0	31	1.8
Water Recycling	27	54.1	68.6	368.1	490.8	43	11.4
Total	**272**	**$92.8**	**$77.1**	**$388.9**	**$558.8**	**89**	

Note: Numbers may not add due to rounding.

* Dollars awarded reflect initial capital costs.

** TAF = Thousand acre-feet.

81 CALFED Bay-Delta Authority, *Water Use Efficiency Program, Multi-Year Program Plan (Years 6-9),* p. 42, and *2004 Annual Report*, p. 19.

Table E-2 also shows that agricultural water conservation projects had the lowest cost, or $0.9 million, per annual TAF yield, while water recycling projects had the highest cost per annual TAF yield, or $11.4 million. Of the 272 projects, 27 (10 percent) were for water recycling; these projects accounted for $490.8 million, or 88 percent of the funding. Most of the water recycling projects (24 out of 27) were in Southern California. Agricultural water conservation projects were mostly in the San Joaquin and Sacramento Valleys, while the urban water conservation projects were distributed among the Sacramento Valley, Bay/Delta, and Southern California areas.

II. Performance Measures[82]

According to the *Multi-Year Program Plan (Years 6-9)*, performance measures have not been implemented, but are currently being developed. The Program is studying "metrics" that will quantify actions; "indicators" that will depict change (such as increase in the use of recycled water that results from a WUE project); "conceptual models" that will "link the indicators to objectives and goals"; "targets" that will show the desired or "expected amount of change for a given indicator"; and "targeted benefits" that will show the difference between the target and the actual condition. According to Authority staff, these categories of measures are new to the WUE Program, and WUE is one of the first CALFED program elements to be developing them.

In addition, foundational work has been done on "Quantifiable Objectives" (QOs) for agricultural water use efficiency. The QOs are estimates of regional water use efficiency benefits for in-stream flow and timing, water quantity, and water quality and are measured in acre-feet of water. On the other hand, the *Multi-Year Program Plan (Years 6-9)* also pointed out that the QOs have been difficult to implement (due to resource and marketing constraints), that new QOs should not be developed, but that those already developed should continue to be used. Thus, the WUE performance measures appear to be a work in progress, and their effectiveness to date is unclear.

82 See Section II, Background, for an overview of CALFED performance measures.

III. Accomplishments

A. Assessment Report

The ROD called for WUE to prepare a comprehensive evaluation of the program's first four years. This evaluation has not been completed, so comments cannot be included within this report.

B. ROD Actions

This section assesses WUE's progress on meeting its ROD actions. Assessment of progress relative to most ROD actions was not included in the *Multi-Year Program Plan (Years 6-9)*. Assessment information is largely derived from various documents produced per ROD actions, discussion with program staff, and the *2004 Annual Report*.

1. ***CALFED agencies will prepare a program implementation plan by December 2000.*** *The plan will include a proposed organizational structure, responsibilities for technical assistance programs, and the grant/loan program and evaluation procedures. In developing the grant/loan program, CALFED agencies will consider the other Programs and ongoing stakeholder forums which include the Agricultural Water Management Council (AWMC), California Urban Water Conservation Council (CUWCC), steering committees which provide guidance to CALFED agencies, and the public advisory committee. The program implementation plan will include:*

   - ***Incentives in the agricultural sector*** *including: (i) the potential for reducing irrecoverable water losses; (ii) potential for attaining environmental and/or water quality benefits from WUE measures; (iii) regional variation in water management options and opportunities; (iv) availability and cost of alternative water supplies; and (v) whether the water needs of the recipient area can be satisfied from existing sources.*

   - ***Incentives in the urban sector*** *that will focus on implementing the urban memorandum of understanding (MOU) process and on identifying and implementing measures that are supplemental to best management practices (BMPs) and are cost effective from a statewide perspective.*

- ***Incentives in the water reclamation area*** *that will recognize the importance of regional water recycling programs. CALFED agencies will work with stakeholders to create cost-effectiveness criteria.*
- ***A plan for making financial allocations in the incentive programs*** *in the early years of implementation, in advance of approvals and/or certifications by the applicable Urban or Agricultural sector councils.*

Assessment of Progress—Partly completed. In December of 2000, CALFED created the *CALFED Water Use Efficiency Preliminary Program Implementation Plan*. The document stated that it was preliminary and expected to evolve over time. The Plan addressed the majority of items that were specified in this ROD action, however did not appear to include the level of detail specified. A final version of the plan was never prepared. According to Authority staff, the annual multi-year program plans were prepared instead of a final plan.

2. ***CALFED agencies will establish milestones, and associated benefits, remedies, and/or consequences to track and guide the implementation of the Agricultural Water Use Efficiency Program.*** *Within one year from the adoption of the ROD, CALFED agencies will put in place a process, structured to include the involvement and buy-in of interested parties (stakeholder and agency) to accomplish this work. The process will build on the work already begun by the Agricultural Water Use Efficiency Steering Committee.*

Assessment of Progress—Completed (late) but usefulness questionable. In September 2002, the Staff Proposal for Agricultural Water Use Efficiency Milestones was issued by the Water Use Efficiency Subcommittee of the Bay-Delta Public Advisory Committee (BDPAC). The document, also known as the Agricultural Assurances, was developed as the result of discussions and deliberations by stakeholders, the Agricultural WUE Steering Committee deliberations, and a staff work group consisting of agricultural, environmental, and CALFED agency representatives and partners. It is considered a document that will require ongoing effort to be useful in developing stakeholder acceptance. The proposal lists administrative milestones that target acreage to be covered by the program, implementation milestones that reflect grant funding, and results milestones that are measurements of water conservation in terms of quantity, quality, and timing/flow. The document was adopted by the CALFED agencies, however the DWR had difficulty in implementing parts of it due to the technical nature of the program as well as funding and marketing constraints. As a result, the DWR is currently working on a more simplified approach/document. Any

results achieved relative to the milestones were incidental and not formally tracked or reported as envisioned per the 2002 document.

3. ***The CALFED agencies will develop a detailed finance proposal for Stage 1.*** *It will include an evaluation of local cost share potential and be completed by July 2001. CALFED agencies will assure that the Water Use Efficiency Program has sufficient resources for vigorous programs in each of the agricultural, urban, and water reclamation sectors.*

   Assessment of Progress—Not addressed. In response to our request to provide a copy of the finance proposal, Authority staff provided the January 2005 proposal for the subsequent ten years for all the program elements. The plan was not approved, was for a later time period, and did not include local cost share potential. We therefore did not consider it relevant to this action.

4. ***The DWR and USBR will work with the CUWCC and AWMC to provide technical assistance to urban agencies and agricultural districts developing management plans under the Urban Water Management Planning Act and the AB 3616 process.***[83] *This effort, when combined with efforts of the Natural Resources Conservation Service and California Department of Food and Agriculture, will in the first four years of Stage 1 provide $34 million in technical assistance to districts and agencies in meeting their Council-endorsed or certified management plans.*

   Assessment of Progress—Ongoing. According to program staff, $19.3 million was provided during Years 1 through 5 for technical assistance in urban/agricultural/wetlands areas, versus the $34 million called for above. This ROD action was further addressed in the *Multi-Year Program Plan (Years 6-9)*, as follows:

   Urban Technical Assistance—The *Multi-Year Program Plan (Years 6-9)* states that the WUE program staff supported CUWCC in conducting workshops and presentations throughout California on use of the Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 (pertaining to water management). WUE staff continued to work with the CUWCC on developing another guidebook which was published in January 2005 for water suppliers to prepare the 2005 urban water management plans required by the Urban Water Management Planning Act. WUE staff also cooperated with CUWCC in conducting nine workshops statewide to assist water suppliers in preparation of their plans.

83 AB 3616 is the Agricultural Water Suppliers Efficient Water Management Practices Act, enacted in 1990. See Water Code Section 10903.

Agricultural Technical Assistance—The WUE staff, in cooperation with the AWMC, developed and refined a user-friendly and web-based water management planning tool, as well as refined and completed a model water management plan. Quantifiable objectives have continued to be integrated and incorporated into the water management planning and implementation process. General audits of 29 water management plans and detailed audits of 5 water management plans have been completed. The WUE Program continues to provide financial and technical support for the Agricultural Water Management Council, a nonprofit organization dedicated to bringing together all interested parties in agricultural water management.

5. ***The Department of the Interior will create a public advisory committee to advise state and federal agencies on structure and implementation of assistance programs and to coordinate federal, state, regional and local efforts for maximum effectiveness.*** *The advisory committee will be established by December 2000.*

Assessment of Progress—Completed (late). The BDPAC was established by a US Department of Interior charter dated June 8, 2001 (filed on July 22, 2001) to advise the Secretary of the Interior and the Governor regarding the implementation of CALFED. The BDPAC charter was to expire two years from the date it was filed, in accordance with Section 14 of the Federal Advisory Committee Act. The charter was renewed in 2003, and again in 2005. The 2005 charter clarified the role of BDPAC. Specifically, the BDPAC shall advise specified federal entities, and may share information with specified state entities.

The committee consists of 30 members who represent an array of environmental, water, tribal, and civic interest groups, and provide a link among CALFED agencies, stakeholders, and the public. Nine subcommittees provide oversight and input on specific program areas, including water use efficiency.

6. ***CALFED agencies will implement a process for certification of water suppliers' compliance with the terms of the urban MOU, including implementation of BMPs for urban water conservation, by the end of 2002.***

Urban MOU signatories are water suppliers that voluntarily commit to promoting and implementing specific water-saving BMPs. The Urban MOU has been in existence since 1991. As an incentive to participating in the Urban MOU, the SWRCB has required water recycling and wastewater treatment grant applicants to be signatories or otherwise prepare their own water conservation plans. According to program staff, many of the signatory water suppliers do not comply with the

MOU and/or do not report on their compliance activities. According to program staff, water savings under the Urban MOU have increased from 120,000 acre-feet in 2000, when the ROD was signed, to 180,000 acre-feet in 2004. (Savings were 20,000 acre-feet in 1991, when the Urban MOU was initiated.)

Assessment of Progress—Behind schedule. In 2002, WUE issued a report that provided a framework in which an independent enforcement entity would certify water supplier compliance with the Urban MOU. The framework was the culmination of more than two years of work by CALFED agencies, the CUWCC, and WUE stakeholders. Statewide workshops were held to explain the proposed framework and receive public comment. The framework was brought to the BDPAC for adoption, but the BDPAC took no action because it was concerned about unresolved technical issues and proposals made by water suppliers to link certification to progress on other CALFED program elements. The BDPAC also questioned the need for a regulatory approach. While the technical issues have been largely addressed, progress has not been made on the other issues. Currently, the Urban MOU certification process is not being pursued.

7. ***Report program progress in annual evaluations and a comprehensive evaluation of the Program's first four years. Make appropriate additional state and federal investments and actions to assure continued aggressive implementation of water use efficiency measures.***

Assessment of Progress—*Partly completed, partly behind schedule.* The WUE Program prepares a multi-year program plan each year, and the Authority produces an annual report on all the program elements. The WUE staff believe that those reports are sufficient in satisfying the annual requirement of the ROD Action. The four-year evaluation is still in progress. When the four-year evaluation is reviewed, a determination will be made as to future actions and investments.

8. ***An independent review panel will be convened to provide guidance that will help define appropriate measurement as it relates to surface and groundwater usage.*** *The panel will prepare a consensus definition of appropriate measurement by the end of 2001.*

A definition of appropriate measurement was recommended in the ROD because for agricultural and urban water use, there were inconsistent and redundant state requirements, as well as incomplete and incompatible reporting of water use data by both local and state water suppliers. These problems put a burden on local water suppliers striving to comply with standards, and undercut the state's ability

to manage its limited water resources and make important long-term decisions regarding the construction of new storage facilities.

Assessment of Progress—Completed (late). In September 2003, an independent review panel completed a consensus report on appropriate measurement of agricultural water use. Additionally, Authority staff prepared a definition of appropriate urban water measurement.

9. ***CALFED agencies will work with the California State Legislature to develop legislation for requiring the appropriate measurement of all water uses in the State of California.*** *Legislation to be for introduction and enactment by 2003.*

Assessment of Progress—Behind schedule. In April 2004, Authority staff and the Water Use Efficiency Subcommittee of BDPAC recommended that the Authority's director work with the Administration and the Legislature on implementing a proposal for water use measurement (see ROD action #8, above). A sponsor was enlisted and draft legislation was created in 2004. The legislation was introduced as SB 866 in February 2005. A hearing was scheduled for April 20, 2005, then cancelled at the request of the author. No further progress has been made. According to Authority staff, the measurement actions that can be implemented through administrative actions have not been pursued by the responsible agencies.

10. ***CALFED agencies will develop and support proposals to ensure that incentives to conserve water accrue directly to landowners, and not to the irrigation district or water supply agency (complementary action).***

This complementary action also appears in the Water Transfer Program.

Assessment of Progress—Not addressed. Although this action was deemed not applicable to the Water Transfer Program, it appears to be applicable to the WUE Program because it relates to conservation. WUE Program staff indicated that this action was not addressed but gave no explanation.

C. Goals

The goal for WUE is stated differently in various documents. Our review addresses the goal stated most clearly, which is in the *Multi-Year Program Plan (Years 6-9)*: "to advance the implementation of cost-effective water conservation and recycling practices throughout the State that contribute to California Bay-Delta Program water

supply reliability, water quality, and ecosystem restoration goals. These practices include agricultural water conservation, urban water conservation, water recycling, and wetlands water management."[84] To address progress, we have broken the goal down into the following categories:

1. **Advance water conservation and recycling in the following areas:**

   - **Agricultural water conservation.** This goal was most directly addressed in ROD action #2, which called for agricultural assurances; however, the agricultural assurances program initially did not meet with success, and is being reviewed for improvement (see discussion above). Technical assistance was provided to the agricultural sector, as described in ROD action #4, above. As shown in Table E-2, 113 grants were funded, total costs were $13 million, and the projects are expected to yield 15 TAF per year.

   - **Urban water conservation.** This goal was most directly addressed in ROD action #6, which called for certification of compliance with the Urban MOU; this regulatory approach appears to have been abandoned, and there does not appear to be another approach for improving compliance. Technical assistance was provided to the urban sector, as described in ROD action #4, above. As shown in Table E-2, 132 grants were funded, total costs were $55 million, and the projects are expected to yield 31 TAF per year.

   - **Wetlands water management.** This area was not directly addressed in a ROD action, and based on our review of program documents, it appears little has been done in this area. The *Multi-Year Program Plan (Years 6-9)* indicates that refuge water management plan criteria were completed in 2004. These criteria provide guidance for wetlands managers when preparing refuge water use efficiency plans.

   - **Recycling.** Although this area was not directly addressed in a ROD action, recycling received over six times as much funding as the areas above combined. As shown in Table E-2, 27 grants were funded, total costs were $491 million, and the projects are expected to yield 43 TAF per year.

2. **Use cost-effective practices.** As shown in Table E-2, the initial capital cost per annual TAF yield in funded projects has ranged from $0.9 million for agricultural projects to $11.4 million for water recycling projects. Determining whether these projects are cost-effective is outside the scope of this review.

84 CALFED Bay-Delta Program, *Water Use Efficiency Program Multi-Year Program Plan (Years 6-9)*, July 2005, p. 4.

3. **Contribute to water supply reliability, water quality, and ecosystem restoration.** It is premature to assess the extent to which the program has contributed to this goal, largely because funded projects have not been completed.

D. Objectives

As noted in Section VII, Water Use Efficiency Program, there are six objectives. Progress on these objectives is as follows:

1. **Reduce existing irrecoverable losses.** In the ROD, the Preferred Program Alternative identified potential recovery of 1,400 TAF of water annually by 2020, and the Plan of Action identified potential recovery of 1,005-1,348 TAF of water annually by the end of Stage 1 (2007). Savings have been reported in several documents, but reported amounts do not appear to be consistent. In addition, the reported savings include both recoverable and irrecoverable losses.

   - The *2004 Annual Report* indicates that projects funded to date are expected to result in annual water savings of nearly 50,000 acre-feet of conserved water, and to recycle more than 400,000 acre-feet of water.[85]
   - The *Multi-Year Program Plan (Years 6-9)* and *2004 Annual Report* indicate that funded projects have the potential to save 89,000 acre-feet per year (see Table E-2, above).
   - Program staff indicate that the Urban MOU has resulted in savings of 180,000 acre-feet per year, or a 2 percent reduction in urban water use statewide. Agricultural savings are 50,251 acre-feet per year.[86]

2. **Achieve multiple benefits.** None of the three implementing agencies, all of which administer WUE grants, reports data on the extent to which the funded grants are designed to meet multiple CALFED objectives (water supply reliability, ecosystem restoration, water quality).

3. **Preserve local flexibility.** Local flexibility is promoted through the basic structure of the program. The Urban MOU is designed such that signatories (local water users) voluntarily adopt the recommended water conserving actions that are appropriate for their local circumstances. In addition, because the

85 CALFED Bay-Delta Program, *2004 Annual Report*, p. 8.
86 Unpublished draft of four-year comprehensive WUE Program review.

program functions by providing grants and loans, local entities have the option (flexibility) to apply for funding or not.

4. **Use incentive-based actions over regulatory actions.** The WUE Program relies heavily on financial incentives in the form of grants and loans, and technical incentives in the form of technical assistance, workshops, and other forms of information sharing. Certification of compliance with the Urban MOU, which would have been a regulatory process, has not been adopted by the BDPAC, as discussed under ROD action #6, above.

5. **Build on existing water use efficiency programs.** WUE continues to promote the Urban MOU, which has been in existence since 1991; however, WUE has not determined a means for improving compliance with the Urban MOU (as discussed in ROD action #6, above). The agricultural assurances were built on the work of the Agricultural Water Use Efficiency Steering Committee (as discussed in ROD action #2, above); however, they have been of limited use.

6. **Provide assurance of high water use efficiency.**[87] It is premature to assess the extent to which the program has met this objective, largely because funded projects have not been completed.

87 CALFED Bay-Delta Program, *Water Use Efficiency Program Plan, Final Programmatic EIS/EIR*, July 2000, p. 2-2.

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Appendix F. Drinking Water Quality Program

I. Funding[88] and Projects

A. Total Funding

For the Drinking Water Quality Program (DWQP) element, the *2004 Annual Report* indicates funding of $111 million for Years 1 through 5, or 18 percent of the $611 million original cost estimated for this period (see Table II-2 in Section II, Background). Program staff indicate that the original estimate was so large because the DWQP was envisioned as carrying out major construction and improvement projects. The original estimate assumed that 30 percent of the costs would be provided by the federal government, but federal funds represent only 2 percent of the amount received and only 1 percent of the original estimate. The original estimate also assumed that 39 percent of the costs would be paid by the users and local government, but these sources represent only 8 percent of the amount received and only 4 percent of the original estimate.

B. Project Funding

Information on funded projects was provided by the DWQP staff, based on project records. Table F-1, below, displays the number of projects funded and the dollar amount provided or awarded. The table focuses on funds awarded, and excludes matching funds applied to the grants, appropriated funds that were reverted, and

88 As discussed in Section II, Background, the funding amounts in this report are taken from program records that have not been verified or validated.

$4.4 million for support costs of the administering agencies, i.e., Department of Water Resources (DWR) and the State Water Resources Control Board (SWRCB).

Table F-1. Project Funding

Fiscal Year Awarded	Admin. Agency	Dollars Awarded (millions)		Grants Funded	
		Total	Fund Source Detail	Number*	Completed
1999-00	DWR	$1.3	Federal - USEPA	5	5
2000-01	DWR	$29.2	$7.9 GF competitive grants $1.3 Prop. 13 - agricultural discharge $20 Prop. 13 - water exchange	18	17
2001-02	SWRCB	$7.2	$7.2 Prop. 13 - competitive grants	13	0
2002-03	DWR, SWRCB	$28.6	$11.5 Prop. 13 - competitive grants $17.1 Prop. 50 - competitive grants	20	0
2003-04	DWR	$1.6	$1.5 Prop. 13 - agricultural discharge $0.1 Federal - USEPA	2	0
2004-05	DWR	$11.0	$10.3 Prop. 13 - agricultural discharge $0.7 Federal - USEPA	3	0
All Years		**$78.9**		**61**	**19**

* Excludes three projects that were discontinued and de-funded.

Of the $78.9 million awarded, about $44 million (55 percent) was for competitive grants. Most of the monies were bond funds, which generally are for implementation activities and construction projects. Proposition 50 provided greater latitude than Proposition 13 by allowing project-related monitoring and assessment activities. Bond funds generally do not cover long-term monitoring and assessment activities. Another $33 million awarded consisted of Proposition 13 funds that were designated in legislation for projects to treat or relocate agricultural discharges affecting the Contra Costa Water District,[89] and for a water exchange partnership between the San Joaquin Valley interests and the Metropolitan Water District in Southern California.

89 California Water Code Sections 79190(d)(B)(i) and 79196.5(a).

C. Project Information

The 61 projects cited above reflect only those funded through the DWQP. There are 13 additional projects that contribute to the DWQP and are tracked as DWQP projects for purposes of meeting program commitments. These projects were funded by other CALFED program elements (Ecosystem Restoration, Watershed Management, and Conveyance) as well as the US Environmental Protection Agency (USEPA). Thus, the DWQP tracks a total of 74 projects, representing a total of $96.2 million in funds provided. These projects are further described in the Tables F-2 and F-3, below.

Table F-2. Projects by Type

Type of Project	Number of Projects	Dollars Awarded (Millions)
Research Toward Implementation	29	$48.6
Implementation	20	23.8
Research and Monitoring	19	22.4
Institutional/Other	6	1.4
Total	**74**	**$96.2**

As shown in Table F-2, the largest group of projects (29) is for research toward implementation; these are essentially demonstration projects. The next largest group (20) is for implementation, which represents physical changes to the system, including "best management practices" (i.e., techniques for reducing the discharge of pollutants). The third largest group (19) is for research and monitoring, which add to scientific understanding. Generally, these research and monitoring projects are locally focused and short term, and do not enhance the capability of CALFED to monitor and assess long-term changes in conditions of the Bay-Delta in a systematic manner.

Table F-3 displays the 74 projects in terms of their contributions to ROD actions. The majority of projects (42) and nearly half the funding are for source controls in the Delta. The second largest group of projects (12) is to control runoff in the California Aqueduct and similar conveyances. Seven of the projects are for program activities not addressed in the ROD, and four are for treatment technology demonstrations.

The remaining ROD actions had zero to three projects. The projects are discussed further below, under "Accomplishments."

Table F-3. Projects by ROD Action

ROD Action	Number of Projects	Dollars Awarded (Millions)
San Joaquin Valley Drainage	3	$1.6
Source Controls in the Delta	42	45.9
Support Drinking Water Council	1	0.1
Treatment Technology Demonstrations	4	1.9
Control Runoff to California Aqueduct	12	17.7
Water Quality in North Bay Aqueduct	2	0.6
Recirculate Export Water	1	0
Bay Area Blending Exchange	1	1.3
Water Quality Exchanges	1	20.0
Plan to Meet All Water Quality Standards	0	0
None	7	7.1
Total	**74**	**$96.2**

II. Performance Measures[90]

According to the draft *Multi-Year Program Plan (Years 6-9)*, there is still a great deal of work required to develop a meaningful method of measuring performance. Additional scientific research, including more extensive monitoring and assessment, is needed to understand the origin, movement, and roles of drinking water constituents of concern in order to identify appropriate actions as well as performance measures. Funding for this kind of research has been very limited in the DWQP due to restrictions in the bond measures. Further, water quality

90 See Section II, Background, for an overview of CALFED performance measures.

changes—due to the DWQP and other forces—may take decades to effect as well as to determine, because the Delta system is highly dynamic and variable.

The DWQP has initiated two efforts to begin developing performance measures. One effort, in conjunction with the Science Program, is to develop standards for regional ELPH plans (see Section VIII, Drinking Water Quality Program, for a discussion of "equivalent level of public health" [ELPH] protection). Another effort is a matrix of measures that was initiated in late 2004 and is still in a preliminary stage. The matrix includes input measures ("Level 1" administrative measures) on projects, and output measures ("Level 2" program product measures) of constituent concentrations and ROD actions. It is not clear what would constitute an outcome measure ("Level 3" measure of program effectiveness), but DWQP staff indicate that such a measure might be based on accomplishment of ELPH protection.

III. Accomplishments

This section reviews the DWQP's accomplishments, first in terms of a recent consultant assessment, then in terms of the ROD and other activities, and finally in terms of the goals and targets.

A. Assessment Report

In June 2005, the DWQP released the *CALFED Water Quality Program Assessment Report* (Assessment Report), a study conducted over a period of eight months by the consulting firm of Brown and Caldwell. The report addressed progress on each ROD action as well as the extent to which the DWQP was meeting goals for water quality.[91] The report included water quality projects funded by various program elements, not just the DWQP. The report provided much useful information and reached several significant conclusions, summarized as follows:

- Progress has been made on all DWQP ROD actions.
- There needs to be more realistic schedules and expectations for projects and the DWQP as a whole, in light of funding constraints and contracting delays, as well as the fact that changes in water quality will take many years to achieve.
- There needs to be better coordination among projects; the DWQP needs a more coherent program that includes prioritization of projects.

91 The Assessment Report differed from this report in its identification of the ROD action addressed by each project, because the DWQP staff made some changes.

- The DWQP has been appropriately shifting its focus from fulfilling ROD actions to "considering its role in a more comprehensive results-based strategy, through its focus on achieving ELPH." [92]

According to implementing agency staff, the conclusions reached about progress on the ROD actions were developed by the implementing agencies in discussion with the consultants. Where appropriate, our report draws on factual information in the Assessment Report.

B. ROD Actions

The information below assesses the DWQP's progress on meeting its ROD actions and discusses other actions not addressed by the ROD.

1. ***Address drainage problems in the San Joaquin Valley to improve downstream water quality.*** *This action includes implementing recommendations from the San Joaquin Valley Drainage Program, identifying and supporting innovative drainage management programs, and supporting voluntary land retirement. Actions include:*

   - *By the end of 2001: Finalize State Basin Plan Amendment and Total Maximum Daily Load (TMDL) for salinity in lower San Joaquin River.*
   - *By the end of 2003: Begin implementation of source control measures (e.g., on farm and district actions, development of treatment technology, real-time management, and reuse projects).*

   State and federal laws and regulations have established a process for regulating the amount of a specific substance that can be discharged into water, or TMDL, and for incorporating this limit into a legally binding regional plan, called the State Basin Plan. The State Basin Plan for the Delta area is developed by the Central Valley Regional Water Quality Control Board (CVRWQCB), subject to approval by the SWRCB, and Office of Administrative Law (OAL), and then by the USEPA. The regulatory process (meetings, public comment, etc.) requires anywhere from two months to several years prior to adoption by the regional board. Approval by the SWRCB and OAL takes a minimum of six months, at which time the regulations become effective and a source control program may be implemented. USEPA approval is needed for certain types of regulations to be legally binding, at which time the basin plan and TMDL are deemed to be finalized; USEPA approval takes a minimum of three months.

92 Brown and Caldwell, *CALFED Water Quality Program Assessment Report,* June 2005, p. ES-5.

Drainage problems in the San Joaquin Valley have been a concern for decades and have been addressed by the DWR and US Bureau of Reclamation (USBR), which have responsibilities deriving from their operation of the State Water Project and Central Valley Project, respectively. High concentrations of salts and selenium are the greatest concerns; a TMDL for selenium was adopted in the late 1990s and is being implemented. Various other plans have been developed, including the San Joaquin Valley Drainage Program in 1990, and a "westside plan" in October 2004 which is expected to address most of the drainage problems at an estimated cost of $86 million.[93] The problems are complex and solutions are imperfect; for example, reducing drainage into the San Joaquin River may impair the water flow levels needed for fish.

Assessment of Progress—Behind schedule. The State Basin Plan Amendment and TMDL for salt and boron were completed and approved by the CVRWQCB in September 2004, delayed primarily by the contentious nature of the issue. The Amendment and TMDL were approved by the SWRCB in November 2005; the earliest approval by the USEPA is probably March 2006.

A significant number of recommendations of the San Joaquin Valley Drainage Program have been implemented, and farmers have made a number of efforts to reduce salinity through better management techniques. Local districts have begun implementing the westside plan with funds provided through the USBR, state bond funding, and district funding. The work is expected to be completed by 2009.[94] Significant work remains to be done, and it will take several years to install the necessary infrastructure. Progress has been affected by litigation and funding constraints. The role of the DWQP has been very limited, and has consisted of three projects ($1.6 million total), including a desalination demonstration project, a water reuse and recovery demonstration project, and a real-time monitoring and management project (which needs permanent funding to remain effective).

2. ***Implement source controls in the Delta and its tributaries.*** *CALFED will coordinate a comprehensive source water protection program, including identification and implementation of appropriate pollutant control measures,*

93 Summers Engineering, Inc., *Grassland Drainage Area—In-Valley Drainage Solution Projects,* October 2004.

94 Jason Phillips, US Bureau of Reclamation, personal communication, September 15, 2005. This work is also included in a larger, 30-year plan to address drainage problems, most of which do not affect drainage into the San Joaquin River. The larger project, the San Luis Drain Feature Re-evaluation, was developed in response to a court order issued in 2000. Implementation is scheduled to begin in late 2007. The draft environmental impact statement, May 2005, can be seen at http://www.usbr.gov/mp/mp150/envdocs/V1%20Pt1_Covers,%20Title%20Page,%20Exec%20Sum,%20Front%20Matter.pdf, visited September 15, 2005.

focused regulatory and/or incentive programs targeting pollutants of concern, development of a monitoring and assessment program, and infrastructure improvements. Actions include:

- *By the end of 2004: CVRWQCB, with support from CALFED and the Department of Health Services (DHS), will establish comprehensive state drinking water policy for Delta and upstream tributaries.*
- *By the beginning of 2003: Develop comprehensive monitoring and assessment program as part of the CALFED Science Program.*
- *By the end of 2004: Evaluate and determine if additional protective measures (regulatory or incentive-based) are necessary.*
- *By the end of 2006: CVRWQCB, with support from DWR and DHS, will begin implementation of source control measures (e.g., advanced wastewater treatment, local drainage management).*

The establishment of a drinking water policy for the Delta is an enormous and important undertaking. Current federal laws regulate water contaminants, but there are regulatory gaps between the regulated contaminants in source water and those in treated drinking water. For this reason, the scientific data and understanding are not fully developed. The drinking water policy is expected to make the linkages between source water and treated water, identify problem areas, and provide direction for appropriate and cost-effective actions that should be taken throughout the water supply system.

Assessment of Progress—Partly behind schedule, partly ahead of schedule. Development of the drinking water policy has been delayed beyond the 2004 target date due to insufficient resources and priority (i.e., higher priority was placed on developing TMDLs in other areas). The Authority was instrumental in locating local government and water district financial support to restart the effort in 2003. To affirm the importance of the work, the CVRWQCB adopted a resolution in July 2004 supporting development of the policy. The current work plan calls for the completion of technical studies and draft policy recommendations (draft Basin Plan amendments) by the end of 2007; thus, the earliest the policy could be established (i.e., approved by the SWRCB and USEPA) is the end of 2009, or five years later than called for in the ROD.

The DWQP was able to use General Fund monies provided early in the program to construct two monitoring stations, but since then funding provided from bonds

could not be used for monitoring and assessment. The drinking water policy will be developed mostly using existing, limited monitoring data. Technical studies (supported by the SWRCB) include limited funds for supplemental monitoring, and may lead to the identification of additional priorities for monitoring and assessment. The evaluation and determination of additional protective measures are an expected part of the drinking water policy.

The CVRWQCB cannot implement source controls until it has a regulation in place. The DWQP, however, has been funding source control projects since prior to the ROD (the early projects were funded by the USEPA); these projects constitute the biggest investment of the program (i.e., 42 projects, $45.9 million). The projects are mostly research and monitoring (16 projects), which add to scientific understanding, and research toward implementation (16 projects), which are demonstration projects that show how known technologies can be used in the Delta area. Eight projects have been implementation projects, whose purpose was to make system changes. Results of these projects are being incorporated into the technical knowledge being assembled for development of the drinking water policy.

3. ***Support the ongoing efforts of the Delta Drinking Water Council.*** *Assist Council in developing technical information, identifying treatment options, etc., for CALFED agencies. The Council will rely in part on a multi-year USEPA evaluation of standards and treatment options.*

   - *By the end of 2003: Council will complete initial assessment of progress toward CALFED targets.*
   - *By the end of 2007: Council will complete final assessment and submit recommendations.*

   The Delta Drinking Water Council has been replaced by the Drinking Water Subcommittee of the Bay-Delta Public Advisory Committee (BDPAC). The role of the Subcommittee is different from that described in the ROD, in that the Subcommittee does not develop technical information or identify treatment options, but provides review and comments. The Subcommittee also assumed responsibility for developing the ELPH concept, which was not clearly defined at the time of the ROD.

   Assessment of Progress—Partly on schedule, partly no longer applicable. The Assessment Report describes a close and successful working relationship between the DWQP and the Subcommittee. The Assessment Report itself

fulfills the first progress report commitment in the ROD. The report was 17 months late, which does not appear unreasonable because the delays in grant contracting led to delays in obtaining project results that could be assessed. The DWQP counts one project toward this commitment, which was for program workshops in support of regional planning.

4. ***Invest in treatment technology demonstration projects.***

   - *By the end of 2002: Initiate ultraviolet (UV) disinfection plant demonstration project.*
   - *By the end of 2002: Initiate regional desalination demonstration project.*
   - *By the beginning of 2007: Evaluate practicality and determine timelines for full-scale implementation.*

   Assessment of Progress—Completed to date. A total of four treatment technology demonstration projects ($1.9 million) were funded. Two UV disinfection projects were funded (began work October 2002), and two additional technologies were tested. One desalination project was funded (began work July 2003), and is counted toward the first ROD action regarding drainage in the San Joaquin Valley. Authority staff indicate that the evaluation of practicality and schedule for implementation for desalination will most likely be undertaken by the USBR given its responsibility for San Joaquin Valley drainage. The CALFED Science Program may also become involved.

5. ***Control runoff into the California Aqueduct and similar conveyances.***

   - *By the end of 2001: Initiate comprehensive evaluation of physical modifications.*
   - *By the beginning of 2004: Develop and implement watershed management programs adjacent to conveyance channels.*
   - *By the end of 2005: Identify and begin implementation of necessary physical improvements.*

   The California Aqueduct carries water from the South Delta to Southern California. The South Bay Aqueduct carries water from the South Delta to the Santa Clara and Alameda areas. The North Bay Aqueduct carries water from Sacramento River sloughs to the Solano area. Pursuant to DHS regulations, the DWR conducts a Sanitary Survey of the entire aqueduct system. (A sanitary survey is an onsite review of the water source, facilities, equipment, operation,

and maintenance of a public water system in order to identify problems that may affect the safety of the water.) The DWQP has interpreted the term "similar conveyances" to include three intakes/conveyances from the Delta to Contra Costa County; the Contra Costa Water District conducts its own sanitary survey. (Note: Projects involving the three Contra Costa County intakes/conveyances seek to reduce agricultural drainage in the Delta, which is a ROD action originally included in the Conveyance Program.)

Assessment of Progress—Completed. There have been 12 projects ($17.7 million) contributing to this ROD action. The commitment to evaluate physical modifications was fulfilled through the Sanitary Survey, and no need for additional physical improvements was identified as a result of the last survey. There have been longstanding physical problems in the Contra Costa Water District conveyances, and construction improvements (four projects, $11.9 million—mostly Proposition 13) are nearly complete. Runoff problems and other storage and conveyance issues related to drinking water quality have been addressed by several DWQP projects in the San Joaquin Valley and the Bay Area, as well as Southern California reservoirs.

6. ***Address water quality problems at North Bay Aqueduct.*** *The North Bay Aqueduct suffers from high organic carbon and turbidity from local runoff.*

   - *Provide funding to implement best management practices (BMPs) to improve watershed runoff water quality.*
   - *Study feasibility of relocating North Bay Aqueduct intake.*

   The watershed around the North Bay Aqueduct intake is so high in organic carbon during the winter flow months that the intake must be closed for about three months each year and water must be supplied from other sources.

   Assessment of Progress—Completed. There have been two projects ($0.6 million) contributing to this ROD action. The feasibility study was completed in 2004. A project to implement BMPs was completed in mid-2005. A treatment technology demonstration project (also counted toward the fourth ROD action, above) dealt specifically with organic carbon in the North Bay Aqueduct.

7. ***Study recirculation of export water to reduce salinity and improve dissolved oxygen in the San Joaquin River.***

   - *By the end of 2000: Implement feasibility study of recirculating water exported from the Delta through state and federal water projects.*

- *By the end of 2002: Provide a recommendation to the CALFED governing body on recirculation to meet CALFED objectives, including analysis of impacts and benefits and recommendations on infrastructure.*

Assessment of Progress—Behind schedule. A pilot study was completed in fall 2004 by the USBR and DWR. The feasibility study requires Congressional authorization, which was not received until October 2004, and federal funding, which is expected in October 2005. The study is expected to take two to three years, so recommendations likely will not be developed until 2008 or 2009.

8. ***Establish a Bay Area Blending/Exchange project (complementary action).***

- *By July 2002: Complete feasibility studies.*
- *By the end of 2003: Complete environmental review, documentation, and preliminary design.*
- *By mid-2004: Finalize agreements with project participants.*
- *By the end of 2004: Obtain authorizations and funding.*
- *By the end of 2005: Begin construction.*

This ROD action involves Bay Area water districts working together to exchange water resources, through infrastructure improvements, in a manner that improves quality and supply reliability.

Assessment of Progress—Partly completed, mostly no longer applicable. The DWQP funded one project ($1.3 million) for a feasibility study, which was completed in late 2004. The local districts are currently working on their own plans, and do not want CALFED oversight, thus the latter four actions for this ROD action are no longer applicable, because the DWQP has no influence over this activity.

9. ***Facilitate water quality exchanges and similar programs (complementary action).***

- *By December 2000: Initiate evaluations of infrastructure improvements.*
- *By the end of 2001: Complete feasibility studies and implement demonstration projects.*
- *By the end of 2004: Complete environmental review and begin implementation of a long-term program, including infrastructure.*

The only exchange program currently active is between the Friant Water Users Authority, serving the eastern San Joaquin Valley, and the Metropolitan Water District in Los Angeles. Water in Friant's service area does not contain enough salt for irrigation purposes, and the expectation is that Friant would receive saltier Delta water intended for Los Angeles, while the higher-quality Friant water would be exported to Los Angeles. Infrastructure improvements would be necessary to facilitate the exchanges.

Assessment of Progress—Behind schedule. There has been one project ($20 million), funded in 2000-01. To date, no water has been exchanged. The work has focused on feasibility studies for infrastructure improvements, and pilot and demonstration projects are being conducted. Although funded as one project, the work actually consists of many individual projects.

10. ***Develop and implement within two years a plan to meet all existing water quality standards and objectives for which the state and federal water projects have responsibility (complementary action).***

This ROD action refers to a 1999 decision by the SWRCB,[95] which required compliance with more stringent water quality objectives for the State Water Project, operated by the DWR, and the Central Valley Project, operated by the USBR. Most of the objectives were effective immediately, but a new salinity objective was not effective until April 2005. The plan, which was to be completed by 2002, would have provided information on how the DWR and USBR would meet the new objectives.

Assessment of Progress—Behind schedule. This ROD action is unclear regarding which entity is to prepare a plan, i.e., whether there was to be one plan from each project, or a single consolidated plan from the two projects. In any case, no plan has been submitted. The USBR states that it is developing a plan which it will begin to implement in late 2005, and that the DWR is developing a plan which will be submitted to the Legislature in early 2006.

For 2005, which was a wet year, the DWR and USBR are meeting all the water quality objectives; however, in drier years, scientific modeling indicates that the DWR and USBR will have difficulty in meeting the new salinity objective. The USBR has not met flow objectives for the San Joaquin River on several occasions in the past, and will likely have difficulty meeting them in the future without operational or other changes, such as dedicating additional supplies or

95 The SWRCB adopted Decision 1641 on December 29, 1999.

recirculating water (see ROD action #7, above). Meeting the salinity objective in future years will require the construction of operable barriers (also known as gates) or equivalent measures. The SWRCB has drafted a cease and desist order that, if adopted, would require the construction of permanent gates to be completed by January 2009. The construction of gates is included in the Conveyance Program (see Appendix B, Conveyance Program, ROD action #2B); it is expected that the environmental impact statement/environmental impact report will be completed in April 2006 and that the gates will be completed in 2009.

11. ***Non-ROD Projects.*** *The DWQP identified six projects ($6.9 million) that do not relate to a specific ROD action but support the program's goals. Three projects are for regional ELPH plans (in the Sacramento, Delta, and Southern California areas), which relate to the DWQP's targets. Two projects were funded by the Ecosystem Restoration Program but relate to source water quality. Two are implementation projects in Southern California.*

C. Goals and Targets

As noted in Section VIII, Drinking Water Quality Program, the goal of the DWQP is to provide safe, reliable, and affordable drinking water to the 23 million Californians who rely on the Delta for all or part of their drinking water. The target was to achieve either: (a) average concentrations at specified Delta intake locations of 50 micrograms per liter of bromide and 3 milligrams per liter of total organic carbons, or (b) ELPH protection.

Drinking water in California meets current safety standards and is generally reliable and affordable. According to the Authority, the DWQP is intended to ensure that the goal is achieved over the 30-year life of CALFED, because future population growth will increase demands on the water supply. The DWQP is working to achieve the goal over the long term by pursuing ELPH protection, through the development of six regional ELPH plans. Currently, three ELPH plans are in the pilot stage; and a fourth has been more fully developed but needs additional work. Standards for ELPH plans are under development. It is too early to know how well the ELPH plans will function in the long term, but the program appears to be working thoughtfully toward the long-term goal.

Appendix G. Levee System Integrity Program

I. Funding[96] and Projects

A. Total Funding

According to program documents and discussions with program staff, the Levee System Integrity Program (LSIP) received $107 million for Years 1 through 5, or 34 percent of the $314 million original cost estimated for this period. Of the $314 million, $154 million was related to the Delta levees and $160 million was related to the Suisun Marsh levees. Because the status of the Suisun Marsh levees within the LSIP/CALFED program is unclear at this time, our review excludes these costs. Accordingly, our review indicates that the LSIP received 69 percent of the original $154 million estimated for the Delta levees.

The original estimate assumed that costs would be shared by the state government, federal government, users, and local government. The original estimate assumed that 33 percent of the costs would be provided by the state government, but state funds represent 83 percent of the amount received. The original estimate also assumed that 54 percent of the costs would be provided by the federal government, but federal funds represent less than 1 percent of the amount received. It should be noted that the federal Water Supply, Reliability, and Environmental Improvement Act, enacted by Congress in 2004, authorized $90 million for the LSIP. These funds, however, have not yet been appropriated. Finally, the original estimate also assumed that 13 percent of the costs would be provided by users and local government, but these sources now represent 17 percent of the amount received. According to

96 As discussed in Section II, Background, the funding amounts in this report are taken from program records that have not been verified or validated.

program staff, however, the users and local government amount tracked by the state does not include funds provided by these entities above their share required under existing law. For example, if the user and local government matching percentage is 25 percent of costs, but the user or local government contributes 35 percent, the state tracks only the 25 percent as user and local government funding. As a result, the amount of funding contributed to the LSIP by users and local government may be understated.

B. Project Funding

Review of the LSIP project funding was challenging, primarily because LSIP funding is tracked differently by the Authority and the Department of Water Resources (DWR), as shown in Table G-1 below.

Table G-1. Levee Program Funding Categories

Authority's LSIP "Element Tasks"	Delta Levees Program Categories
Oversight and Coordination	State Operations, which includes: ■ Program Administration ■ CALFED Coordination ■ Subsidence Study ■ Beneficial Reuse ■ Emergency Response ■ Water Quality Studies ■ Delta Risk Management Strategy
Program Management	
Subventions	Local Assistance, which includes: ■ Subventions ■ Special Projects, which includes: • Special Projects • Levee Subsidence • Emergency Response • Risk Assessment • Beneficial Reuse
Special Projects	
Levee Subsidence	
Emergency Response	
Risk Assessment	
Beneficial Reuse	

Although it may appear that the categories listed in Table G-1 could be aligned for comparison and reconciliation purposes, they cannot, as the DWR tracks funding

only at the higher levels (i.e., State Operations, Local Assistance—Subventions, and Local Assistance—Special Projects).

The *Multi-Year Program Plan (Years 6-9)* acknowledges the confusion between the characterization of activities used in the ROD and the Delta Levees Program, and in an attempt to simplify matters, adopts a new methodology using the following categories: levee maintenance; levee improvement; and other (which includes oversight and coordination, program management, subsidence control, emergency response, risk assessment, beneficial reuse, habitat mitigation, and net habitat enhancement).

Our review indicates that the differing and changing system used to track and report LSIP funding used by the Authority and the DWR is a function of the fact that the Delta Levees Program was in existence prior to CALFED and the ROD. Further, the agencies have acknowledged and attempted to address these differences, but ultimately, an analysis of the project funding would require a detailed reconciliation not possible during the timeframe of our review. As such, the following is a general discussion of the funding mechanisms used to carry out the LSIP elements.

Because most Delta levees are privately owned, maintenance and improvement activities are the responsibility of over 60 local reclamation districts, which assess farmers and landowners for such costs. Maintenance and improvement funding (included within the base level protection and special improvement projects elements) is cost shared between the local reclamation districts and the state with funds provided by the state coming through grants. These grants require varying levels of match to be provided by the reclamation districts. Funding to date related to subsidence has been for contracts to conduct projects and studies to develop a greater understanding of subsidence and how to prevent and even reverse it, along with studies of water quality effects of implementing large scale subsidence reversal projects in the Delta. Funding to date related to emergency management and response has been for improving the emergency response coordination among local agencies, counties, state agencies, and the US Army Corps of Engineers (USACE) as well as increasing on-hand emergency supplies, and developing Standardized Emergency Management System (SEMS)-compatible response plans. Funding to date related to risk assessment has been for contracts to develop the Delta Risk Management Strategy (DRMS), formerly known as the Levee Risk Assessment.

II. Performance Measures[97]

The status of performance measures in the LSIP is unclear. Program staff indicate that carefully designed success criteria are used to measure, monitor, and adaptively manage the performance of mitigation and enhancement projects; however, program staff also indicate that the cost of tracking measures is high and that they have elected to provide funding that would otherwise be used for tracking to local assistance to enhance maintenance and improvement of levees. The *Multi-Year Program Plan (Years 5-8)* indicated that the LSIP and Science Program had been continuously working to design performance measures, including tracking Level 1 indicators (administrative measures) of expenditures and the number of levee miles improved, and making progress on Level 2 indicators (quantifiable accomplishments directly related to program actions) related to more complex measures of the risk of levee failure to local land owners, the Delta ecosystem, and Delta water exports.[98] In the *Multi-Year Program Plan (Years 6-9)*, however, information related to monitoring/performance measures indicates only that monitoring has been conducted outside the LSIP, and that the results of others' efforts are being used to adjust current designs.[99] It is not clear why the reporting on performance measures for the LSIP changed so dramatically.

An early effort of the Science Program was to develop prototype performance measures for several CALFED program elements, including the LSIP, using a consistent approach.[100] The indicators for the LSIP were number of acres flooded, flood prevention costs, and post-emergency recovery expenditures. Although the *2004 Annual Report* issued in December 2004 used these indicators to report performance, the *Multi-Year Program Plan (Years 6-9)* issued in July 2005 did not. As such, our review indicates that the LSIP is not pursuing this effort.

III. Accomplishments

The documents generally used for communicating the performance of the LSIP are CALFED's annual reports and multi-year program plans. Our review is based primarily on the *2004 Annual Report* and the *Multi-Year Program Plan (Years 6-9)*, as well as discussions with program staff. According to program staff, however, the focus of both of these documents historically has been to highlight program

97 See Section II, Background, for an overview of CALFED performance measures.
98 CALFED Bay-Delta Program, *Levee System Integrity Program Multi-Year Program Plan (Years 5-8),* July 2004, pp. 11-12.
99 CALFED Bay-Delta Program, *Levee System Integrity Program Multi-Year Program Plan (Years 6-9),* July 2005, p. 17.
100 http://science.calwater.ca.gov/sci_tools/wide_perf_measures.shtml, visited August 1, 2005.

accomplishments and/or activities rather than to measure the program's performance against ROD actions.

A. ROD Actions

This section assesses the LSIP's progress on meeting its ROD actions, including actions that are related specifically to the LSIP elements discussed above and others that are not.

1. ***During Stage 1, about 200 additional miles of levee will be brought up to the Public Law (PL) 84-99 standard (Base Level Protection).***

   The Delta levees system consists of 1,100 miles of levees—385 miles of project levees and 715 miles of nonproject levees. "Project levees" are levees that were improved or adopted as part of federal flood control projects, and "nonproject levees" are all other levees. At the time of the ROD, it was assumed that most of the project levees met or exceeded the PL 84-99 standard, and that 520 miles of nonproject levees needed to be rehabilitated and brought up the PL 84-99 standard.[101]

   Although the ROD identified a specific, measurable Stage 1 action related to this element, the *Multi-Year Program Plan (Years 6-9)* indicates that the current plan related to this commitment is to minimize risk of levee failure Delta-wide through levee maintenance, improved flood protection, and levee stability.

   Assessment of Progress—Partly completed, may no longer be applicable. Program documents indicate that the LSIP has provided funding to bring 43 miles of levees up to the PL 84-99 standard and that the action has not been completed due to inadequate funding. Program staff indicated in discussions, however, that funding has been provided to "improve stability on 43 miles of levees with some sections achieving the PL 84-99 standard." As such, it is unclear how many miles of levees have actually been brought up the PL 84-99 standard. Further, discussions with program staff indicate that this action may no longer be applicable because it has been determined that bringing all Delta levees up to the PL 84-99 standard may not be the most appropriate target. In other words, some Delta levees should be at a "higher" standard, and some should be at a "lower" standard depending on where the levees are located and/or what purpose they serve. Our review indicates that it is unclear if this

101 CALFED Bay-Delta Program, *Levee System Integrity Program Plan, Final Programmatic EIS/EIR Technical Appendix,* July 2000, pp. 2-1 through 2-2.

program change is a result of funding constraints or new program information. Program staff believe that the DRMS will provide important information and insights that would be used to establish new standards for the various levees and help determine funding priorities. Our review indicates that neither the *Multi-Year Program Plan (Years 6-9)* nor *2004 Annual Report* clearly communicates this significant change of direction to stakeholders.

2. ***Initiate actions to refine the Delta Emergency Management Plan by 2000 (Emergency Management and Response Plan).***

   The Governor's Office of Emergency Services coordinates state agency responses to emergencies using a standardized framework known as SEMS. Numerous other state, federal, and local agencies also have emergency response responsibilities that are activated for failures of Delta levees. Among these are the local reclamation districts that initiate emergency flood fight, county Sheriffs who coordinate evacuations, county and state offices of emergency services that support flood fight and public health and safety efforts, and the DWR that may assume flood fight duties.

   Assessment of Progress—Behind schedule. Program staff indicate that a formal Delta Emergency Management Plan does not exist, nor was it refined by 2000, but rather a draft document entitled Delta Area Command, Joint Operations Manual was published in May 2001. Program staff believed that this draft document satisfied this ROD action; thus, the *2004 Annual Report* and *Multi-Year Program Plan (Years 6-9)* indicate that this ROD action was completed. Our review indicates that this draft document did not satisfy the intent of the ROD for CALFED to enhance the ability of state, federal, and local agencies to rapidly respond to levee emergencies; thus, our review indicates that this ROD action is behind schedule. The DWR, however, has ongoing efforts to enhance the response and management of Delta levee failures, guided primarily by lessons learned from the Jones Tract levee failure in June 2004.

3. ***Develop a DRMS that identifies risks to Delta levees, evaluates consequences, and recommends actions by 2001 (Risk Assessment).***

   The *Multi-Year Program Plan (Years 6-9)* indicates that the objective of DRMS is to reevaluate the goals contained in the ROD to determine if they remain valid.[102] Discussions with program staff indicate that DRMS is intended to provide the

102 CALFED Bay-Delta Program, *Levee System Integrity Program Multi-Year Program Plan (Years 6-9),* July 2005, p. 4.

basis for developing state policy for sustaining the Delta, and ultimately, for determining the overall strategy and prioritization of funding for the LSIP.

Assessment of Progress—Behind schedule. The *2004 Annual Report* and *Multi-Year Program Plan (Years 6-9)* incorrectly indicate that this ROD action was completed on time. Phase 1 of the risk assessment study, which prepared the model to analyze seismic risk to the Delta levee system, has been completed. Phase 2 of the study, which will analyze the effect of multiple levee failures on through-Delta conveyance and water quality, is expected to take approximately two years (the DWR currently expects the contract to be awarded in January 2006 and a study to be completed in December 2007). Authority and DWR staff indicated, however, that they believe a comprehensive study to fully identify risks to Delta levees and develop strategies to address those risks could take up to ten years to complete; USACE estimated three to five years for such a comprehensive study.

4. ***Develop best management practices (BMPs) for the reuse of dredged materials by 2001.***

5. ***Institute a program for using bay and Delta dredge material to repair Delta levees and restore Delta habitat, targeting 2 million cubic yards of dredge material applied in Stage 1.***

Assessment of Progress—Partly behind schedule (BMPs), partly completed (ongoing program), but may no longer be applicable. It is our understanding that BMPs for the reuse of dredged materials were never developed; however, our review indicates that the DWR has ongoing efforts to beneficially reuse dredge material. Program documents indicate that 1.3 million cubic yards have been beneficially reused to date since the LSIP's inception. The *Multi-Year Program Plan (Years 6-9)* also indicates that the continued reuse of dredge material to increase levee stability and for habitat enhancement has become more restrictive due to increasingly rigorous water quality standards, and that beneficial reuse of dredged material may become cost prohibitive as the Central Valley Regional Water Quality Control Board (CVRWQCB) revises its regulation of reuse of dredged material. If reuse becomes too costly, then these ROD actions would no longer be applicable. That said, our review indicates that this issue, which involves the DWR, the State Water Resources Control Board/CVRWQCB, the USACE, and potentially other agencies, is a good example of an opportunity for CALFED and the Authority to add value by providing a forum for coordination

and development of a strategy that considers the interrelated objectives of CALFED (e.g., levee system integrity and water quality).

6. ***The CALFED agencies intend that final development and implementation of actions under the Comprehensive Study of the Sacramento and San Joaquin River watersheds to improve flood control efforts will be coordinated and consistent with the CALFED program (complementary action).***

   This study is a complementary action that also appears in the Conveyance and Ecosystem Restoration Programs. The study was essentially a large feasibility study addressing flood control, land development, and ecosystem restoration. It received final approval by early 2004. The expected outcome of the study is the identification of individual projects to undergo more specific feasibility study, and then design and construction. All work is to be funded with a 50-50 match of state and federal funds.

   Assessment of Progress—Not addressed. The Comprehensive Study considered flood control actions on channels leading to the Delta and projected only minor effects into the Delta. Program staff indicate that this study and any actions that may be completed in response to its findings are outside the scope of the LSIP.

B. Other Accomplishments

The LSIP identified the following accomplishments that are related to ROD elements or the Program Plan, but are not related specifically to a ROD action:

1. **Subsidence Control Plan.** This activity relates to the ROD element of developing BMPs to control and reverse subsidence and work with local districts and landowners to implement cost-effective measures.

   Program documents indicate that the LSIP has funded grants for several years to study subsidence and reversal techniques. Although our review did not verify or validate this information, and no ROD action was related specifically to subsidence control, this activity appears to be consistent with the LSIP's long-term goal and ROD elements.

2. **Maintenance.** Maintenance is discussed under Base Level Protection in the Program Plan, but not explicitly in the ROD elements.

Program documents indicate that the LSIP has worked cooperatively with levee-maintaining agencies to maintain more than 600 miles of eligible project and nonproject levees. Although our review did not verify or validate this amount, and no ROD action was related explicitly to levee maintenance, this activity appears to be consistent with the LSIP's long-term goal.

3. **Net Habitat Enhancement.** This activity relates to statements in the ROD proposing substantial efforts during Stage 1 to rebuild certain levees in ways that encourage habitat for aquatic and terrestrial species, and to the ROD action of using bay and Delta dredge material to repair Delta levees and restore Delta habitats.

   The existing law for the Delta Levees Program requires no net loss of habitat and net long-term habitat improvement, which is defined as enhancement of riparian, fisheries, and wildlife habitat.

   Program documents indicate that the LSIP has created 33 acres of riparian wetland habitat and 16,000 linear feet of shaded riverine aquatic habitat. It should be noted that our review did not verify or validate these amounts, and no ROD action was related specifically to habitat enhancement. It is unclear if these accomplishments are consistent with the LSIP's long-term goal, although they appear to be consistent with the LSIP's objectives.

4. **Public Outreach.** Program documents indicate that the LSIP conducts regular public outreach through monthly meetings of the Delta Levees and Habitat Advisory Committee and the Bay-Delta Public Advisory Committee's Delta Levees and Habitat Subcommittee.

   It does not appear that this activity furthers the LSIP's long-term goal.

C. Goals and Elements

As noted in Section IX, Levee System Integrity Program, the goal of the LSIP is to provide long-term protection for multiple Delta resources by maintaining and improving the integrity of the extensive Delta levees system. The five elements identified in the ROD and Program Plan were base level protection, special improvement projects, subsidence control plan, emergency management and response plan, and risk assessment.

The LSIP is performing various activities, some of which were identified specifically as ROD actions and others that are related to the ROD elements. Our review indicates that the LSIP's activities generally appear to be consistent with its goal to maintain and improve Delta levees; however, given the technical complexity and scientific uncertainty related to Delta levees, it is unclear whether the LSIP is making meaningful progress toward its long-term goal. Factors contributing to this uncertainty include ongoing land subsidence (i.e., sinking) in the Delta, the risk of a major, catastrophic natural disaster (e.g., earthquake), and the uncertainty regarding the Delta levees effect on water quality. There is also a risk that the limited funding available is not being spent on the highest priority activities.

Appendix H. Ecosystem Restoration Program

I. Funding[103] and Projects

A. Total Funding

The *2004 Annual Report* indicated Ecosystem Restoration Program (ERP) funding of $783 million during Years 1 through 5, which was nearly 100 percent of the $785 million original estimated cost for this period. The Conservation Agreement (see Section II, Background) established a commitment of at least $150 million annually for the ERP. This target appears to have been met cumulatively, though not for each individual year. The original estimate assumed that 39 percent of the costs would be provided by the state, but state funds represent 69 percent of the amount received. The original estimate assumed that 39 percent of the costs would be provided by the federal government, but federal funds represent only 5 percent of the amount received.

B. Project Funding

Since the beginning of the ecosystem restoration projects in the mid-1990s, 460 projects have been funded, and $541.4 million grant dollars have been awarded, as shown in Table H-1. Grant recipients reported $284 million of matching funds (unverified by ERP staff), which would result in a combined total of $825 million since the mid-1990s.

103 As discussed in Section II, Background, the funding amounts in this report are taken from program records that have not been verified or validated.

Most of the grants were for multiple years (generally three years), and to date 261 projects (57 percent) have been completed, most from the pre-ROD years prior to 2000-01. Prior to the ROD, 254 grants and $245.1 million were awarded; since the ROD, 206 grants and $296.3 million (including $283.7 million in state funds) have been awarded. The *2004 Annual Report* indicates $541 million in state funding for the ERP since the ROD, or $254 million more than the state funds reported for grant awards. According to the Authority, this difference is comprised mainly of the following: $160 million not yet awarded to projects (due to contract freezes and uncertainty regarding the cost of Battle Creek[104]); $46 million for funded projects tracked outside the ERP database (science-related or directed projects); and $36 million for grant administration and Authority staff.

The information on projects is from the ERP database, which has had serious problems for years. ERP staff have only recently resolved the problems sufficiently to use the database, and an extensive effort was made by the ERP for purposes of this report to input the data and verify the accuracy. The Department of Finance has not validated or verified the information from either the ERP database or the Authority's fiscal systems for this report.

104 Approximately $67 million has been set aside for Battle Creek and is expected to be awarded during 2005-06. The EIS/EIR for Battle Creek was completed in July 2005 and is available on the Authority's website.

Table H-1. Project Funding

Program Year Awarded	Grant Dollars Awarded (millions)		Grants Funded	
	Total	Fund Source Detail	Number	Completed
Prior to 2000-01 (Pre-ROD)	$245.1	$120.2 - Federal 100.2 - Proposition 204 22.1 - CUWA* 2.6 - CVPIA*	254	211
2000-01	113.4	$107.4 - Proposition 204 5.5 - CVPIA 0.5 - Proposition 13	106	45
2001-02	63.6	$60.2 - Proposition 204 1.9 - Proposition 13 1.5 - CVPIA	52	5
2002-03	78.5	$78.5 Proposition 204	21	0
2003-04	31.9	$11.8 - Proposition 204 11.2 - Proposition 50 6.9 - Proposition 13 1.5 - CVPIA 0.3 - CUWA 0.2 - Federal Funds	22	0
2004-05	8.9	$8.0 - Proposition 204 0.5 - Proposition 50 0.4 - Proposition 13	5	0
All Years	**$541.4**	**-**	**460**	**261**

* California Urban Water Agencies (CUWA) and the Central Valley Project Improvement Act (CVPIA) are both water users.

Notes:

1. Excludes grants that were awarded but later discontinued or canceled.
2. Excludes costs for technical consultation ($11 million) and administration associated with grant awards.
3. Excludes matching funds.
4. Program Year runs from August 28 through August 27 of the following calendar year.

The ERP projects were selected based on criteria in the applicable proposal solicitation package (PSP). The PSP used for 2000-01 solicited projects based on the ERP program plan, the Multi-Species Conservation Strategy, and the 12 scientific uncertainties. The PSP used for 2001-02 was based on 168 actions from the 177 actions in the *Draft Stage 1 Implementation Plan* (DS1 Implementation Plan).

Proposals that were not funded in 2001-02 were funded in 2002-03, 2003-04, and 2004-05. (The most recent PSP, released in 2004-05, solicits projects to monitor and evaluate previously funded projects, and will be used to fund grants in 2005-06.)

Proposals received rigorous reviews from several different panels for compliance with administrative criteria; feasibility, local collaboration, and regional value; and scientific soundness (each proposal was reviewed by several independent scientists). The general principal employed by the ERP was to fund the highest ranking projects based on the various reviews. If proposals were not received for high priority needs, the ERP set aside funds for directed actions (e.g., for monitoring of endangered fish populations, or activities that addressed milestones). Most of the funds, however, have been allocated on a competitive basis (since the ROD, 70 percent of projects and 60 percent of the dollars were awarded competitively). For the remainder of Stage 1, the ERP intends to focus on projects that will ensure that the milestones are achieved, subject to scientific vetting and revision as discussed later in this section.

C. Project Information

Table H-2 describes the number of projects and dollars awarded by primary project topic. There are 18 categories, compared to 14 in the *2004 Annual Report*, because the topics have been revised. Projects often address more than one topic. (Note: The ERP's watershed projects were mostly prior to the creation of CALFED's Watershed Management program element.)

Table H-2. Projects by Topic

Project Topic	Number of Projects	Dollars in Millions
Ecosystem Water and Sediment Quality	59	$71.0
Fish Screens	59	87.1
Local Watershed Stewardship	54	18.3
Shallow Water and Marsh Habitat	41	63.6
Environmental Education	33	7.0
At-Risk Species Assessment	32	31.0
Hydrodynamics, Sediment Transport, and Flow Regimes	30	36.0
Lowland Floodplains and Bypasses	29	49.2
Nonnative Invasive Species	28	11.3
Riparian Habitat	27	37.7
River Channel Restoration	16	35.0
Fish Passage	15	45.1
Upland Habitat and Wildlife Friendly Agriculture	12	35.6
Harvestable Species Assessment	11	2.3
Environmental Water Management	6	7.1
Mine Remediation	4	1.9
Estuary Foodweb Productivity	3	1.8
Freshwater-Seawater Interface in Delta	1	0.5
Total	**460**	**$541.4**

Table H-3, which displays projects by type, indicates that the largest number of projects was for full-scale implementation, followed by research and planning. The largest dollar amounts awarded were for full-scale implementation projects, followed by land acquisition and research.

Table H-3. Projects by Type

Type of Project	Grants		Dollars in Millions	
	Number	Percent	Amount	Percent
Full-Scale Implementation	149	32%	$229.2	42%
Research	121	26%	102.7	19%
Planning	117	25%	53.0	10%
Land Acquisition	31	7%	116.8	22%
Monitoring	21	5%	19.9	4%
Pilot/Demonstration	21	5%	19.8	4%
Total	**460**	**100%**	**$541.4**	**100%**

II. Performance Measures[105]

Several types of performance reporting are available in the *2004 Annual Report*. Input measures specify the number and dollar value of projects by type and region. Output measures indicate acres of habitat restored and fish screens installed, in comparison to milestone targets. Limited outcome measures are reported in terms of early indications of species recovery. All ERP projects must measure the project's outcome and continue monitoring through the end of the grant period (grants are usually for three years); however, the ERP has struggled with translating these measurements into more general program results. The ERP has also struggled with the development of broad outcome measures that indicate ecosystem response in a comprehensive manner.

III. Accomplishments and Performance

The accomplishments of the ERP are considered first in terms of the funding commitment in the Conservation Agreement, then the milestones and ROD actions, and finally in terms of program goals. Although the ERP does not consider the ROD to be its program for Stage 1, stakeholders are interested in the degree to which the ERP has implemented the ROD; therefore, this report treats the ROD for the ERP in

105 See Section II, Background, for an overview of CALFED performance measures.

the same manner as the ROD for other program elements. This assessment is more quantitative than qualitative, i.e., an accounting of activities rather than a measure of program results.

Although the DS1 Implementation Plan is deemed the real program for Stage 1, it is not feasible within the limits of this report to assess accomplishment of all 177 actions. On the other hand, because the 2001-02 PSP solicited grants for 168 of those actions, one measure of the ERP's accomplishments with respect to the DS1 Implementation Plan is the fact that only 100 grants (out of the 168 actions/projects solicited) were funded under that PSP. That is, only 59 percent of the planned projects were funded.

A. Funding Commitment

The Conservation Agreement required that the ERP receive funding of at least $150 million annually. Based on the fiscal information in the *2004 Annual Report* and *Multi-Year Program Plan (Years 5-8)*, this commitment appears to have been met on a cumulative basis, though not met for each individual year. As noted throughout this report, the fiscal information in the *2004 Annual Report* was not validated or verified for this report.

B. Milestones Assessment

In September 2004, the Department of Fish and Game (DFG), the Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) completed a mid-Stage 1 assessment of the milestones,[106] and concluded that nearly 80 percent of the milestones were on or ahead of schedule. This level of progress was of major importance to the program, because it resulted in extension of regulatory commitments in the Conservation Agreement until December 31, 2007.[107] That is, the DFG, FWS, and NMFS agreed that state and federal Delta water exports could continue without requiring reductions to protect key fish species.

The following information explains the process and results of the Milestones Assessment, some of which our review indicates are questionable. Understanding the Milestones Assessment is also useful for understanding certain ERP achievements toward the ROD and the program's goals.

Description of Process and Results. The Milestones Assessment, which involved roughly a dozen people over an 8-month period, was based on a review of 450 contracts (including pre-ROD, ERP, Watershed Management, and federal projects), supplemented by program knowledge of other efforts, and followed by input from

106 U.S. Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Game, *Reinitiation of Consultation: Assessing Progress Toward Milestones and the Efficacy of the Environmental Water Account,* July 9, 2004.

107 See Section II, Background, for further explanation of the Conservation Agreement.

stakeholders. The linkage of contracts to individual milestones was not made prior to the assessment effort. This report does not attempt to validate each assessment, but rather to provide a sense of how the assessments were determined, based on a detailed review of about 20 milestones and discussions with ERP staff. Table H-4 displays the specific results of the Milestones Assessment, which are discussed in detail below.

Table H-4. Milestones by Assessment

Assessment	Number of Milestones	Percent
Ahead of Schedule	4	3%
On Schedule	91	76%
Behind Schedule	15	13%
Under Evaluation	9	8%
Total	**119**	**100%**

- **Ahead of Schedule.** Four of the 119 milestones were "ahead of schedule." For example, Milestone 6 calls for enhancement and cooperative management of 6,000 to 11,250 acres for wildlife friendly agriculture in the Delta. Projects include the $38 million ($19 million state funds) purchase and improvement of Staten Island, which protects 9,200 agricultural acres used by waterfowl and sandhill cranes, plus several other efforts in the planning stages, one of which involves some portion of the 59,000-acre Yolo Bypass.

- **On Schedule.** There were 91 milestones deemed "on schedule," however, it appears that the term "on schedule" has been loosely applied—i.e., in some cases significant progress has been made, and in some cases the term is optimistic. In addition, in some cases the ERP had no achievements toward the milestone, but an external entity (e.g., local utility district, Ducks Unlimited) had taken action on its own, so the milestone was deemed "on schedule." Milestone assessment is not straightforward, but is a complex process involving varying degrees of subjectivity, depending on the milestone. Most milestones have multiple parts and involve multiple projects, sometimes dozens of separate projects. (Many projects address more than one milestone.) Achieving most milestones will take several years, and it is a question of judgment as to whether a set of actions equates to being "on schedule." Also, terms can be interpreted in different ways by different people. For example, a milestone may call for restoring a certain number of acres of habitat. Achieving the milestone involves acquiring the land, developing a plan, getting the plan approved, and making the improvements. Achievement also could be defined to mean that the plant

species have become established and the animals have returned, which is a longer-term process.

An example of an optimistic assessment of "on schedule" is Milestone 8. This milestone called for restoration of a minimum of 500, 250, 1,000, and 2,500 acres of nontidal emergent wetland in the North, East, South, and Central/West Delta Ecological Management Units (EMUs), respectively; and the establishment of at least one population of bristly sedge. There were 14 related projects with the result that in the North EMU, land has been acquired to restore 142 acres, and in the Central/West EMU, land has been acquired to restore up to 244 acres. The other contracts have changed focus or been delayed, or are uncertain regarding the types of habitats that will be restored. No populations of bristly sedge have been established. It appears very optimistic to deem that this milestone will be fully achieved by the end of Stage 1.

An example of a solidly "on schedule" assessment is Milestone 58. This milestone, which addresses the gravel beds needed for salmon spawning, calls for a study of rock and sediment flow, plus the development and implementation of a program to reduce erosion and maintain gravel, on at least one tributary in seven ecological management zones (EMZs) of the Sacramento River Basin. This is an ambitious milestone with 21 parts (3 components [i.e., study, program development, and program implementation] times 7 EMZs). There have been 26 contracts ($41 million state funds and $67 million total including matching funds), including contracts initiated prior to the ROD as well as those funded by non-ERP programs (i.e., the Watershed Management program element and a federal program). The study and program actions called for in the milestone have been addressed or are well underway in all of the EMZs; only one EMZ had developed but not implemented the erosion/gravel program as of August 2004.

- **Behind Schedule.** Some of the 15 milestones that were "behind schedule" reflect changes that have occurred since the milestones were developed. For example, Milestone 25 involves installation of a fish screen at a power plant, but the power plant has been in bankruptcy proceedings and will not install a fish screen for at least four years. Milestone 24 involves 50 small fish screens; however, doubts have been raised regarding the efficacy and cost-effectiveness of small screens, so this milestone has been a low priority.
- **Under Evaluation.** These nine milestones are for water quality (mostly trace metals and contaminants of unknown toxicity). The milestones are under evaluation because progress is difficult to assess—water quality is the

responsibility of numerous governmental jurisdictions and entities whose many actions have not been fully determined; and the issues are complex and evolving, with much scientific uncertainty regarding what needs to be done. In the assessment report initially submitted to the regulatory agencies, 24 water quality milestones were deemed "under evaluation," but 15 related to agricultural pollution sources were later changed to "on schedule" in a supplemental document, because it was learned that the State Water Resources Control Board (SWRCB) had programs in place to address the issues.

Comments and Concerns. Although 80 percent of the milestones were deemed to be on or ahead of schedule, some skepticism about the Milestones Assessment is warranted because the assessment was conducted by the same agencies that are responsible for implementing the program (as required by law)[108], and because anything less than "satisfactory progress" could have resulted in serious consequences, i.e., reconsideration of the issue of reducing water exports from the Delta in order to protect fish. In actuality, achievement was uneven—some of the "on schedule" determinations were overly optimistic because they were based on planning rather than implementation, and in some cases progress was due to independent external entities. It appears doubtful that the ERP will achieve completion of the milestones by the end of Stage 1.

Although the implementing agencies concurred in the Milestones Assessment, they were concerned about the level of progress, and whether or not achievement of milestones was resulting in real benefits for threatened species. The NMFS also wanted to see better monitoring of species recovery and better understanding of the process and habitat changes needed to benefit listed species.[109] The FWS urged the ERP to focus on program weaknesses and gaps identified through the Milestones Assessment.[110] Nonetheless, both entities acknowledge that a great deal of work had been done.

The Milestones Assessment has alerted program managers to areas that need additional attention, and the results of the assessment were used in developing the draft *Multi-Year Program Plan (Years 6-9)*.

108 Under the Federal Endangered Species Act, any action of the federal government affecting listed species requires consultation with the NMFS or the FWS as appropriate. These actions include activities undertaken by the NMFS and FWS in implementing the ERP. Similar provisions in state law govern the DFG.

109 Letter from Rodney McInnis, Regional Administrator, NMFS, to Kirk Rodgers, Regional Director, US Bureau of Reclamation, September 24, 2004.

110 Letter from Field Supervisor, Sacramento Fish and Wildlife Office, FWS, to Regional Director, Bureau of Reclamation Mid-Pacific Regional Office, September 23, 2004.

C. ROD Actions

1. ***Implement large-scale restoration projects on selected streams and rivers*** *including (a) Clear Creek, (b) Deer Creek, (c) Cosumnes River, (d) San Joaquin River, and (e) Tuolumne River, in cooperation with local participants.*

   Large scale restoration projects include all elements, i.e., restoration of the river channel form and flow function as well as habitat restoration and removal of fish barriers. Assessing the degree of completion is a challenging process, because there are no specific acreage targets, and restoration is constrained by the availability of land for acquisition or easement.

   Assessment of Progress—Partly on schedule, partly behind schedule.

   (a) Clear Creek, started in the 1990s (prior to CALFED), is the most advanced restoration project; three related projects still need to be done.

   (b) Deer Creek is primarily in the planning stage.

   (c) For Cosumnes River, over 9,000 acres have been acquired, 3 miles of levee are under improvement, and additional projects are still being planned; restoration is largely complete.

   (d) For San Joaquin River, nearly 4,000 acres have been acquired and restored, and 1,050 additional acres are under negotiation; restoration is roughly half-completed.

   (e) For Tuolumne River, several projects have been completed resulting in restoration of 3 miles of river and 22 acres of riparian habitat; several more projects are being implemented; additional projects are being planned to restore 1 mile of river and 451 acres of riparian habitat; altogether the restoration is roughly one-third to one-half complete.

2. ***Improve fish passage by removing or modifying the following locally owned dams:*** *(a) small diversion dams on Butte Creek; (b) eight Pacific Gas & Electric Company diversion dams on Battle Creek; (c) McCormick-Saeltzer Dam on Clear Creek; (d) Woodbridge Dam on Mokelumne River; and (e) Clough Dam on Mill Creek.*

   - *Support studies to determine if introduction of wild Chinook salmon and steelhead to the upper Yuba River watershed is biologically, environmentally,*

and socio-economically feasible over the long term and recommend other fish passage projects through the Integrated Storage Investigation (ISI).[111]

Assessment of Progress—Partly on schedule, partly behind schedule.

(a) On Butte Creek, nine projects are complete and the remaining two projects are almost complete.

(b) Battle Creek is a major undertaking to restore 42 miles of river. The federal government provided $28 million in 1999, and the funds have been spent for planning and environmental documents. The ERP has set aside funds for implementation. The final EIS/EIR was issued in July 2005, and the project is expected to commence soon and has a planned construction period of three years.

(c) The McCormick-Saeltzer Dam on Clear Creek was removed in 2002.

(d) The Woodbridge Dam project on the Mokelumne River was completed in 2002.

(e) The Clough Dam on Mill Creek was removed in 2004.

Studies addressing fish introduction on the upper Yuba River are largely complete. Other projects at eight additional waterways are being conducted, with funding from the ERP, through the Department of Water Resources (DWR) Fish Passage Improvement Project.[112]

3. ***Restore habitat in the Delta, San Pablo Bay, Suisun Bay and Suisun Marsh, and Yolo Bypass including tidal wetlands and riparian habitat. Establish 8,000 to 12,000 acres of wildlife-friendly agricultural lands, in cooperation with local participants.***

For the Bay and Delta regions, there are 26 milestones for habitat acreage or mileage to be restored or improved and 1 milestone for wildlife friendly agriculture to be enhanced and cooperatively managed.

Assessment of Progress—Partly ahead of schedule, partly behind schedule. This assessment is based on the information reported in the *2004 Annual Report* and the Milestones Assessment; additional progress may have been made since then, because several tracts of land were in the process of being acquired or in

111 The Integrated Storage Investigation was a pre-ROD term for a number of projects related to the Storage Program, which included the ERP fish passage activities.

112 http://www.watershedrestoration.water.ca.gov/fishpassage/projects/, visited August 25, 2005.

the process of restoration. Of the 27 milestone targets, 7 were met or exceeded, 9 were partly achieved, and 11 were not achieved. A combined total of 33,850 to 34,350 acres were to be restored or improved, and 14,882 acres were achieved. A combined total of 103 to 114 miles of riparian and slough habitat were to be restored; 87 were achieved. The milestone target for wildlife friendly agriculture was 6,000 to 11,250 acres (i.e., less than indicated in the ROD), and this milestone target was exceeded with 11,891 acres.

4. ***Restore habitat and hydraulic needs on Frank's Tract in the Delta to optimize improvements in ecosystem restoration, levee stability, and Delta water quality.***

   - *By 2002: Decide the scope and feasibility of the project.*
   - *By the end of Stage 1: Begin implementation.*

   Assessment of Progress—No longer applicable. Studies to date have suggested that Frank's Tract should not be restored because it has great potential to reduce salinity in the Delta, and thus would be more beneficial to the Bay-Delta system if it remains flooded and is properly managed. Frank's Tract has been shifted to the Drinking Water Quality Program, which is continuing to investigate the drinking water quality benefits.

5. ***By the end of Stage 1: Improve salmon spawning and juvenile survival in upstream tributaries, by purchasing up to 100 thousand acre-feet per year.*** *Some of these ERP flows may contribute to the Environmental Water Account (EWA).*

   This issue concerns the Environmental Water Program (EWP), which is a component of the ERP administered by the FWS since 2002. The purpose of the EWP was to purchase water rights (i.e., a one-time purchase resulting in permanent ownership) in order to augment tributary flows. In contrast, the EWA purchases water on an annual basis to be released when needed, or to compensate the State Water Project and Central Valley Project for intermittent export reductions at the pumps.

   Assessment of Progress—Behind schedule. Although the program has completed a major planning process to identify opportunities to purchase water rights, the program has not been able to find any willing sellers. The program is considering a change in structure, such as temporary ownership or leasing of water rights.

6. ***By the end of Stage 1: Complete protection and restoration of the Sacramento River meander corridor,*** *as part of the Sacramento River Conservation Area/Senate Bill (SB) 1086 program, including easement or purchase of an additional 15,000 acres, revegetation, and restoration of stream meander function.*

In 1986, SB 1086 was enacted, which called for a management plan for the Sacramento River and its tributaries that would protect, restore, and enhance both fisheries and riparian habitat. A locally based nonprofit group, the Sacramento River Conservation Area Forum (SRCAF) was formed to implement the plan. The SRCAF planning area is 222 miles of the Sacramento River and 77,155 acres of adjacent land extending south from Keswick Dam in Shasta County to the town of Verona in Sutter County.

Assessment of Progress—Behind schedule. A total of 293 acres have been restored. A total of 3,705 acres of land have been acquired, and another 311 acres are in the acquisition process, for a combined total of 4,016 acres when the latter acquisition project is completed. An additional 5,647 acres are in the planning stage, which will continue through April 2007.[113] The combined total of land in planning and acquisition projects is 9,663 acres, which is roughly two-thirds of the target, and the acquisition and/or easement plus restoration will not be completed by the end of Stage 1. It should be noted that Milestone 60, which addresses this same issue, was deemed "on schedule," a determination that appears overly optimistic. The ERP continues to partner with SRCAF in implementing this milestone.

7. ***Implement an invasive species program, including prevention, control, and eradication.***

In the last hundred years, over 200 species have been introduced into the Bay-Delta area. A significant source of new species is ballast water from ships, which is discharged after docking. Some of these species have severe detrimental effects on wildlife and result in economic losses for water conveyance systems and hydroelectric power plants. For example, mitten crabs burrow into and weaken levees and interfere with fish screens, resulting in fish kills. Zebra mussels, not yet present in California, interfere with water pumps. The New Zealand mudsnail interferes with the aquatic food web for salmon. Several state and federal agencies conduct various activities related to nonnative invasive species, including DFG, Department of Food and

113 Refer to the Sacramento River Conservation Area's website, Colusa Subreach Planning, at http://www.sacramentoriver.ca.gov/CSP_web/index4csp.html, visited August 30, 2005.

Agriculture, Department of Boating and Waterways, State Lands Commission, US Department of Agriculture, the FWS, and UC Davis.

Assessment of Progress—On schedule. Within the ERP, the Nonnative Invasive Species Program (NISP) engages in numerous activities to coordinate and build capacity within the agencies and entities involved with nonnative invasive species management. The ERP also funds control and eradication projects as well as research into prevention, control, and eradication means and strategies. There have been 28 projects funded with total funds awarded of $11.3 million.

Capacity building activities include the following: (1) conducting, coordinating, and/or attending workshops, conferences, and training sessions; (2) developing or assisting the development of strategic and implementation plans, and a rapid response plan to prevent the establishment or spread of new invasive species; (3) education and outreach to boaters and anglers as well as to aquarium and water landscape shops; and (4) developing, coordinating, and making available information about nonnative invasive species issues through online databases and other means. Field and research projects include: (1) surveys of prevalence of nonnative species; (2) research on the life cycle of nonnative invasive species; (3) research on the effects on native species; (4) localized eradication efforts; and (5) treating of ballast water in ships.

Although the NISP appears to be making significant contributions, the program's resources appear insufficient given the number of nonnative invasive species and the risks they pose. The NISP consists of three personnel—a supervisor who is not full-time, one staff who coordinates with watershed groups on nonnative invasive species issues, and one staff who develops information resources. The program also appears to have a low priority within the Authority, because the memorandum of understanding on rapid response has been under review by the Authority's legal office since June of 2004.

8. ***Assess the potential need for additional fish-contamination monitoring and consumption advisories in the Bay-Delta watershed.***

   - *If gaps are found, fund additional monitoring, testing, analysis, outreach, pollution prevention, and implementation of best management practices, as appropriate, by the end of Stage 1.*

The fish contaminant of primary concern is mercury. Mercury-contaminated water flows into the Bay-Delta system primarily from abandoned mines on

private property. Mercury contamination may be aggravated by the ERP, because wetlands—which are being restored by the ERP—turn inorganic mercury into a form that is biologically active and toxic. Preventing mercury pollution from the mines is very complex from a legal standpoint. It is not feasible to implement best management practices (a technique used for nonpoint sources of pollution) because the abandoned mines are point sources which must be remediated. Proposition 13 provided $15 million for mine remediation.

Several entities are involved with educating the public about fish contamination. Fish advisories are issued by the Office of Environmental Health Hazard Assessment (OEHHA), which tests fish for contamination. OEHHA posts health advisories on the Internet and issues a booklet containing the advisories; the advisories are also included in the California Sport Fishing Regulations booklet, which is available wherever fishing licenses are sold. (Unfortunately, according to Authority staff, fish advisories are sometimes ignored by individuals who view the advisories as information on where to fish successfully.) The Department of Health Services' Environmental Health Information Branch works with public health clinics to educate the public, especially pregnant women, about fish contamination and consumption.

Assessment of Progress—On schedule. CALFED has funded numerous mercury-related projects, including 4 grants dealing with mercury in fish ($9 million total awarded). These projects include evaluation of existing information, assessment of human health risks, outreach and education, monitoring, and stakeholder collaboration. The recent projects are in response to determinations of additional needed monitoring and outreach, and are also serving to identify new outreach needs.

The prevention of mercury pollution through mine remediation has not been significant—landowner interest in grant funding has been low, and only four grants ($1.9 million) have been awarded.

9. ***Assist existing agency programs to address water quality and contaminant issues as follows:*** *reduce turbidity and sedimentation; reduce the impairment caused by low dissolved oxygen conditions; reduce the impacts of pesticides including organochlorine pesticides; reduce the impacts of trace metals, mercury, and selenium; reduce salt sources to protect water supplies; and increase understanding of toxicity of unknown origin.*

These 8 water contamination issues are addressed by ERP; however, the Drinking Water Quality Program (DWQP) and the Watershed Management program element also contribute to this ROD action. The DWQP addresses turbidity and sedimentation, selenium, salt, and dissolved oxygen. Watershed Management addresses sedimentation and multiple constituents.

Assessment of Progress—Mostly on schedule, partly unknown. Based on the latest information available from program staff, CALFED program elements have funded 232 water quality projects, including 45 that addressed drinking water contaminants only and 187 that addressed the environmental water contaminants pursuant to this ROD action. Of the 187 projects, 72 percent addressed multiple contaminants, 12 percent addressed mercury, and the remaining 15 percent addressed pesticides, selenium, or oxygen-depleting substances.

In terms of Stage 1 milestones, there were 43 milestones addressing contaminants, but 8 individual contaminants were addressed (the milestones were generally repeated for each region). The eight milestones contaminants are the same as those in the ROD, except that salt is excluded (salt is addressed by the DWQP) and discharges from animal feeding is included. Of the 43 milestones, 32 were on schedule, 2 were behind schedule, and 9 were under evaluation because they could not be assessed. In terms of specific contaminants, all the milestones for trace metals and toxicity of unknown origin were under evaluation; oxygen-depleting substances had a mix of milestones on schedule, behind schedule and under evaluation; and all milestones for the other five contaminants were on schedule.

10. ***Improve dissolved oxygen conditions in the San Joaquin River near Stockton.*** *Simultaneously investigate specific causes as well as innovative methods to reduce problem pollutants in the river. Proposition 13 includes $40 million to construct facilities as part of this effort. Actions include:*

    - *By the end of 2001: Finalize investigation of methods to reduce constituents that cause low dissolved oxygen to be included in the Total Maximum Daily Load (TMDL) recommendation to the Central Valley Regional Water Quality Control Board (CVRWQCB).*
    - *By end of June 2002: Finalize State Basin Plan Amendment and TMDL for constituents that cause low dissolved oxygen in the San Joaquin River.*

- *By the end of 2002: Begin implementation of appropriate source controls and other controls as recommended in the TMDL.*

The dissolved oxygen in the San Joaquin River, in the vicinity of Stockton, dips below state standards, blocking salmon migration and threatening other fish.

As noted in Appendix F, Drinking Water Quality Program, state and federal laws and regulations have established a process for regulating the amount of a specific substance that can be discharged into water, or TMDL, and for incorporating this limit into a legally binding regional plan, called the State Basin Plan. The State Basin Plan for the Delta area is developed by the CVRWQCB, subject to approval by the SWRCB, Office of Administrative Law (OAL), and the US Environmental Protection Agency (USEPA). The regulatory process (meetings, public comment, etc.) requires anywhere from two months to several years prior to adoption by the regional board. Approval by the SWRCB and OAL takes a minimum of six months, at which time the regulations become effective and a source control program may be implemented. USEPA approval is needed for certain types of regulations to be legally binding, at which time the basin plan and TMDL are deemed to be finalized; USEPA approval takes a minimum of three months.

Assessment of Progress—Behind schedule. CALFED funded a number of studies that were started in the late 1990s and completed in 2002. Additional needed studies, which were begun in early 2005, had been delayed within CALFED due to contracting problems, grant solicitation scheduling decisions, and scientific concerns about the studies. The TMDL was adopted by the CVRWQCB in January 2005, and will be reconsidered in 2009; it has not yet been approved by the SWRCB, OAL, or USEPA. Between 2005 and 2009, further information will be developed from the additional studies of contributing factors and a large-scale, multi-year aeration demonstration project to determine the extent to which aeration will solve the problem. Of the $40 million available through Proposition 13, about $14 million has been identified for studies and approximately $24 million is available for construction.

It should be noted that Milestone 26 is very similar to this ROD action, except that it includes the early studies and lacks target dates, implying that the target date is the normal milestone target date of 2007 (i.e., the end of Stage 1). Milestone 26 was assessed as being on schedule, presumably because the early work has been completed and the TMDL is in process.

11. ***Implement integrated flood management, ecosystem restoration, and levee restoration under the Sacramento/San Joaquin River Basins Comprehensive Study being prepared by the US Army Corps of Engineers (USACE) and California Reclamation Board (complementary action).***

    This study is a complementary action that also appears in the Levee System Integrity and Conveyance Programs. The study was essentially a large feasibility study addressing flood control, land development, and ecosystem restoration. It received final approval by early 2004. The expected outcome of the study is the identification of individual projects to undergo more specific feasibility study, and then design and construction. All work is to be funded with a 50-50 match of state and federal funds.

    Assessment of Progress—On schedule. The USACE identified four major projects for further development: San Joaquin River, North Delta Islands, Delta Islands Study, and Hamilton City. The last project is an ecosystem restoration project on the Sacramento River, and is the only project so far that has advanced. The specific feasibility study was completed and approved, and the USACE has the money for design; state funding has been approved and the contract is being processed. Congress has authorized construction funds, which may be appropriated in approximately two years.

D. Goals and Objectives

As noted in Section X, Ecosystem Restoration Program, the goal of the ERP is to improve habitats and natural processes to support stable, self-sustaining populations of diverse and valuable plant and animal species, including recovery of listed endangered species. There are six strategic goals under this overarching goal that address threatened species, ecological processes, harvested species, habitats, nonnative invasive species, and environmental water quality. The ERP has made progress in these areas, some of which is discussed above. It must be emphasized, however, that for many of these objectives, it will take years or decades to see clear results. The information below summarizes the previous information and includes additional information to address the degree to which goals and objectives have been met to date. The timeframe for this report did not permit a detailed analysis of each strategic goal.

1. **At-Risk Species—***Recover or contribute to the recovery of 44 listed species.*

   Although it will take years or decades for ecosystem restoration projects to be fully established and self-sustaining, including viable and self-sustaining

populations of threatened species, the ERP has seen early and encouraging results of some of its efforts, particularly with salmon. Salmon population data are not always a reliable indicator, especially in the short term, because populations normally fluctuate over a ten-year period, and are affected by numerous factors beyond the spawning areas. Consistent positive changes, however, in salmon population in response to restoration of spawning areas most likely indicate program success. These results are reported in the *2004 Annual Report* or the Authority's website, and are described below.

At-Risk Salmon Increases. The numbers of spring and winter run salmon returning to Butte Creek and to the Sacramento River above Red Bluff have increased very significantly following restoration activities (through 2003), and the increases have been consistent for several years.

At-Risk Salmon and Birds at Clear Creek. Restoration of Clear Creek in Shasta County began in 1994 as part of the Central Valley Project Improvement Act. The restoration milestones and targets have mostly been achieved—a dam was removed, natural flows and temperatures were restored, riparian habitat was restored—and results have been significant. The number of salmon returning (through 2003) has been 3 to 4 times greater than the number returning during the period prior to restoration. There has been a 40 percent increase in nest success for key songbirds. An endangered yellow-billed cuckoo was sighted for the first time in Shasta County in the restored area.

Songbird Reappearance. In June 2005, a nesting pair of rare songbirds (least Bell's vireo) was documented in the San Joaquin River National Wildlife Refuge, an area that was restored by CALFED beginning just three years ago. This songbird was once common in the Central Valley, but 90 percent of its former habitat has disappeared. For the past 60 years, it was seen only in Southern California, and its numbers have dwindled to only 300 nesting pairs.

2. **Ecological Processes**—*Rehabilitate natural processes (e.g., various types of water flows, temperature regimes, floodplain inundation).*

Information on processes is available in the Milestones Assessment. There are 19 milestones related to ecological processes, of which 17 were deemed on schedule by the implementing agencies and 2 behind schedule. Most of these milestones address numerous tributaries and involve dozens of projects, thus the timeframe for this report did not permit an analysis of progress for these milestones. As discussed above, the "on schedule" rating for Milestone 60,

which addresses the Sacramento River meander corridor, appears to be overly optimistic, while the same rating for Milestone 58 appears to have a solid foundation.

3. **Harvested Species**—*Maintain or enhance selected species (e.g., salmon, sturgeon, waterfowl, and crayfish).*

   Harvested species benefit from restoration actions along with endangered species, and projects have not been undertaken solely to attain higher yields of harvested species. ERP staff note that fall run salmon is one of the highest in decades, and permits and stamps for hunting and fishing—sport and commercial—have been generally steady, except for unexplained declines in commercial permits for ghost shrimp and salmon vessels. ERP staff believe these trends indicate that harvestable species are being maintained; however, no specific population data were provided to demonstrate progress toward this goal.

4. **Habitats—***Protect and/or restore various specified aquatic and terrestrial habitats (e.g., tidal marshes, seasonal wetlands, grasslands, riparian habitat).*

   The Stage 1 milestones contain 35 separate targets that quantify acreage or mileage to be restored or managed, and thus can be easily measured. Information on habitat restoration achieved is from the *2004 Annual Report*, except for four targets that were omitted from the report, in which case the information is from the Milestones Assessment. As shown in Table H-5, progress on the habitat milestones was uneven—the acreage and mileage targets were exceeded in 11 milestones, but 13 milestones had no acreage restored. It should be noted that this information is dated, and by now more targets may have been achieved.

Table H-5. Milestones by Achievement

Achievement of Acreage and Mileage Targets	Number of Milestones
Achieved or Exceeded	11
Partly Achieved	11
No Achievement	13
Total	**35**

The targets that were exceeded were exceeded significantly; therefore, the total acreage restored or enhanced exceeded the combined total for these targets, as shown in Table H-6. For acreage restoration, the combined target was 53,406 to 54,334 acres; a total of 72,112 acres was restored, including 50,868 acres

through the independent efforts of Ducks Unlimited. For slough and riparian mileage to be restored, the combined target was 117 to 128 miles; a total of 109 miles was restored. For wildlife friendly agriculture, a total of 53,089 to 89,733 acres were to be enhanced and cooperatively managed; the total achieved was 310,534 acres, including 298,643 acres through the independent efforts of Ducks Unlimited.

Table H-6. Restoration or Enhancement Objectives by Target and Achievement

Restoration or Enhancement Objective	Target	Achieved
Acres of Land	54,406 to 55,334	72,112
Miles of Slough and Riparian Habitat	117 to 128	109
Acres of Wildlife Friendly Agriculture	53,089 to 89,733	310,534

It should be noted that some milestones were expressed as percentages of targets in the program plan included among the 600 programmatic actions. For this report, ERP staff spent numerous hours reviewing the program plan and determining the correct targets for the milestones. In a few cases, the milestone targets cited in the *2004 Annual Report* were incorrect, and four targets were omitted.

5. **Nonnative Invasive Species**—*Reduce the impact of existing nonnative species and prevent the establishment of new ones.*

As described above, the ERP has established a small program for addressing nonnative invasive species. The program is mostly engaged in capacity building activities, and information is insufficient to determine the impact on nonnative species.

6. **Water and Sediment Quality**—*Improve and/or maintain water quality for plants, animals, and people.*

Water quality in a large ecosystem takes decades for changes to be measured in a meaningful way. As noted above, CALFED has undertaken 232 projects to improve water quality, which appears to be a significant start. One of the most significant ERP products is a research report, *Mercury Strategy for the Bay-Delta Ecosystem: A Unifying Framework for Science, Adaptive Management, and Ecological Restoration* (Mercury Strategy), published in 2003. The Mercury Strategy provides a cohesive and comprehensive strategy for ecosystem managers and scientists, and offers direction on crucial aspects of an interdisciplinary mercury program.[114] Approximately 20 grants and over $31 million have been awarded for projects to address mercury contamination.

114 J.G. Weiner, C.C. Gilmour, and D.P. Krabbenhoft, *Mercury Strategy for the Bay-Delta Ecosystem: A Unifying Framework for Science, Adaptive Management, and Ecological Restoration*, 2003, p. iv.

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Appendix I. Watershed Management

I. Funding[115] and Projects

A. Total Funding

For the Watershed Management program element, the Authority's fiscal system reported funding of $135 million for Years 1 through 5, or 61 percent of the $220 million original cost estimated for this period. The original estimate assumed that 46 percent of the costs would be provided by the federal government, but federal funds represent only 2 percent of the amount reported; 80 percent of funds were provided by the state, and 18 percent by users/local match. Approximately 90 percent of funds were expended for financial assistance to local programs, and 5 percent for technical assistance to local programs.

B. Project Funding

The Watershed Management program element has awarded three rounds of competitive grants, administered by the Department of Water Resources (DWR) and State Water Resources Control Board (SWRCB). Table I-1 below, based on the project database and grant administration records, shows that 116 grants and $49.4 million were awarded during Years 1 through 5. A total of $18.1 million (36 percent) was provided through Proposition 13, which emphasized construction and implementation projects to physically alter watersheds, rather than capacity building or planning (such as developing watershed management plans). Management capacity, however, can also be developed during the course of implementing construction and improvement projects. Although the funding available for grants was less than

115 As discussed in Section II, Background, the funding amounts in this report are taken from program records that have not been verified or validated.

originally anticipated at the time of the ROD, Watershed Management implementing agencies indicate that the amount of funding available was adequate for the number of high quality project proposals received.

Table I-1. Project Funding

Fiscal Year Awarded	Admin. Agency	State Dollars Awarded (Millions)		Grants Funded	
		Total	Fund Source Detail	Number	Completed
2000-01	DWR	$17.3	$10.8 Proposition 50 $5.4 General Fund $1.1 Proposition 204	53	53
2001-02	-	-	-	-	-
2002-03	SWRCB	$7.8	Proposition 13	29	0
2003-04	SWRCB	$24.3	$14.0 Proposition 50 $10.3 Proposition 13	34	0
2004-05	-	-	-	-	-
All Years		**$49.4**	**-**	**116**	**53**

Notes:
1. Excludes two grants that were awarded but later declined by the grantees.
2. Excludes local matching funds.

The grant process has been protracted. It has sometimes taken 14 months to make awards, and another 20 months to complete contracts. From the first cycle funded in 2000-01, all 53 grants have been completed; the last ones closed in June 2005. Grants from the second cycle (funded in 2002-03) are just starting implementation, and only about half the grants from the third cycle (funded in 2003-04) have begun implementation.[116] The SWRCB redesigned its grant process for the 2003-04 cycle to help expedite the process. Funds were appropriated to DWR for grants for 2004-05, but the process was deferred until 2005-06, and is currently in progress.

C. Project and Other Information

Competitive Grants. As noted above, 116 grants have been funded, and 53 completed. Table I-2 below displays the funded projects by primary type.

116 There have been disagreements over contract language related to bond fund requirements.

The greatest numbers of projects were for implementation and planning, followed by assessment and capacity building. The use of Proposition 13 funds, which were primarily for construction, led to an increase in implementation projects after the first round of grants. The next round of grants will focus on capacity building, and will fund implementation projects that promote capacity building.

Table I-2. Projects by Type

Project Type	Number	Dollars in Millions
Implementation	31	$12.3
Planning	27	13.1
Assessment	18	12.2
Capacity Building	15	5.5
Education And Outreach	12	4.3
Monitoring	11	0.9
Research	2	1.1
Total	**116**	**$49.4**

Projects were expected to meet multiple CALFED objectives (i.e., water supply reliability, ecosystem restoration, water quality, and levee system integrity). Table I-3 shows that nearly two-thirds of the projects meet three of the four CALFED objectives.

Table I-3. Projects by Multiple Objectives Addressed

Multiple Objectives Addressed	Number	Percent
Two Objectives	43	37%
Three Objectives	73	63%
Total	**116**	**100%**

Table I-4 shows that all of the 116 projects addressed the CALFED objectives of ecosystem restoration and water quality, nearly two-thirds addressed water supply reliability, but no projects addressed levee system integrity.

Table I-4. Projects by CALFED Objective Addressed

CALFED Objective Addressed	Number	Percent
Ecosystem Restoration	116	100%
Water Quality	116	100%
Water Supply Reliability	73	63%
Levee System Integrity	0	0%

Table I-5 shows the number and percent of projects by region. Half the projects have been awarded in the Sacramento River region; the remaining projects have been distributed throughout the Watershed Management focus area (which includes Southern California), while two projects have had a statewide impact.

Table I-5. Projects by Watershed Management Region

Watershed Management Region	Number	Percent
Sacramento River	58	50%
Bay	21	18%
San Joaquin River	16	14%
Delta	10	9%
Southern California	9	8%
Statewide	2	2%
Total	**116**	**100%**

Watershed Coordinators. Watershed coordinators help assess local watersheds and help bring together local government, landowners, and community groups through outreach, education, and partnerships, in order to improve the health of the watersheds The Department of Conservation funded 30 watershed coordinators as a pilot project during 2000-01 and 2001-02. The Watershed Management program element initially extended funding for 18 coordinators through December 2003. Beginning in 2003-04 and through 2006-07, the Watershed Management program element funded 48 watershed coordinators for $3 million per year.

Watershed Partnership Seminars. These two-week seminars provide training primarily to local officials involved in policy planning and decision making that affects watersheds, as well as to officials whose work influences watershed management and to leaders of industries that affect the watershed. Prior to CALFED, federal officials provided training on a national basis in Colorado and Virginia, and few individuals from California were able to attend. CALFED persuaded (and paid for) federal officials to provide the training in California, which occurred in 2001 and 2003. A total of 78 individuals were trained, at a cost of $224,000. The federal government has ceased to provide this training, and CALFED has assumed the responsibility. Contracts were recently established to conduct three training sessions over the next two years, which will result in up to 200 persons trained. Participants are selected for the seminars based on the relevance of the training to their jobs.

Technical Assistance. The DWR has approximately five positions that provide most of the technical assistance for the Watershed Management program element. (Originally several agencies were involved, but most of the staffing was eliminated due to budget constraints. Some assistance is still provided by the Department of Food and Agriculture and the Department of Forestry.) Five types of assistance are provided:

- Response to specific questions—permitting, assessment techniques, grant processes, etc.
- Periodic participation in selected efforts—currently assisting about 60 efforts with project management and with school programs, etc.
- Full partnerships—currently three partnerships, including participation in all activities and conducting water monitoring and measurement.
- Regional efforts—planning, producing maps, etc.
- Special projects—endangered species surveys, etc.

II. Performance Measures[117]

The *2004 Annual Report* includes input measures of funded projects and watershed coordinators, as both tables and maps. *The Multi-Year Program Plan (Years 5-8)* and the *Multi-Year Program Plan (Years 6-9)* include a list of accomplishments—inputs for grants and other activities, and outputs for various products developed—as well as various maps and graphs. Some of these data have been inconsistent and confusing, as further discussed below.

In June 2004, the Watershed Management program element published a draft document entitled *Watershed Program Performance Measurement*, which identified five performance measures and indicators, displayed in Table I-6, below. Four of the measures are output measures, and one (hydrograph changes, further explained below) is an outcome measure. The performance measures document is the culmination of an extensive, broad-based process in which the program considered many more measures, but in the end selected a small number of essential measures. The performance measures tie directly to the goals of the program element, as follows:

117 See Section II, Background, for an overview of CALFED performance measures.

Table I-6. Performance Measures

Program Goal	Desired Outcome	Performance Measure	Indicator	Target
Promote collaboration and integration among existing and future local watershed programs	Improved collaboration between public and private parties	Tributary watershed management partnerships with continuous activity	Diversity of involvement and continuity of local watershed initiatives, by tributary watershed	Active, diverse participation in community based watershed management for 11 tributaries to the Bay-Delta
	Maximized benefits to the CALFED Bay- Delta Program	Extent of Watershed Program supported activities that address multiple CALFED Program objectives	Percent of supported projects that help achieve objectives of three or more CALFED elements	Greater than 80% of supported projects further the objectives of three or more CALFED elements
Provide assistance for local watershed management	Improved local watershed planning and management	Effective support for local watershed planning and management	Percent area of the Bay-Delta watershed with completed assessments	Current watershed assessment for at least 80% of the Bay-Delta watershed
	Sustained local watershed management	Active participation in watershed management by local government and land use decision makers	Level of local government involvement in ongoing watershed initiatives, by tributary watershed	Active involvement of cities and counties in watershed management of 11 tributary watersheds
	Improved watershed ecosystem maintenance and enhancement	Positive changes in characteristics of tributary hydrographs	Hydrograph changes relative to selected reference watersheds	Maximum reasonable correspondence between tributary hydrographs and reference hydrographs

Although the *Watershed Program Performance Measurement* document is labeled "draft," the Watershed Management staff consider the measures complete and meaningful for the current early stage of the program, because they focus on building local capacity and improving watershed management. Staff indicated, however, that the measures may be refined in the future.

Although some information has been reported that relates to the new measures, full reporting based on the new measures has not begun, and it remains unclear to what extent that will occur, pending the current assessment and revitalization of CALFED generally. Baseline data (i.e., the pre-CALFED condition) have not been established

except for the number of watershed assessments completed, but some could be created from historical records. The current status of the reporting for each indicator is as follows:

- *Diversity of involvement and continuity of local watershed initiatives, by tributary watershed*. Not developed. Continuity would be measured by the number of watershed groups in existence for three or more years. Diversity of involvement could be measured by conducting surveys of local perceptions of inclusiveness.
- *Percent of supported projects that help achieve objectives of three or more CALFED elements*. Data on project objectives have been reported in the Status Review (discussed below) and multi-year program plans, but the data in those reports only indicated the primary objective. Our report is the first to display the degree to which projects meet multiple objectives.
- *Percent area of the Bay-Delta watershed with completed assessments*. Some information has been reported on assessments, but not yet in the form required by the measure. Also, the information has not been explained or presented in a clear and understandable manner, and has thus appeared confusing.
    - A multi-color map is available on the CALFED website that displays assessments done at different times by different entities; however, the information is not quantified and is difficult to interpret, and one assessment was done outside the CALFED focus area.[118]
    - The annual report for 2004 indicated that assessments were completed for 4,652 square miles. The significance of this figure in terms of the program's target is unclear.
    - The *Multi-Year Program Plan (Years 6-9)* includes a bar graph indicating that the total focus area is 82,151 square miles, the target area is 65,720 square miles, and assessments are underway or completed for 20,537 square miles; however, it is not clear what the target area or the total area mean, nor which figure should serve as the denominator for determining the percent complete. Furthermore, the total area of 82,151 square miles is about half the total area of California (about 160,000 square miles), yet the website map indicates a Watershed Management focus area comprising about three-quarters of the

118 http://www.calwater.ca.gov/Programs/Watershed/Maps/Watershed_Performance_Indicator_Map.pdf, visited August 5, 2005.

state. The *Multi-Year Program Plan (Years 6-9)* also reports that 14 watershed assessments have been completed covering 10,000 square miles.

- The *Multi-Year Program Plan (Years 5-8)* indicates that 9 million acres (14,000 square miles) of vegetation have been mapped. A map indicates areas in which land cover mapping is complete or in progress as of August 2004. Vegetation mapping is a prerequisite to watershed assessment, but the information provided is not explained and is hard to interpret. The map displays a core area that has different boundaries from other Watershed Management maps.

- *Level of local government involvement in ongoing watershed initiatives, by tributary watershed*. Not developed. Local government involvement could be measured by attendance at meetings (e.g., sign-in sheets) and recorded comments.

- *Hydrograph changes relative to selected reference watersheds*. Hydrographs depict the volume of water flowing over time, generally one year. The more dispersed the flow is over time, the healthier the watershed (i.e., concentrated flows indicate that groundwater is not being recharged and that the risk of flooding is increased). Many decades worth of data exist to create hydrographs, which is reportedly a simple task. The key watersheds, however, have not yet been identified, so the hydrographs have not yet been created.

III. Accomplishments

The accomplishments and performance of the Watershed Management program element are considered first in terms of accomplishments reported for ROD actions, then in terms of the nine activities specified in the program plan, and lastly in terms of the goals.

A. ROD Actions

In June 2004, the Watershed Management program element published a document entitled *Watershed Program Status Review (Years 1-4)* (Status Review), which addressed fiscal years 2000-01 through 2003-04. The Status Review described program accomplishments in terms of the grants programs—competitive grants, training seminars, watershed coordinators—and the development of performance measures. This report draws on the Status Review as appropriate. Accomplishments

of the grants programs have also been reported in the *2004 Annual Report, Multi-Year Program Plan (Years 5-8),* and *Multi-Year Program Plan (Years 6-9).*

1. ***Establish a grant program in the first year to solicit, evaluate, and fund local projects that contribute to achieving CALFED goals.*** *The watershed activities targeted by this program will:*

   - *Build local capacity.*
   - *Develop assessments and management plans.*
   - *Fund development and implementation of specific conservation, maintenance, and restoration actions.*

   Priorities include a diversity of activities for demonstration purposes, integration of multiple CALFED objectives, a variety of watershed settings, and wide geographical representation.

   Assessment of Progress—Established (and continuing). As described in the "Project Funding" and "Project Information" sections above, the grant program was established in the first year of the program and has continued to function. The projects have met the criteria for types of projects, diversity of projects, integration of multiple objectives, and wide geographical representation.

   The *2004 Annual Report* states that a comprehensive review of the first 53 watershed projects showed significant contributions toward improved water quality, water supply reliability and ecological health. This statement is supported by a detailed compendium describing the accomplishments of each project, for example: completed watershed assessments and management plans that brought local interests together and will serve to guide local decisions; development of pesticide management practices to reduce pollution of waterways; and restoration actions that improved water quality.

2. ***Develop watershed program performance measures and monitoring protocols consistent with the CALFED Science Program by the end of 2002.***

   Assessment of Progress—Completed (late). This action was completed, although it was 17 months after the ROD target date (i.e., end of 2002). The process was delayed in part due to uncertain guidance from the Science Program. Watershed Management staff had expected the Science Program to assist with the development of performance measures, but instead the Science program produced guidelines for the Watershed Management staff to use in

developing their own measures. In addition, the guidelines underwent several changes, requiring the Watershed Management staff to re-do their work twice.

3. ***Non-ROD Activities.*** This section provides information about activities related to Watershed Management goals, but not explicitly addressed in the ROD:

   Watershed Coordinators. The watershed coordinator grants require quarterly reporting of performance, activities in 21 areas, and benefits to the watershed and CALFED. Based on the most recent quarterly report available, it appears that the watershed coordinator program is very active in conducting outreach and education, implementing watershed restoration actions, garnering outside funding, and establishing new watershed partners. The projects vary in their level of development. The Department of Conservation also prepares an annual report, which can be very useful in conveying the effect of the program more fully.

   Partnership Seminars. The partnership seminars have been effective in promoting understanding of watershed management as well as improved local leadership and collaboration. (This determination is based on surveys of alumni, statements at public meetings, and CALFED communications with local communities in which seminar alumni work.) CALFED promotes continued communication and networking among the prior participants, and recently established contracts to design an Internet-based network that will include follow-up training modules. The participants rated the training highly, and demand for the program is high.

B. Program Plan Actions

The discussion below addresses accomplishments in terms of the nine activities called for during Stage 1 in the program plan. Some of these activities concern processes rather than specific outcomes.

1. ***Fund and implement locally led watershed restoration, maintenance, conservation, and monitoring activities that support CALFED goals (Years 1-7).***

   Assessment of Progress—On schedule. As noted above, the Watershed Management program element has funded 31 implementation and 11 monitoring projects, for a total of $13.2 million awarded. These grants include projects to maintain watersheds, and to conserve watersheds and water resources.

2. **Assist local watershed groups and government agencies to address common issues (e.g., roles and responsibilities, funding support, technical assistance, and information exchange) and to ensure effective communication and implementation among government and stakeholder groups (Years 1-7).**

   Assessment of Progress—On schedule. Various facets of the Watershed Management program element contribute to this action, including watershed coordinator grants, technical assistance, capacity building grants, and partnership seminars. For example, a representative of the Silicon Valley manufacturers' group (these manufacturers are major water dischargers) attended a partnership seminar; subsequently, the manufacturers' group joined the local watershed management group. Watershed Management staff maintain contact with many industry and manufacturing groups (approximately 1,800 individuals are contacted directly through mass e-mail, and many pass the information on to others) and promote networks through the Watershed Subcommittee of the Bay-Delta Public Advisory Committee.

   Another facet of the program element that promotes communication and implementation among government and stakeholder groups is the two-stage grant proposal process. In the first stage, concept proposals are submitted. Watershed Management staff select proposals for advancement to the second stage, often informing multiple applicants from the same watershed that they must work together on a combined proposal, or telling individual applicants that they must expand their scope to involve the full array of local participants (i.e., landowners, government, and community groups).

3. ***Implement a funding process and provide watershed stewardship funds to build the capacity of locally led watershed organizations that ensure participation of local landowners (Years 1-7).***

   Assessment of Progress—On schedule. There are several aspects of the Watershed Management program element that ensure the participation of local landowners. To receive funding, grant projects must demonstrate support from landowners; further, Proposition 13 mandates that landowners be included in projects funded from that source. Watershed coordinator grants are often awarded to Resource Conservation Districts, whose boards are composed of landowners. Technical assistance is also provided to landowners, and partnership seminars emphasize inclusion of landowners.

4. ***Improve use and usefulness of information clearinghouse functions to help watershed groups obtain information on funding, technical assistance, and data storage and retrieval (Years 3-7).***

   Assessment of Progress—On schedule. Numerous activities have been undertaken to promote the improved use of information. Several efforts improved the availability of information about grant projects and funding opportunities. These include providing public access to information on grant funded projects through the Natural Resources Project Inventory database and other funding sources in the California Watershed Funding Database. The program also assisted in development of the *California Watershed Assessment Manual*, which provides general guidance on available assessment tools and methods, and processes for identifying future priority projects. Other projects resulted in technical assistance with watershed assessment, including projects that mapped vegetation, provided instruction in watershed assessment, and produced atlases containing detailed watershed maps with various types of information. Additionally, many projects included funding for geographic information system software. One project led to the creation of a web-based Watershed Information Model that incorporates data from many sources into interactive watershed maps; developed by the Western Shasta Resource Conservation District, the model can be used by other watershed areas once populated with their own local data.

5. ***Ensure that grantees complete environmental documentation and permitting; assist as appropriate (Years 1-7).***

   Assessment of Progress—On schedule. This action has been achieved largely through technical assistance activities, including responses to questions about permitting, publication of the Guide to Regulatory Compliance on the CALFED website, and workshops for grant applicants (discontinued due to budget constraints). In addition, language has been inserted in all grant contracts requiring grantees to submit documentation that their projects comply with environmental requirements. Costs for completing this documentation are reimbursable.

6. ***Evaluate benefits (including economic) that accrue from watershed plans and projects (Years 3-7).***

   Assessment of Progress—On schedule. Several means are used to demonstrate program benefits. The two catalogs of funded grants identify the

benefits of each project. Each watershed coordinator grantee reports quarterly on benefits to the watershed and to the CALFED program. Furthermore, the Watershed Management program element has funded a research project to conduct a literature review of the economic benefits of watershed management to the water supply; the report was due in September 2005 but has been delayed.

7. ***Establish, fund, and maintain watershed restoration and maintenance assistance to aid local groups and private landowners in project concept, design, and implementation (Years 1-7).***

Assessment of Progress—On schedule. As described above, two aspects of the program assist local groups and landowners with project design and implementation. Technical assistance includes direct help to grantees as well as workshops for applicants and grantees. The two-stage grant proposal process also assists applicants in the concept design. Initially, the Watershed Management program element engaged in much more extensive guidance to potential grantees, but this assistance was discontinued for legal reasons because the program might have been liable if there were to be inequitable treatment of prospective grantees.

8. ***Collaborate with other CALFED and non-CALFED programs (Years 1-7).***

Assessment of Progress—On schedule. The Watershed Management program element collaborates with other CALFED program elements and the SWRCB in consolidated grant processes; funds watershed-related activities through the Department of Forestry and Fire Protection and Department of Conservation; participated in developing the online Watershed Portal developed by the Resources Agency and California Environmental Protection Agency (CalEPA); and participated in the watershed strategic plan (discussed below).[119] The Watershed Management program element consults with all CALFED program elements—especially the Ecosystem Restoration Program, Drinking Water Quality Program, and Water Use Efficiency Program—when developing its proposal solicitation packages to ensure that the watershed grants help meet the CALFED objectives.

119 The Department of Conservation administers the Watershed Coordinator Grant Program. The Department of Forestry and Fire Protection conducts vegetation mapping, has prepared a watershed assessment manual, and has developed a watershed website that that makes available technical reports as well as GIS data related to vegetation, fire, and fuels conditions.

9. **Work with stakeholders and the Legislature to develop a statewide umbrella watershed management act (Year 1).**

   Assessment of Progress—Partly on schedule, partly not applicable. The Watershed Management program element worked with the Legislature to develop an umbrella act, but the enacted version (Chapter 735, Statutes of 2000 [AB 2117]) instead required a status report. The status report, released in April 2002, recommended a strategic plan, which was produced in August 2003; an updated 18-month plan was drafted in early 2005. In addition, a Watershed Memorandum of Understanding (MOU) was signed by CalEPA and the Resources Agency, as required by Chapter 727, Statutes of 2002 (AB 2534), which established several grants programs for Proposition 40 bond funds, including the Integrated Watershed Management Program. The goal of the MOU is to improve the coordination and integration of watershed policies statewide as well as to support the Integrated Watershed Management Program funded from Proposition 40. (Note: The Integrated Watershed Management Program grants differ from CALFED's Watershed Management grants in purpose and geographic scope, although there is some overlap in activities.)

   Interest in a statewide watershed management act has fluctuated in recent years. Watershed Management staff continue to work with stakeholders through working groups, committees, and conferences to help define the role of the state in watershed management.

C. Goals and Objectives

As noted at the beginning of this section, the goals of the Watershed Management program element are to provide financial and technical assistance for watershed activities that help achieve the mission and objectives of CALFED, and to promote collaboration and integration among existing and future local watershed programs. Based on the accomplishments described for the ROD actions and program plan, the Watershed Management program element appears to be meeting its goals.

Appendix J. Science Program

I. Funding[120] and Projects

A. Total Funding

The Science Program received $57.2 million for Years 1 through 5, or 29 percent of the $200 million original cost estimated for this period. The original estimate assumed that costs would be shared equally by the state and federal governments, but federal funds represent only 9 percent of the amount received.

The Science Program is funded, in part, by assessing a charge to the various program elements pursuant to Proposition 50 and Water Code Section 79551. Of the $57.2 million received by the Science Program for Years 1 through 5, $33.3 million is from these Proposition 50 expenditures.

B. Project Funding

Both the Science Program and the Authority's Policy and Finance Unit track project funding for the Science Program, but the two entities report funding differently (e.g., differences in categorization of activities and year of funding). Science Program staff indicate that they have revised and added categories for fiscal tracking to better reflect program activities. Although the Science Program's changes have not yet been incorporated into the Policy and Finance Unit's fiscal tracking, it is our understanding that the two entities are working to reconcile the shift in categories in both fiscal tracking systems. According to the Policy and Finance Unit (whose information is used for reporting funding information to decision makers,

120 As discussed in Section II, Background, the funding amounts in this report are taken from program records that have not been verified or validated.

stakeholders, and the public), the funding for the Science Program is as shown in Table J-1, below:

Table J-1. Science Program Funding by Element Tasks

Element Task	Dollars in Millions	Percent of Total
Data Analysis and Critical Unknowns	$25.6	45%
Science Boards, Expert Panels, and Collaboration	8.4	15%
Workshops and White Papers	8.3	15%
Oversight and Coordination	8.2	14%
Performance Measures and Assessment	3.5	6%
Communication	3.2	6%
Total	**$57.2**	**100%**

The project and funding priorities are determined by the Lead Scientist as well as the Authority's Science Program Deputy Director. Because the vision for the Science Program is set by the Lead Scientist, the vision likely plays a significant role in determining the project and funding priorities. For example, when the Science Program was viewed as having an administrative focus, then oversight, coordination, and communication activities likely would have been a high priority and funded. Similarly, when the Science Program was viewed as having a more scientific/technical focus, then data analysis, critical unknowns, science boards, workshops, etc., likely would have been a high priority and funded.

II. Performance Measures[121]

The *Multi-Year Program Plan (Years 6-9)* for the Science Program includes extensive discussion of the Science Program's efforts to develop performance measures that can be used to evaluate and communicate the progress of CALFED program elements; however, there is no discussion of efforts to develop performance measures to evaluate the Science Program itself. Although the *2004 Annual Report* and *Multi-Year Program Plan (Years 6-9)* effectively communicate the numerous activities undertaken by the Science Program, as well as some inputs (e.g., dollars invested) and outputs (e.g., workshops conducted), it is unclear what outcomes for the Science Program might demonstrate progress.

121 See Section II, Background, for an overview of CALFED performance measures.

III. Accomplishments

The documents generally used for communicating the performance of the Science Program are CALFED's annual reports and multi-year program plans. Our review is based primarily on the *2004 Annual Report* and the *Multi-Year Program Plan (Years 6-9)*, as well as discussions with program staff.

Accomplishments in key areas have been limited for the Science Program. Program staff indicate that there have been a number of critical barriers that have impeded the program's progress, including delays in contracting for critical activities and a lack of resources (funding and staff) for the program.

A. ROD Actions

This section assesses the Science Program's progress on meeting its ROD actions.

1. ***Appoint an Independent Science Board (ISB) by the middle of 2001.***

   Assessment of Progress—Completed (late). On August 14, 2003, the Authority adopted Resolution 03-08-03, which established the ISB and outlined its associated responsibilities. Assessing whether the ISB is operating effectively or efficiently is outside the scope of this review.

2. ***Appoint an independent science panel for the Environmental Water Account (EWA) by the middle of 2001.***

   Assessment of Progress—Completed (late). In October 2001, this panel was convened. Assessing whether the panel is operating effectively or efficiently is outside the scope of this review.

3. ***Coordinate existing monitoring and scientific research programs.***

   Assessment of Progress—Partly completed, partly behind schedule, but mostly ongoing activity. Because this ROD action is broad and of an ongoing nature, it is difficult to assess the implementation status. Our review indicates that the Science Program has conducted activities that are consistent with this action (e.g., the Science Program and Ecosystem Restoration Program (ERP) issued a joint proposal solicitation process to fund applied research in the ERP); however, there are areas where coordination could be improved (e.g., the Science Program's interaction with the Interagency Ecological Program [IEP]).

4. ***Refine the set of ecological, operational, and other predictive models that will be used in the evaluative process by the end of 2001.***

   Assessment of Progress—Partly completed (late), partly behind schedule. Because this ROD action is broad, it is difficult to assess the implementation status. Our review indicates that the Science Program has conducted activities that are consistent with this action (e.g., the Science Program's review of the CALSIM II water resources model, which was developed by the Department of Water Resources and the US Bureau of Reclamation); however, there are other ecological, operational, and predictive models that the Science Program has not reviewed.

5. ***Establish performance measures and indicators, and a consistent strategy of ongoing development of these, for each of the program areas.***

   Assessment of Progress—Behind schedule, but mostly ongoing activity. Although it has not been clear to CALFED program staff whether development of performance measures is the responsibility of the Authority's Science Program or the individual program elements within the implementing agencies, our review indicates that the Science Program has lead responsibility. The ROD actions specify that the Science Program is to establish performance measures and indicators, and a consistent strategy of ongoing development of these, for each of the program areas; however, the Science Program has interpreted this to mean that it has the responsibility to provide guidance to each of the program areas because the Science Program does not have adequate resources or technical expertise to develop performance measures for each of the program elements. It should also be noted that the California Bay-Delta Act Authority Act (CBDA Act) includes several references to program performance and performance measures; however, it is not clear from the CBDA Act whether ultimate responsibility rests with the Authority or the implementing agencies.

   Several efforts to develop and implement performance measures have been initiated, but none have been completed. Following is a discussion of some of the Science Program's efforts.

   The latest effort adopts a basic framework that includes three general "classes" of indicators, as follows:[122]

   - **Administrative Indicators.** These describe what resources (e.g., funds, programs, projects) are being or plan to be implemented (e.g., dollars spent, number of projects).

122 Science Program, "Framework for indicators for science, management and adaptive management in the CALFED Bay-Delta Program," provided on August 11, 2005.

- **Driver Indicators.** These describe the factors that may be influencing outcomes and may include on-the-ground implementation of management actions (e.g., acres of habitat restored) or other factors not directly related to management actions (e.g., population growth, weather and hydrologic fluctuations, climate change).
- **Outcome Indicators.** These describe measurements related to the ultimate outcome of the drivers, and should be closely related to the goals and objectives of the program (e.g., for water quality, may include measures of public health protection for tap water and cost of treatment).

This framework and these indicators are intended to be flexible and scalable to allow adaptability to each program element. In some cases, an outcome indicator in one program element may be a driver indicator in another program element. For example, improved water quality may be a driver indicator for the Levee System Integrity Program, and an outcome indicator for the Drinking Water Quality Program.

An earlier effort adopted a performance measure scheme that also consisted of three levels, as follows:

- **Level 1.** These consist of simple administrative measures, such as the number of dollars spent or projects funded.
- **Level 2.** These consist of quantifiable accomplishments directly related to program actions, such as acre-feet of water conserved or stored, levee miles improved, or fish counts.
- **Level 3.** These consist of system-wide indicators that track broad, often complex responses of groups of projects, such as water supply reliability or ecosystem health.

Although the two efforts discussed above appear conceptually similar in terms of their reliance on inputs, outputs, and outcomes, the various efforts to develop performance measures for the CALFED program have used differing methodologies and terminologies, resulting in confusion and frustration among program staff, both within the Authority as well as within implementing agencies.

Additionally, in December 2004, the Authority produced a working draft report entitled *CALFED Accomplishments and Program Performance,* the intent of which was to provide a representative example of the progress being made on each program element as well as to show that work on developing performance

measures is progressing but that much work is still needed.[123] Based on discussions with program staff, however, it was believed generally that this effort was a top-down approach reactive to mounting criticism by stakeholders, and not representative of the ongoing efforts to develop performance measures within the program elements.

Currently, all program elements use input measures, which report administrative measures such as the number of projects and dollars invested. Some of the programs use output measures, which report program products such as levee miles improved or acres of habitat restored. Few of the programs use outcome measures, which would describe the system-wide changes effected by the program toward its mission such as changes in water supply reliability or ecosystem health. Much work remains to develop and implement meaningful performance measures for nearly all program elements.

The *Multi-Year Program Plan (Years 6-9)* indicates that "… the Science Program is working with CALFED program managers and staff to develop guides and indicators of performance assessment that can be used to evaluate and communicate the progress of every CALFED program."[124] Based on our discussions with program staff, however, there are varying levels of agreement with this statement among program managers within the Authority and implementing agencies.

6. ***By the end of 2001, develop an annual science report, format, and content, which includes:***

   - *Status of the species and effectiveness of efforts to improve conditions, including EWA, ERP, and water management strategies, and provide recommendations to maximize fishery benefits while minimizing impacts to water supply.*
   - *Assessment of progress and effectiveness of each program element as indicated by performance measures and indicators.*
   - *Complete feasibility study to establish and construct CALFED Science Center.*
   - *Recommended research and/or program adjustments.*

123 California Bay-Delta Authority, *CALFED Accomplishments and Program Performance, Working Draft,* December 2004, p. 1-1.
124 CALFED Bay-Delta Program, *Science Program Multi-Year Program Plan (Years 6-9),* July 2005, p. 8.

Assessment of Progress—Behind schedule. Our review indicates that the Science Program's assessment and reporting of its progress in meeting this ROD action is inconsistent. The *2004 Annual Report*[125] and *Multi-Year Program Plan (Years 6-9)*[126] erroneously reflect these ROD actions as completed, presumably based on the assertion that this report has been subsumed into the annual reports. The *Multi-Year Program Plan (Years 6-9)* also indicates, however, that the Science Program does not have the staff or resources necessary to develop and produce an annual report that includes the content specified by the ROD.

7. ***Implement the Comprehensive Monitoring, Assessment and Research Program (CMARP).***

CMARP, which originated from a Congressional mandate to monitor success of CALFED restoration efforts, was envisioned as an effort to provide scientific oversight and establish standards for the monitoring and reporting of data being collected, convert these technical data into information that could be understood by decision makers and the public, and provide this information to decision makers and the public.

Assessment of Progress—Behind schedule; significant scope changes. Discussions with Science Program staff indicate that implementation of CMARP has been unsuccessful to date and has undergone significant changes to narrow its scope. It is our understanding that there are ongoing efforts to establish more focused monitoring and reporting standards (e.g., currently, the IEP is attempting to address monitoring and reporting related to Department of Fish and Game mandates as well as drinking water requirements). Our review indicates that neither the *2004 Annual Report* nor the *Multi-Year Program Plan (Years 6-9)* adequately communicates to stakeholders the status of CMARP or other related monitoring and reporting efforts.

B. Other Activities

Due to the long-term goal of the Science Program and the broad program commitments and actions identified in the various guiding documents, the Lead Scientist and Science Program staff have synthesized the broad objectives into the following six organizational tasks in order to facilitate tracking and reporting:

1. Investment in Priority Scientific Information Needs

2. Communication of Scientific Understanding

125 CALFED Bay-Delta Program, *2004 Annual Report,* p. 50.
126 CALFED Bay-Delta Program, *Science Program Multi-Year Program Plan (Years 6-9),* July 2005, p. 24.

3. Performance Evaluation of CALFED Programs
4. Application of Scientific Practices
5. Program Planning/Reporting/Administration
6. Interagency Ecological Program Coordination

Each organizational task includes a number of activities, which are referred to as Science Program Activities in the *Multi-Year Program Plan (Years 6-9)*. Our review indicates that this methodology is easy to follow and effectively communicates to stakeholders the Science Program's activities; however, there is a risk that the numerous Science Program Activities actually serve to expand the goals/objectives and responsibilities of the Science Program, which may result in criticism from stakeholders given that the Science Program has not yet completed the measurable Stage 1 actions included in the ROD.

C. Goals and Objectives

The long-term goal of the Science Program is to establish a body of knowledge relevant to CALFED actions and their implications. That body of knowledge, both in perception and reality, must be unbiased, relevant, authoritative, integrated across program elements, and communicated to the scientific community, CALFED agency managers, stakeholders, and the public. The Science Program's activities include ROD actions as well as other actions that have been interpreted by the former Lead Scientist and Science Program staff as being necessary to achieve the long-term goal of the Science Program and the broad program commitments and actions identified in the various guiding documents.

Our review indicates that the Science Program's activities generally appear to be consistent with its long-term goal, and that some progress has been made. For example, the Science Program has worked extensively with the Ecosystem Restoration Program to address scientific uncertainties. On the other hand, the Science Program's lack of progress in coordination of monitoring and research programs appears to have negatively affected the Drinking Water Quality Program. Given that there has not been significant progress in several key areas (including coordination of monitoring and research programs, refining predictive models, and developing performance measures), it is unclear whether the Science Program is making meaningful progress toward its long-term goal.

Appendix K. Oversight and Coordination

I. Funding[127]

There was no estimated cost identified in the ROD or Implementation Plan related to Oversight & Coordination (O&C).

The *2004 Annual Report* indicates that $49.3 million was spent on O&C for Years 1 through 5, consisting of $43.6 million, or 88 percent, in state funds and $5.7 million, or 12 percent, in federal funds. Table K-1 displays the expenditures by element task according to the Authority's Policy and Finance Unit.

127 As discussed in Section II, Background, the funding amounts in this report are taken from program records that have not been verified or validated.

Table K-1. O&C Expenditures by Element Task
$ in Millions

Element Task	Actual Funds Received for Years 1-5
Executive	$14.3
Human Resources and Staff Support	7.2
Contracts/Fiscal	6.7
Environmental Compliance	4.8
Legal	3.8
Information Technology/Data Management	2.6
Program Wide Performance and Tracking	2.0
Public Affairs Public Involvement	2.0
Environmental Justice	1.7
Water Management Strategy	1.6
BDPAC Staff and Support	1.2
Regional Coordination	0.9
Finance Plan	0.7
Tribal Relations/Projects	0.2
Total (per Policy and Finance Unit)	**$49.7**

Numbers do not reconcile to amounts reported in the *2004 Annual Report* due to reconciliation issues outside the scope of our review.

II. Performance Measures[128]

The *Multi-Year Program Plan (Years 6-9)* for O&C includes no discussion of efforts to develop performance measures to evaluate O&C. Although the *2004 Annual Report* and *Multi-Year Program Plan (Years 6-9)* effectively communicate the numerous activities undertaken by O&C, as well as some inputs (e.g., dollars invested) and outputs (e.g., public information and outreach efforts), it is unclear if there are outcomes that can be used to measure O&C in a meaningful way. Because of the

128 See Section II, Background, for an overview of CALFED performance measures.

nature of the O&C function, any such measures likely would be qualitative rather than quantitative.

III. Accomplishments

The documents generally used for communicating the performance of O&C are CALFED's annual reports and multi-year program plans. Our review is based on the *2004 Annual Report* and the *Multi-Year Program Plan (Years 6-9)*, as well as discussions with program staff.

The *2004 Annual Report* highlights specific accomplishments within the O&C function, and the *Multi-Year Program Plan (Years 6-9)* indicates that progress is being made on all O&C tasks. As noted in Section XIII, Oversight and Coordination, the Authority staff developed categories of program-wide activities to track and report O&C activities, which in the *Multi-Year Program Plan (Years 6-9)* are called goals. Our review consists of assessing whether the O&C activities being conducted by the Authority's staff are consistent with the ROD implementation commitments and/or California Bay-Delta Authority Act (CBDA Act) mandates, as well as an assessment of progress of O&C activities and accomplishments.

A. Assessment of O&C Activities Consistency with ROD and CBDA Act

Table K-2 displays the O&C activities and the related ROD implementation commitments and/or CBDA Act mandates, if any.

Table K-2. O&C Activities and Related ROD Implementation Commitments and/or CBDA Act Mandates

O&C Activities	ROD Implementation Commitments	CBDA Act Mandates
Financing	Beneficiaries Pay	No reference
Program Tracking Annual and Multi-Year Program Planning Annual Report of Progress and Balance	CALFED Agency Coordination	• Develop policies and make decisions at program milestones • Track the progress and assess overall achievement • Modify, as needed, timelines and activities • Communicate with Congress and the Legislature • Before 11/15, annually review progress of implementation • Before 12/15, annually report status of implementation (if schedule has not been "substantially adhered to," prepare revised schedule to achieve balanced progress) • Prepare and submit an annual state proposed budget • Coordinate with federal agencies to develop a proposed federal budget • Coordinate and assist with integration to maximize available resources and reduce conflicts • Provide a forum for the resolution of conflicts/ disputes among implementing agencies • Adopt criteria for review, approval, and modification of annual program plans • CBDA Act mandates responsibility for preparing annual program plans on implementing agencies
Regional Coordination	Local Leadership	Seek and promote partnerships with local interests and programs
Public Information and Outreach Support for the Authority Board and the BDPAC (including its subcommittees)	Stakeholder Consultation	Meet jointly with BDPAC at least once annually

O&C Activities	ROD Implementation Commitments	CBDA Act Mandates
Coordination of Environmental Justice Activities	Environmental Justice	CBDA Act mandates responsibilities on implementing agencies
Coordination of Tribal Activities	Tribal Consultation	CBDA Act mandates responsibilities on implementing agencies
Water Management/ Water Supply Reliability	• Compliance with Water Rights Laws • Project Operations	CBDA Act shall not be construed to restrict or override authority or responsibility of state, federal, or local water project operations under applicable law and contracts
No activity	Land Acquisition	No reference
No activity	Integration of Nonsignatory Agencies	No reference
No activity	Environmental Documentation	CBDA Act permits the Authority to obtain and hold regulatory permits and prepare environmental documents
No activity	Permit Clearinghouse	Develop a regulatory coordination and streamlined process for the issuance of permits/approvals
No activity	Adaptive Management/ Science	Manage the Science Program element
No activity	Coordinated Operation Agreement	No reference

As illustrated in Table K-2, most of the O&C activities are consistent with the ROD implementation commitments and CBDA Act mandates; however, in some cases, it does not appear that any of the Authority's O&C activities address the ROD implementation commitments and/or CBDA Act mandates (i.e., land acquisition, integration of nonsignatory agencies, environmental documentation, permit clearinghouse, adaptive management/science, and coordinated operation agreement). Further, in some cases, it appears that the Authority's O&C activities may be broader than envisioned in the ROD and/or CBDA Act (i.e., environmental justice and tribal consultation activities).

B. Assessment of O&C Activities and Accomplishments

Following is a discussion of O&C activities and accomplishments as reported in the *2004 Annual Report* and *Multi-Year Program Plan (Years 6-9)*, and our assessment of progress based on information obtained during the course of our review.

1. ***Financing.*** *Program documents highlight that a Finance Plan was approved by the Authority Board by unanimous vote in December 2004.*

   Assessment of Progress—Significant effort; unsuccessful to date; but ultimately not within the Authority's existing statutory authority. The ROD's implementation commitments included Beneficiaries Pay as a fundamental philosophy that costs should, to the extent possible, be paid by the beneficiaries of the program actions. In December 2004, the Authority Board approved a Finance Plan to serve as a framework to guide the financing of the CALFED program over the next ten years (2005-2014), including funding and cost-sharing targets for each of the program elements. The CBDA Act specifies, however, that the Authority may not levy taxes, user fees, or assessments without explicit legislative approval. As a result, although the Authority staff dedicated significant effort to develop a finance plan that implements the beneficiaries pay principle, and the Authority Board approved the finance plan, neither the Administration or Legislature proposed or adopted the statutory changes necessary to implement the finance plan as part of the 2005-06 budget. It is our understanding that the Authority staff's current efforts in this area are to establish "users' contributions" as part of the larger, ongoing effort to revitalize CALFED.

2. ***Program Tracking, Annual and Multi-Year Program Planning, and Annual Report of Progress and Balance.*** Program documents highlight the following accomplishments:

   - *Authority staff compiled a comprehensive state/federal cross-cut budget report that identifies all state and federal CALFED expenditures by agency by year.*
   - *Authority Board approved the multi-year program plans for Years 5-8 in August 2004.*
   - *Authority Board approved the Statement of Progress and Accomplishments for the 2004 Annual Report to the Legislature and Congress in October 2004.*
   - *Completed the Annual Report in March 2005, which was distributed to the Authority's general mailing list and the Legislature. The Secretary of the Interior submitted the report to the appropriate authorizing and appropriating committees in Congress.*

   Assessment of Progress—Significant effort; success to date questionable; but ultimately not within the Authority's existing statutory authority. In terms of program tracking, the Authority's Policy and Finance Unit is ultimately responsible for fiscal tracking and reporting; however, the detailed program, project, and fiscal data exist at the implementing agencies. The implementing agencies track this detailed information, and report it at a relatively high level to the Authority staff, who in turn, review it and compile it into a master database that tracks funding by agency, program element, fund source, task, fiscal year, etc. It is the Authority's data that are used to report fiscal information in the annual reports and at Authority Board and Bay-Delta Public Advisory Committee (BDPAC) meetings, as well as to respond to inquiries or information requests from the Administration, Legislature, Office of Management and Budget, etc. Based on findings and observations noted during our review, discrepancies often exist between the fiscal information tracked by the implementing agencies and/or the Authority's program staff and the Authority's fiscal staff. There may be reconciling factors; however, those issues were outside the scope of our review.

   In terms of annual and multi-year program planning, the implementing agencies prepare the multi-year program plans annually, the Authority staff coordinate and review them, and the Authority Board typically approves them (e.g., although the Authority Board approved the multi-year program plans for Years 5-8 in August 2004, it disapproved four multi-year program plans for Years 6-9 due to program funding issues at its October 2005 meeting). The full

implication of the Authority Board's disapproval of these multi-year program plans is unclear at this time.

In terms of the annual report of progress and balance, the Authority has prepared and issued an annual report since its inception, including program objectives and accomplishments as well as fiscal information. Although the CBDA Act requires the Authority to report to the Governor, the Secretary of the Interior, the Legislature, and Congress on the status of implementation by December 15 of each year, program documents indicate that the *2004 Annual Report* was not distributed until March 2005. Additionally, the *2004 Annual Report* does not explicitly state that implementation of the program has been balanced; however, it implies it. Specifically, the *2004 Annual Report* highlights that the Authority Board adopted the Delta Improvements Package as an integrated set of schedules and actions to ensure that water supply reliability, water quality, and environmental improvements in the Delta move forward in a balanced manner. Further, the *2004 Annual Report* specifies a series of priorities for 2005 "to ensure ongoing balanced implementation."

Our review indicates that the multi-year program plans and annual reports do not always adequately communicate a program element's implementation status in terms of which goals and objectives have been met and where performance has been measured and reported to date, nor do they always adequately communicate program changes. The CBDA Act requires the Authority to adopt criteria for review, approval, and modification of the multi-year program plans; however, the responsibility for preparing the multi-year program plans rests with the implementing agencies pursuant to the CBDA Act. Based on the criticism of CALFED during legislative hearings on the 2005-06 budget from the Legislature and stakeholders, who raised concern about whether the program was achieving its goals and objectives, some decision makers and stakeholders do not view these documents as useful for communicating implementation status or performance.

3. ***Regional Coordination.*** *Program documents highlight the following accomplishments:*

   - *Conducted outreach and worked with regional interests.*
   - *Prepared draft regional profiles for each of the regions, in coordination with the Department of Water Resources (DWR) effort to update the State Water Plan.*

- *Worked with Delta Protection Commission (DPC), regional interests in the Bay Area, and the Sacramento River Conservation Area Forum on various regional issues.*
- *Worked with the DPC, its CALFED committee, stakeholders, CALFED program managers, and Science Program staff on scientific uncertainties, with major focus on the Delta Improvement Package and the Delta Regional Profile.*

Assessment of Progress—Successful to date. Although our review did not verify or validate these activities, these accomplishments appear to be consistent with the ROD and CBDA Act.

4. ***Public Information and Outreach and Support for the Authority Board and the BDPAC (including its subcommittees).*** *Program documents highlight the following accomplishments:*

- *Sent six news releases and two advisories, and assisted with three releases from other agencies.*
- *Gave numerous briefings and presentations.*
- *Completed, posted on the Authority's website, and distributed to the list serve eight electronic newsletters.*
- *Conducted continuous content updates to Authority's website.*
- *Updated the CALFED General Brochure.*
- *Supported federal authorization as well as additional state and federal financing of the CALFED program.*
- *Supported six Authority Board meetings.*
- *Supported five BDPAC meetings as well as numerous subcommittee meetings.*

Assessment of Progress—Successful to date. Although our review did not verify or validate these activities, these accomplishments appear to be consistent with the ROD and CBDA Act.

5. ***Coordination of Environmental Justice Activities.*** *Program documents highlight the following accomplishments:*

- *Established the first Environmental Justice Special Session at the biannual Science Conference entitled "Data and Advocacy—What is the role for Environmental Justice?"*

- *Environmental Justice Subcommittee drafted program-wide objectives and specific program-by-program recommendations.*
- *Conducted Environmental Justice Subcommittee meetings in communities (Oakland and North Richmond).*
- *Completed CalEPA Environmental Justice Action plan.*
- *Worked with the Watershed Program and the Department of Forestry and Fire Protection to produce geographic information system (GIS) data sets and eventual mapping of key CALFED project areas in Environmental Justice and Tribal communities.*
- *Worked with Ecosystem Restoration Program grantee (San Francisco Estuary Institute) on a steering committee that is examining mercury contamination in the Bay Delta fisheries and improving public awareness, outreach, and education to affected communities.*

Assessment of Progress—Success to date unclear; but ultimately not Authority's responsibility. While many of these accomplishments appear consistent with the ROD and CBDA Act, it does not appear they are all related to environmental justice (i.e., GIS mapping and mercury fish steering committee). Notwithstanding the Authority's activities in this area, our review indicates that the CBDA Act mandates environmental justice responsibilities on implementing agencies.

6. ***Coordination of Tribal Activities.*** *Program documents highlight the following accomplishments:*

- *Established part-time Tribal/Environmental Justice Intern to assist Tribal Coordinator.*
- *Conducted tribal briefings/tours, in coordination with the US Bureau of Reclamation and Department of Water Resources.*
- *Conducted tribal outreach, including completing Authority's Tribal Web page, initiating efforts to develop a tribal reference library, and working closely with Department of Health Services on establishing tribal representation on the San Francisco Estuary Institute mercury fish steering committee.*

Assessment of Progress—Success to date unclear; but ultimately not Authority's responsibility. These accomplishments appear consistent with the ROD and CBDA Act; however, notwithstanding the Authority's activities in this

area, our review indicates that the CBDA Act mandates tribal responsibilities on implementing agencies.

7. ***Water Management/Water Supply Reliability.*** *Program documents highlight the following accomplishments:*

   - *Participated in activities on Common Assumptions effort, which is developing a unified set of data and modeling tools for conducting water management analyses.*
   - *Coordinated activities on the update of the State Water Plan and the CALFED Regional Profiles.*
   - *Coordinated activities for the four-year comprehensive review of the Water Use Efficiency program element.*
   - *Coordinated planning activities that optimize conveyance in the Delta area that will improve water supply reliability for in-Delta and export users, support continuous improvement in drinking water quality, and complement ecosystem restoration.*

   The ROD included a Water Supply Reliability section, and the CBDA Act defines Water Supply Reliability as a program element. The Authority, however, addresses Water Supply Reliability as an O&C function rather than treating it like a program element (e.g., a multi-year program plan is not prepared for it). We believe that the goals, objectives, and activities of Water Supply Reliability are addressed in our reviews of the Storage, Conveyance, Water Transfer, Environmental Water Account, and Water Use Efficiency program elements; as such, the reader is referred to those sections.

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Appendix L. Glossary and Acronyms

Authority. California Bay-Delta Authority. State agency, within the Resources Agency, that is charged with providing policy direction, accountability, and coordination for CALFED activities. The Authority is a representative body comprised of representatives of state and federal agencies, public members, and ex officio members.

AWMC. Agricultural Water Management Council. A nonprofit public benefit corporation organized to advance and promote effective agricultural water management practices in California.

BDPAC. Bay-Delta Public Advisory Committee. Representative body, constituted under federal law, to provide advice and recommendations about implementation of the CALFED program. Pursuant to BDPAC's 2005 charter, BDPAC shall advise the Secretary of the Interior and Interior agency executives participating in the CALFED program who serve as members on the Authority, and may share information with the Governor, California Bay-Delta Authority, and other state and federal entities participating in the program.

BMPs. Best management practices. BMPs are used in several program elements.

CalEPA. California Environmental Protection Agency.

CALFED. CALFED Bay-Delta Program. Consortium of 12 state and 13 federal agencies.

CBDA. California Bay-Delta Authority. See "Authority."

CBDA Act. State law (Chapter 812, Statutes of 2002) that established the California Bay-Delta Authority, effective January 1, 2003.

CCWD. Contra Costa Water District.

CEQA. California Environmental Quality Act.

cfs. Cubic feet per second. A unit of measure for water conveyance.

CMARP. Comprehensive Monitoring, Assessment and Research Program. A component of the Science Program element.

COA. Coordinated Operation Agreement. A document in Oversight and Coordination.

Complementary Action. An action included in the ROD that was not analyzed in the final EIS/EIR. Complementary actions were to be pursued through further environmental review.

Conservation Agreement. A signed agreement among the ten federal and state agencies defining the parties' commitments with respect to the at-risk species. The Conservation Agreement includes a commitment that there will be no reductions in water exported from the Delta as long as CALFED complies with endangered species laws and specified program requirements. See Section II, Background, for additional information.

Constituent. In the context of drinking water, a constituent is a substance present in the water, such as organic carbon or a pollutant. An undesirable substance is referred to as a "constituent of concern." See Drinking Water Quality Program element.

CUWCC. California Urban Water Conservation Council. A partnership of urban water agencies, public advocacy organizations, and other interested groups created to increase efficient water use statewide.

CVP. Central Valley Project. Water storage and delivery system of dams, reservoirs, and canals operated by the United States Bureau of Reclamation. Transports water from Northern California to users/suppliers in the San Joaquin Valley. Facilities include a pumping station at Tracy in the South Delta.

CVPIA. Central Valley Project Improvement Act. This Act (Title 34 of Public Law 102-575) mandates changes in management of the Central Valley Project, particularly for the protection, restoration, and enhancement of fish and wildlife.

CVRWQCB. Central Valley Regional Water Quality Control Board.

CWMP. Conjunctive Water Management Program. An activity in the Storage Program element.

DFG. Department of Fish and Game. A state implementing agency for one or more CALFED program elements.

DHS. Department of Health Services. A state implementing agency for one or more CALFED program elements.

DPC. Delta Protection Commission.

DRMS. Delta Risk Management Strategy. An activity in the Levee System Integrity Program element.

DS1 Implementation Plan. Draft Stage 1 Implementation Plan. A document used in the Ecosystem Restoration Program.

DWQP. Drinking Water Quality Program. One of the CALFED program elements.

DWR. Department of Water Resources. A state implementing agency for one or more CALFED program elements.

EIS/EIR. Environmental impact statement, which is required under the National Environmental Policy Act, and environmental impact report, which is required under the California Environmental Quality Act. These documents are used for planning and decision-making. The material for each document is often combined into a single document to meet both federal and state requirements, when both must be met.

ELPH. Equivalent level of public health. "ELPH protection" addresses water quality by considering a suite of actions across the entire system, including source water, treatment, flow and conveyance management, water quality exchanges, and distribution. An activity in the Drinking Water Quality Program element.

EMU, EMZ. Ecological management unit and ecological management zone. Geographical units in the Ecosystem Restoration Program.

ERP. Ecosystem Restoration Program. One of the CALFED program elements.

ESA. Endangered Species Act.

EWA. Environmental Water Account. One of the CALFED program elements.

EWP. Environmental Water Program. A component of the Ecosystem Restoration Program.

FWS. Fish and Wildlife Service. A federal implementing agency for one or more CALFED program elements.

GIS. Geographic information system.

IEP. Interagency Ecological Program. A partnership of state, federal, and nongovernmental agencies that conducts baseline scientific monitoring and research in the Sacramento-San Joaquin estuary. A science-related entity of the CALFED program.

Implementing agency. State law (Water Code Section 79441(a)) designates state and federal agencies responsible for implementing the various CALFED program elements.

ISB. Independent Science Board. A panel of independent scientists created in accordance with the ROD. A science-related entity of the CALFED program.

JPOD. Joint Point of Diversion. The use of excess project pumping capacity (usually by the CVP of excess capacity at the SWP), which may include pumping of water for the EWA. An activity in the Conveyance Program element.

LSIP. Levee System Integrity Program. One of the CALFED program elements.

MAF. Million acre-feet. A unit of measure for water storage and delivery.

MOU. Memorandum of Understanding. There are a number of MOUs related to the various CALFED program elements.

MSCS. Multi-Species Conservation Strategy. The MSCS is a plan covering multiple species adopted by 10 federal and state CALFED agencies in 2000 in order to comply with the Federal Endangered Species Act, the California Endangered Species Act, and California's Natural Community Conservation Planning Act. See Section II, Background, for additional information.

NEPA. National Environmental Policy Act.

NISP. Nonnative invasive species program. An activity in the Ecosystem Restoration Program.

NMFS. National Marine Fisheries Service. A federal implementing agency for one or more CALFED program elements.

O&C. Oversight and Coordination. One of the CALFED program elements.

OAL. Office of Administrative Law (state agency).

OEHHA. Office of Environmental Health Hazard Assessment (state agency).

Pelagic Fish. Fish that live in the open ocean, or fish that live close to the shore but spend most of their lives swimming in the water column as opposed to resting on the bottom. Pelagic fish in the Delta swim in the water column and include Delta smelt, striped bass, and threadfin shad.

Program Element. A level of organization within CALFED. CALFED activities are conducted through 11 program elements.

Proposition 13. A bond act approved by voters in March 2000, and a significant funding source for CALFED. Official title is "Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Bond Act."

Proposition 50. An initiative statute authorizing the sale of bonds, which was approved by voters in November 2002 and is a significant funding source for CALFED. Official title is "Water Quality, Supply and Safe Drinking Water Projects. Coastal Wetlands Purchase and Protection."

PSP. Proposal Solicitation Package. Document used in several CALFED program elements to solicit grant proposals.

QO. Quantitative Objective. An estimate of water use efficiency measured in acre-feet or water quality benefits, developed to provide irrigated agriculture with goals. A term used in the Water Use Efficiency Program element.

ROD. Record of Decision. A federal environmental document that represents the culmination of state and federal environmental processes. The CALFED ROD is the environmental document that specified the program plan and commitments for the 30-year life of the program and for Stage 1, which covered the first 7 years.

SCVWD. Santa Clara Valley Water District.

SDIP. South Delta Improvement Program. The program for South Delta conveyance improvements that preceded and were incorporated into the ROD.

SEMS. Standardized Emergency Management System.

SRCAF. Sacramento River Conservation Area Forum.

Stage 1. The first 7 years of the 30-year program adopted pursuant to the Record of Decision. Covers state fiscal years 2000-01 through 2006-07, and federal fiscal years 2001 through 2007.

SWP. State Water Project. Water storage and delivery system of reservoirs, aqueducts, power plants, and pumping plants, operated by the Department of Water Resources. Transports water from Northern California to users/suppliers in southern and coastal areas of California. Facilities include the intake site and pumping station at Clifton Court Forebay in the South Delta.

SWRCB. State Water Resources Control Board. A state implementing agency for one or more CALFED program elements.

TAF. Thousand acre-feet. A unit of measure for water storage and delivery.

TBP. Temporary Barrier Program. An activity in the Conveyance Program element.

TMDL. Total maximum daily load. The highest amount of a specific substance that can be discharged into water, pursuant to state and federal laws and regulations.

USACE. United States Army Corps of Engineers. A federal implementing agency for one or more CALFED program elements.

USBR. United States Bureau of Reclamation. A federal implementing agency for one or more CALFED program elements.

USEPA. United States Environmental Protection Agency. A federal implementing agency for one or more CALFED program elements.

WUE. Water Use Efficiency. One of the CALFED program elements.

Appendix M. Agency Response and Stakeholder Feedback

This appendix contains the Resources Agency's response to our draft report issued on November 10, 2005, as well as feedback received from implementing agencies and stakeholders. Also included are the Department of Finance's responses to the feedback submitted directly to us.

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STATE OF CALIFORNIA
resources
AGENCY

ARNOLD SCHWARZENEGGER, Governor
MIKE CHRISMAN, Secretary

DATE: December 15, 2005

TO: Michael Genest, Director
Department of Finance
State Capitol, Room 1145
Sacramento, CA 95814

FROM: Mike Chrisman
Secretary for Resources

SUBJECT: Draft Reports —CALFED Bay-Delta Program Review – and Fiscal Review

---

I have reviewed the Department of Finance's draft report on the implementation status of the CALFED Bay-Delta Program (CALFED) through its first five years, and the draft fiscal review report of CALFED through fiscal years ending in 2004. Your work has been constructive and contributes to the overall independent review efforts called for by Governor Schwarzenegger in the May 2005/06 Budget Revision.

I will be forwarding to Governor Schwarzenegger a 10-Year Action Plan that identifies specific actions to revitalize and refocus the CALFED Program. This action plan will be responsive to the issues raised in your reports, the Little Hoover Commission's review of governance, and an independent consultants management review, as well as identifying a near term funding plan, and future funding ranges.

CALFED represents one of the largest and most challenging water management and ecosystem restoration endeavors in the nation. Your team was able to synthesize a large number of historic documents into a thoughtful and insightful review within an aggressive time period. Finance's work is a valuable contribution towards the Governor's commitment to revitalize the CALFED Program.

cc: Joe Grindstaff
Lester Snow
Ryan Broddrick
Celeste Cantu

1416 Ninth Street, Suite 1311, Sacramento, CA 95814 Ph. 916.653.5656 Fax 916.653.8102 http://resources.ca.gov

Baldwin Hills Conservancy · California Bay-Delta Authority · California Coastal Commission · California Coastal Conservancy · California Conservation Corps
California Tahoe Conservancy · Coachella Valley Mountains Conservancy · Colorado River Board of California · Delta Protection Commission · Department of Boating & Waterways
Department of Conservation · Department of Fish & Game · Department of Forestry & Fire Protection · Department of Parks & Recreation
Department of Water Resources · Energy Resources, Conservation & Development Commission · Native American Heritage Commission · San Diego River Conservancy
San Francisco Bay Conservation & Development Commission · San Gabriel & Lower Los Angeles Rivers & Mountains Conservancy · San Joaquin River Conservancy

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DELTA WETLANDS PROJECT

November 29, 2005

Mr. Lester Snow, Director
California Department of Water Resources
1416 9th St.
Sacramento, CA 95814

Dear Lester,

I have reviewed the Department of Finance "Draft Report: Implementation Status of the CALFED Bay-Delta Program, Years 1 through 5," more commonly known as the draft "Performance Report." In the letter of transmittal to Secretary Chrisman, the Department of Finance solicits a written response to the draft by December 12, 2005. This letter is to request that you work with Secretary Chrisman to correct an error in the report with respect to the In-Delta Storage Project.

The report says that the In-Delta Storage Project has been "discontinued" (pages 24, 93, 102 and 103). That is highly misleading. While CALFED has not funded any additional studies of In-Delta Storage during the 2005/2006 year, CALFED has not removed In-Delta Storage from consideration as one of its five surface storage projects. Specifically, In-Delta Storage will continue to be evaluated as part of CALFED's "common assumptions" and economic evaluation activities. These continuing activities will rely on the extensive body of reports and studies already completed.

In-Delta Storage is the most thoroughly studied, documented and permitted project in CALFED's Surface Storage Program. In January 2004, CALFED released its 18 volume, draft feasibility study for In-Delta Storage. In response to public comments, DWR requested additional studies which were completed during the past fiscal year. These completed studies add to the extensive body of technical and scientific information previously published about In-Delta Storage, much of which was funded by the Delta Wetlands Project.

The report goes on to say (p. 23) that, "In-Delta was discontinued due to a lack of federal, state, and local interest and economic justification." It should be noted that during the comment period, support for continued project evaluation was received from organizations

Anson B. Moran, General Manager
1660 Olympic Blvd., Suite 350
Walnut Creek, CA 94596
Telephone (415) 730-5637

representing California's business community, water agencies, wildlife/environmental groups, and 35 California legislators because of the project's perceived potential benefits. More recently, there has been increased interest in the role that the four islands that comprise the In-Delta Storage Project could play in stabilizing the Delta and protecting against large scale failure of Delta infrastructure in future flood and seismic events. Dr. Mount of UC Davis, and John Cain of the Natural Heritage Institute recently testified to a State Senate subcommittee that In-Delta Storage should be considered as part of a Delta fix.

The In-Delta Storage Project is still very much part of CALFED's Storage Program. It is increasingly being considered for the benefits that it would generate in other CALFED program areas such as Ecosystem Restoration and Levee Stability. We believe that it is incorrect to say that the project has been "discontinued," and that it would be correct to say that "continued consideration of In-Delta Storage will be based on extensive studies already completed" instead. We request that you work with Secretary Chrisman to make comments to that effect to the Department of Finance in the Secretary's written response to the draft report.

Thank you for your consideration.

Sincerely,

Anson B. Moran

CC:

- Joe Grindstaff, Director, California Bay-Delta Authority
- Mark Cowin, Chief, Division of Planning and Local Assistance
- Steve Roberts, Chief, Division of Planning and Local Assistance, Surface Storage Investigations Branch

CONTRA COSTA
WATER DISTRICT

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Walter J. Bishop
General Manager

November 30, 2005

Mr. Michael Genest
Chief Deputy Director
California Department of Finance
State Capitol, Room 1145
Sacramento, CA 95814-4998

Subject: Comments on Department of Finance Assessment of CALFED

Dear Mr. Genest:

Contra Costa Water District (CCWD) has reviewed the Department of Finance (DOF) Draft Report on CALFED implementation status through the first five years of the program. CCWD finds that there are serious flaws in the DOF's conclusions regarding the water quality program that are not supported by the assessment and need to be corrected to accurately reflect the lack of progress in the area of drinking water quality. This would also affect the DOF's finding on program balance. I am submitting these comments as a member of the Bay-Delta Public Advisory Committee and as chair of its subcommittee on Drinking Water Quality.

Most disturbingly, the DOF Draft Implementation Status Report assumes, based on information provided by CALFED to DOF and to CCWD, the drinking water quality program had almost $80 million available since the 2000 ROD. The DOF Draft Fiscal Review found less than $43 million in pre- and post-ROD expenditures on drinking water quality. This discrepancy of nearly 100% substantiates the concerns that have been expressed by myself and others on the Bay-Delta Public Advisory Committee and the Drinking Water Subcommittee: Using available funding as the measure of progress grossly misrepresents the actual accomplishments and, in fact, very little has been accomplished in the area of drinking water quality. An examination of where the funds have been allocated and spent reveals that most funding has gone to studies and process. Very little funding has gone to projects that actually improve water quality, and those few projects have yet to produce much in the way of results.

Following are my two main comments on the Draft Report on implementation status.

1. DOF's criteria for assessing progress in water quality should be based on the progress on meeting the Record of Decision (ROD) commitment to continuously improve Delta water quality, not on progress related to process and studies.

Continuous improvement of Delta water quality is a cornerstone of the CALFED program and is the prime objective for the water quality program identified in the ROD. The DOF Draft Report conclusions fail to recognize that which has been discussed regularly at Bay-Delta Authority and Public Advisory Committee meetings for over two years: CALFED has not made any real progress toward improving water quality because of lack of funding and, where there has been funding, failure to fund projects that improve water quality. The DOF draft report does not even mention the key CALFED commitment in the ROD: "The CALFED Program is committed to achieving continuous improvement in the quality of the waters of the Bay-Delta system with the goal of minimizing ecological, drinking water and other water quality problems."

Nearly all of the progress cited in the DOF assessment is related to process, studies and plans for improving water quality. Over 75% of the funding for water quality has been spent on plans, assessments and studies, and of the remaining funding for actual Delta water quality improvements, only two projects representing 4% of the funding are nearing completion.

A specific example of the flaw in the DOF conclusion is represented in the discussion of the "water quality exchanges". This is a $20 million state bond funded project, which represents over 25% of the water quality program funding for the first five years. The DOF report correctly notes that *no water quality exchanges have actually been made under this project* (or any other, for that matter). That observation should have led DOF directly to the conclusion that others have made for years: that the CALFED program is having serious problems in making progress in improving water quality.

All other funding has been used to administer the program and for tasks such as establishing committees and workgroups, and preparing reports and studies. The attached table describes the breakdown of the water quality elements and shows that almost all of the funds have been spent on studies and reports and very little has gone to projects that improve water quality (Attachment A). We provided this table to DOF staff in July 2005 and it clearly demonstrates that minimal amounts of the funding have gone to projects that improve water quality.

2. The level of funding for water quality improvement has lagged behind the other program areas to the point where in 2003 the Bay-Delta Authority and Bay-Delta Public Advisory Committee were on the verge of determining CALFED implementation out of balance.

At nearly every BDPAC meeting since 2003 the failure to make progress in the water quality program has been a serious issue raised and acknowledged at all levels. In December of 2003 the balance of the entire CALFED program was seriously debated and challenged because of lack of progress on water quality. The program has not improved since then, and the Multi-Year Program Plan for 2005 was not approved this fall because of the lack of any significant funding. Yet, the DOF report has mistakenly represented progress in developing plans and funding studies for progress in meeting the objectives. Attachment B is a summary of CALFED documents that include comments regarding the lack of progress in the water quality program.

DOF appears to have used correct criteria for other programs, such as conveyance or levees, where the lack of progress in actual improvements in water supply and levees was the measure applied by DOF. But when evaluating the water quality program, where there is no visible improvement in water quality, DOF has concluded that the water quality "program element appears to be making progress". This is inexplicable.

Using completion of studies and reports as the basis for measuring implementation status is inconsistent with the CALFED water quality objective and misrepresents what has been obvious to nearly all involved in the CALFED program. The lack of progress in the water quality program has caused water quality to lag behind the other program areas; this cannot continue for balanced implementation to be achieved.

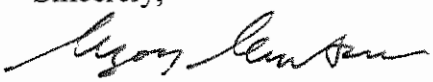
The DOF report conclusions should be revised to reflect these points. Specifically, the implementation status of the water quality program needs to be downgraded to be on a par with others like the levee, conveyance and science programs, and any other program that has thus far failed to meet ROD commitments. An acceptable measure would be the degree to which projects improving water quality are built and are operating to improve water quality.

Based on the information provided by CALFED and cited in the DOF report, an accurate conclusion would be:

> "Key ROD actions that are needed to meet the CALFED goal of continuous improvement in Delta water quality for all beneficial uses have not been met. Lack of funding for projects that improve water quality has contributed to the failure to make progress in water quality. The CALFED program has made progress on water quality studies and planning actions cited in the ROD, but not on implementation of water quality improvements. While it is premature to know whether the long-term goal can still be met, little or no progress has been made to date."

CCWD would be happy to meet and discuss these issues and we look forward to receiving a revised final report. Please contact me at (925) 688-8100 if you would like to meet or have any questions.

Sincerely,



Greg Gartrell
Assistant General Manager

GG/JDB/rlr

cc: Joe Grindstaff
Gary Hunt

Attachments
A. Breakdown of expenditure on different water quality program elements
B. Summary of CALFED Documents Discussing Lack of Progress in Water Quality

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DEPARTMENT OF FINANCE
OFFICE OF THE DIRECTOR

ARNOLD SCHWARZENEGGER, GOVERNOR
STATE CAPITOL ■ ROOM 1145 ■ SACRAMENTO CA ■ 95814-4998 ■ WWW.DOF.CA.GOV

January 18, 2006

Mr. Greg Gartrell
Assistant General Manager
Contra Costa Water District
P.O. Box H20
Concord, CA 94524

Dear Mr. Gartrell:

Thank you for your letter dated November 30, 2005, regarding the Department of Finance's *Draft Report: Implementation Status of the CALFED Bay-Delta Program, Years 1 through 5.* We understand you disagree with our assessment of the Drinking Water Quality Program's (DWQP) implementation status, which you also contend affects our assessment of program balance. Following is a discussion of the issues raised in your letter.

First, you reference a funding "discrepancy" for the DWQP. As you pointed out, Finance performed two reviews of the CALFED Program—a program review and a fiscal review. The program review's purpose was to document the status of the program's implementation to date. The time period addressed Years 1 through 5 of the CALFED Program, or fiscal years 2000-01 through 2004-05. The fiscal review's purpose was to summarize the cumulative state, local, and federal funds expended on the CALFED Program through their respective fiscal years ending in 2004 (June 30, 2004 for state expenditures, various dates for local expenditures, and September 30, 2004 for federal expenditures). Fiscal year 2004-05 had not closed in time to be included in the fiscal review. As such, the time periods covered by the two reviews are different and the fiscal information included in the two reports is not comparable. Further, although there is fiscal information included in the program review for informational purposes, the scope of the program review did not include verifying or validating fiscal information. As a result, the fiscal information included in our program review includes a disclaimer that the figures are based on CALFED's records.

Your letter also includes comments on the following two areas:

1. "DOF's criteria for assessing progress in water quality should be based on the progress on meeting the Record of Decision (ROD) commitment to continuously improve Delta water quality, not on progress related to process and studies."

The ROD specifies goals for the 30-year length of the program as well as actions for Stage 1, which covers the first 7 years. In assessing the implementation status of the 11 program elements, including the DWQP, we evaluated the extent to which these actions had been implemented through Year 5. In addition, certain program elements had various other guiding documents, and commitments in these documents were evaluated as well. We also considered progress relative to each program element's long-term goals and objectives. We reviewed program documents and interviewed program staff to complete our review.

Because CALFED was a long-term program, the Stage 1 actions for certain program elements, including the DWQP, included a high percentage of administrative activities (e.g., research, studies, etc.) rather than results-oriented activities (i.e., for the DWQP, implementation of projects to improve water quality). As illustrated in the attached table, the DWQP had a total of ten ROD actions, of which all had an administrative component. Many of the ROD actions also had a results-oriented component; however, results were anticipated for the latter part of Stage 1. The table also displays our assessment of progress for each ROD action; several had been completed or were on or ahead of schedule, while others were behind schedule. Overall, we found that progress had been made on all ROD actions except one, and progress had been mixed. In addition, six non-ROD projects that support the program goals were funded. A detailed discussion of the DWQP is included in Section VIII and Appendix F of our report.

As it relates to the DWQP's long-term goal, our review found that the goal of the DWQP was stated various ways in the ROD, the *Water Quality Program Plan,* and on the Authority's web site. Your letter states that our review should have considered the "key CALFED commitment in the ROD" related to continuously improving Delta water quality. This commitment is included in the ROD; however, the "Water Quality" section of the ROD refers to it as a "general target." The "Water Quality" section also indicates that a "specific goal" was developed, related to providing safe, reliable, and affordable drinking water in a cost effective way. As a result, and because this goal was measurable, we believed that it best captured the aim of the DWQP. Our review found that this goal currently is being met. Our review indicated that it was premature to know whether the DWQP will meet its long-term goal, but that it appeared to be making progress in that direction.

2. "The level of funding for water quality improvement has lagged behind the other program areas to the point where in 2003 the Bay-Delta Authority and Bay-Delta Public Advisory Committee were on the verge of determining CALFED implementation out of balance."

Section XIV, Program Balance, of our report addresses our consideration of whether the CALFED Program's implementation has been balanced to date. You indicate in your letter that "Using available funding as the measure of progress grossly misrepresents the actual accomplishments and, in fact, very little has been accomplished in the area of drinking water quality." In assessing program balance during our review, one alternative considered was: relative expenditures to date in comparison to the original cost estimates in the ROD. (Specifically, funding for the program elements ranged from 18 percent to 171 percent of the amount originally estimated, which suggests a lack of balance.) Ultimately, however, our methodology was based on the statutory definition of "balanced implementation" pursuant to Water Code Section 79402(b), which requires (1) consistency with the ROD's schedule and milestones and (2) concurrent and corresponding improvement in all program elements. Our review of program balance indicated that consistency with the ROD schedule was mixed, and that some program elements had achieved more progress than others. Therefore, we found that implementation of the CALFED Program had not been balanced to date.

Finally, our ratings of low, medium, and high implementation status were a function of all program elements relative to each other. In other words, program elements that appeared to have made the most improvement in terms of implementing their program commitments were designated high, and those that made the least were designated low; program elements for which the progress was neither high nor low, or was mixed were designated medium. It should be noted that our assessment of whether the DWQP's relative implementation status is medium or low would not affect our finding on program balance.

In conclusion, we acknowledge that our methodology for determining the implementation status of the CALFED Program, including the DWQP, was not the only approach. Further, we recognize that a limitation of our review was that it was largely administrative, in that it focused primarily on whether the CALFED Program met its various commitments, and less on considering the relative value of each commitment in programmatic terms. Our review was also necessarily subjective. Nevertheless, we believe that our approach was valid and reasonable, and that our assessment of the DWQP's relative implementation status as medium is supported by our review. We also believe that our finding that the CALFED Program's implementation has not been balanced to date is supported by our review. It should be highlighted that Finance's program and fiscal reviews were performed as part of the overall effort to revitalize CALFED, consistent with the Administration's commitment in the 2005-06 May Revision. We trust that our reviews will be useful to this effort as well as to budget and policy decision makers in shaping the future of CALFED.

Sincerely,

Vincent P. Brown

for MICHAEL C. GENEST
Director

Attachment

cc: Mr. Joe Grindstaff, Director, California Bay-Delta Authority
Mr. Gary Hunt, Chair, California Bay-Delta Authority

Summary of Drinking Water Quality Program ROD Actions

ROD Action	Specific Activities/Milestones	Type of Action	Assessment of Progress
1. Address drainage problems in the San Joaquin Valley to improve downstream water quality.	• Finalize State Basin Plan Amendment and Total Maximum Daily Load for salinity in lower San Joaquin River (2001). • Begin implementation of source control measures (2003).	Administrative Results-oriented (2003)	Behind schedule.
2. Implement source controls in the Delta and its tributaries.	• Establish comprehensive state drinking water policy for Delta and upstream tributaries (2004). • Develop comprehensive monitoring and assessment program (2003). • Evaluate and determine if additional protective measures are necessary (2004). • Begin implementation of source control measures (2006).	Administrative Results-oriented (2006)	Partly behind schedule, partly ahead of schedule.
3. Support the ongoing efforts of the Delta Drinking Water Council.	• Assist Council in developing technical information, identifying treatment options, etc. • Council will complete initial assessment of progress toward CALFED targets (2003). • Council will complete final assessment and submit recommendations (2007).	Administrative	Partly on schedule, partly no longer applicable.
4. Invest in treatment technology demonstration projects.	• Initiate ultraviolet disinfection plant demonstration project (2002). • Initiate regional desalination demonstration project (2002). • Evaluate practicality and determine timelines for full-scale implementation (2007).	Administrative	Completed to date.
5. Control runoff into the California Aqueduct and similar conveyances.	• Initiate comprehensive evaluation of physical modifications (2001). • Develop and implement watershed management programs adjacent to conveyance channels (2004). • Identify and begin implementation of necessary physical improvements (2005).	Administrative Results-oriented (2004-2005)	Completed.
6. Address water quality problems at North Bay Aqueduct.	• Provide funding to implement best management practices to improve watershed runoff water quality. • Study feasibility of relocating North Bay Aqueduct intake.	Administrative Results-oriented	Completed.
7. Study recirculation of export water to reduce salinity and improve dissolved oxygen in the San Joaquin River.	• Implement feasibility study of recirculating water exported from the Delta through state and federal water projects (2000). • Provide a recommendation (2002).	Administrative	Behind schedule.
8. Establish a Bay Area Blending/Exchange project.	• Complete feasibility studies (2002). • Complete environmental review, documentation, and preliminary design (2003). • Finalize agreements with project participants (2004). • Obtain authorizations and funding (2004). • Begin construction (2005).	Administrative Results-oriented (2005)	Partly completed, mostly no longer applicable.
9. Facilitate water quality exchanges and similar programs.	• Initiate evaluations of infrastructure improvements (2000). • Complete feasibility studies and implement demonstration projects (2001). • Complete environmental review and begin implementation of a long-term program, including infrastructure (2004).	Administrative Results-oriented (2004)	Behind schedule.
10. Develop and implement within two years a plan to meet all existing water quality standards and objectives for which the state and federal water projects have responsibility.	• Same as ROD Action (2002).	Administrative Results-oriented (2002)	Behind schedule (no progress).

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

Water Rosource Branch

Michael C. Genest
Chief Deputy Director
Department of Finance
Office of the Governor
State Capitol, Room 1145
Sacramento, CA 95814-4998

DEC 0 2 2005

Dear Mr. Genest:

Thank you for the opportunity to review and provide comments on your *Draft Report: Implementation Status of the CALFED Bay-Delta Program, Years 1 through 5*. Overall the report appears to be factual and concise. However, I request that you make the following text revisions, which pertain to the U.S. Army Corps of Engineers (USACE) interests.

1. On page 61 – Interagency Coordination, second bullet – delete paragraph/insert the following:

"The Federal implementing agency for the LSIP is the USACE, in partnership with DWR and DFG and in coordination with the Bureau of Reclamation and Secretary of the Interior as the Federal oversight entities for the CALFED Bay-Delta Program. Until passage of the CALFED Bay-Delta Authorization Act (P.L. 108-361) in late 2004, the USACE authority to participate was extremely limited. The Act authorized but did not appropriate $90 million through fiscal year 2010 for specific LSIP-related activities consistent with the CALFED Bay-Delta Program and ROD. Recent passage of the Energy and Water Development Appropriations Act, 2006, provided funding for USACE to start implementing the LSIP consistent with the Program and ROD, and directed the Corps to *'budget appropriately for these activities in future budget submissions.'*"

2. On page 14 – Enabling Legislation, third paragraph – delete/revise the sentence as follows:

"In late 2004, Congress enacted the Water Supply, Reliability, and Environmental Improvement Act, also referred to as the CALFED Bay-Delta Authorization Act (P.L. 108-361, Title 1, Section 101), which authorized the Secretary of the Interior and heads of other participating Federal agencies to carry out specified activities consistent with the CALFED Bay-Delta Program and ROD as a general framework."

3. On page 175 – Assessment of Progress, first paragraph, last sentence – delete after semicolon and the following.

"USACE estimated three to five years might be feasible for such a comprehensive study, if sufficient funding and political support are provided."

If you should require additional information, please contact Mr. Brandon Muncy, Chief of Planning Division, at (916) 557-6682.

Sincerely,

Ronald N. Light
Colonel, Corps of Engineers
District Engineer

DEPARTMENT OF FINANCE
OFFICE OF THE DIRECTOR

ARNOLD SCHWARZENEGGER, GOVERNOR
STATE CAPITOL ■ ROOM 1145 ■ SACRAMENTO CA ■ 95814-4998 ■ WWW.DOF.CA.GOV

January 24, 2006

Mr. Ronald N. Light
Colonel, Corps of Engineers
Department of the Army
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, CA 95814

Dear Colonel Light:

Thank you for your letter dated December 2, 2005, regarding the Department of Finance's *Draft Report: Implementation Status of the CALFED Bay-Delta Program, Years 1 through 5.* Your letter requests a number of revisions related to the U.S. Army Corps of Engineers' interests be made to our report. We appreciate your interest and input, and have thoughtfully considered all of your suggested revisions. Our final report will correctly reflect the reference to the Water Supply, Reliability, and Environmental Improvement Act. We will also include a copy of your letter in an appendix as part of agency response and stakeholder feedback.

Sincerely,

Vincent P. Brown
for MICHAEL C. GENEST
Director

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CALIFORNIA **URBAN WATER** AGENCIES

December 5, 2005

Mr. Michael C. Genest
Director
California Department of Finance
State Capitol, Room 1145
Sacramento, CA 95814-4998

SUBJECT: Comments on Department of Finance "Draft Report: Implementation Status of the CALFED Bay-Delta Program, Years 1 through 5"

Dear Director Genest:

This letter provides comments on the draft report by the State Department of Finance's (Finance) draft performance review of the CALFED Program, forwarded to Resources Secretary Chrisman by letter dated November 10, 2005. Overall we appreciate the great deal of work in a short period of time Finance put into its performance review. Our review of the draft report was generally positive, but we must disagree with the findings related to water quality. We are sending these comments to you in anticipation that the findings related to performance of the water quality element of the CALFED Program will be revised before the report is finalized.

We reviewed the draft Finance report in the context of the collective efforts for independent review requested by the Governor last summer. The recent report by the Little Hoover Commission includes important recommendations to improve the CALFED governance structure, and provides important comments about the adequacy of several of the program elements. In their "Delta Check-Up" (beginning on page 32 of that report) they could not conclude that water quality has improved. On October 17, 2005 consultant KPMG distributed their report, "CALFED Interview and Survey Findings." That report observed (page 3) that stakeholders "moderately disagree" that sufficient progress had been made on water quality, and strongly disagree that implementation of the CALFED Program on the whole has been balanced since the CALFED Record of Decision (ROD) was adopted in August 2000. The KPMG report went on to observe that water quality deserved a higher priority in the future.

We are concerned about the differences between the observations of the draft Finance report and the conclusions by the Little Hoover Commission and KPMG reports. The draft Finance report improperly characterizes the water quality element of the CALFED Program as making a "medium" level of implementation progress. The Executive Summary (page 5) includes a table of relative implementation status for each of the 11 program elements based on an evaluation of relative progress (high, medium and low) towards meeting CALFED ROD commitments. We agree generally with the report's assessments for ten of the program elements. However, there are strong disagreements from those who have been involved in CALFED over the past few years about the report's conclusions regarding the level of progress to date for the water quality program.

For example, page 4 of the Executive Summary (covered in more detail in the report), includes the following statement with respect to water quality: "It is premature to know whether the long-term goal will be met, but the program element appears to be making progress in that direction." Further, the water quality funding levels in the draft Finance report are double the level described in Finance's separate fiscal review of the CALFED program released a week following the draft performance review.

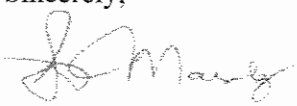
The Bay-Delta Public Advisory Committee's (BDPAC) Water Quality Subcommittee recommended several months ago that the Bay-Delta Authority not accept the proposed CALFED water quality multi-year program plan due to its inadequacies. This followed many discussions over the past two years at meetings of the Bay-Delta Authority and BDPAC, during which the balance of the entire CALFED program was seriously debated and challenged because of lack of progress on water quality (in addition to levees). Based on the Subcommittee's recommendation, the Bay-Delta Authority did not adopt the multi-year program plan. That is a good indication that the water quality program is not adequately advancing. Criteria for assessing progress in water quality should be based on the progress toward meeting the ROD commitment (continuously improve Delta water quality, ROD, page 65), not on progress related to process and studies. The former leads to a far different conclusion regarding progress and balance than the latter. We believe our view on inadequate progress on water quality is shared by the leadership at the Bay-Delta Authority.

While we are critical of past performance on water quality, there is the potential for real progress by the incorporation of water quality provisions in the planned Delta Improvements Package that we expect will move forward in the near future. Implementation of this important package will require continued leadership and funding.

We recommend that you revise the report to reflect the documented inadequate progress made for water quality since the CALFED ROD was adopted. This should include the fact that the drinking water quality program has limited funding for the very near term, and no funding yet for the long term. A frank reflection of this inadequate progress will make the Finance report far more useful as the Schwarzenegger Administration develops a longer-term CALFED funding strategy.

Thank you for the opportunity to provide comments on the draft report.

Sincerely,



Steve Macaulay
Executive Director

cc:
Joe Grindstaff, Executive Director
California Bay-Delta Authority
650 Capitol Mall, 5th Floor
Sacramento, CA 95814

DEPARTMENT OF FINANCE
OFFICE OF THE DIRECTOR

ARNOLD SCHWARZENEGGER, GOVERNOR
STATE CAPITOL ■ ROOM 1145 ■ SACRAMENTO CA ■ 95814-4998 ■ WWW.DOF.CA.GOV

January 24, 2006

Mr. Steve Macaulay
Executive Director
California Urban Water Agencies
455 Capitol Mall, #705
Sacramento, CA 95814

Dear Mr. Macaulay:

Thank you for your letter dated December 5, 2005, regarding the Department of Finance's *Draft Report: Implementation Status of the CALFED Bay-Delta Program, Years 1 through 5.* We understand you disagree with our assessment of the Drinking Water Quality Program's (DWQP) implementation status. Following is a discussion of the overall methodology for our review as well as a discussion of the issues raised in your letter.

As way of background, the Record of Decision (ROD) specifies goals for the 30-year length of the CALFED Program as well as actions for Stage 1, which covers the first 7 years through fiscal year 2006-07. In assessing the implementation status of the 11 program elements, including the DWQP, we evaluated the extent to which these actions had been implemented through Year 5. In addition, certain program elements had various other guiding documents, and commitments in these documents were evaluated as well. We also considered progress relative to each program element's long-term goals and objectives. We reviewed program documents and interviewed program staff to complete our review.

Because CALFED is a long-term program, the Stage 1 actions for certain program elements, including the DWQP, include a high percentage of administrative activities (e.g., research, studies, etc.) rather than results-oriented activities (i.e., for the DWQP, implementation of projects to improve water quality). As illustrated in the attached table, the DWQP had a total of ten ROD actions, of which all had an administrative component. Many of the ROD actions also had a results-oriented component; however, results were anticipated for the latter part of Stage 1. The table also displays our assessment of progress for each ROD action; several had been completed or were on or ahead of schedule, while others were behind schedule. Overall, we found that progress had been made on all ROD actions except one, and progress had been mixed. In addition, six non-ROD projects that support the program goals were funded. A detailed discussion of the DWQP is included in Section VIII and Appendix F of our report.

Your letter cites a number of specific reasons you believe our assessment of the DWQP's relative implementation status as medium is not appropriate, as follows:

First, you indicate that you are concerned about the differences between the observations in our report and the conclusions in the recently-issued Little Hoover Commission and KPMG reports. As you pointed out, the Little Hoover Commission's report, *Still Imperiled, Still Important: The Little Hoover Commission's Review of the CALFED Bay-Delta Program,* includes a "Delta Check-Up" section, which implies water quality has not improved. It is our understanding that this observation reflects the state implementing agencies' summary assessment of water

quality; there is no reference or comparison to the ROD or specifically to the DWQP. Your letter also references KPMG's report, *CALFED Interview and Survey Findings,* and the observation that "stakeholders 'moderately disagree' that sufficient progress has been made on water quality." This observation reflects stakeholders' responses to progress regarding the CALFED overarching objective to improve water quality, one of four CALFED primary objectives. There is no reference or comparison to the ROD or specifically to the DWQP.

Second, you indicate that the water quality funding levels in our report are double the level described in Finance's separate fiscal review released a week later. As you pointed out, Finance performed two reviews of the CALFED Program—a program review and a fiscal review. The purpose of the program review was to document the status of the program's implementation to date. The time period addressed Years 1 through 5 of the CALFED Program, or fiscal years 2000-01 through 2004-05. The purpose of the fiscal review was to summarize the cumulative state, local, and federal funds expended on the CALFED Program through their respective fiscal years ending in 2004 (June 30, 2004 for state expenditures, various dates for local expenditures, and September 30, 2004 for federal expenditures). Fiscal year 2004-05 had not closed in time to be included in the fiscal review. The time periods covered by the two reviews are different and the fiscal information included in the two reports is not comparable. Further, although there is fiscal information included in the program review for informational purposes, the scope of the program review did not include verifying or validating fiscal information. As a result, the fiscal information included in the program review includes a disclaimer that the figures are based on CALFED's records and are unaudited.

Third, you indicate that the criteria for assessing progress in water quality should be based on the progress toward meeting the ROD commitment to continuously improve Delta water quality, not on progress related to process and studies. As it relates to the DWQP's long-term goal, our review found that the goal of the DWQP was stated various ways in the ROD, the *Water Quality Program Plan*, and on the Authority's web site. Although the concept of continuously improving Delta water quality is included in the ROD, it is referred to as a "general target" in the "Water Quality" section. The "Water Quality" section also indicates that a "specific goal" was developed related to providing safe, reliable, and affordable drinking water in a cost effective way. As a result, and because this goal is measurable, we believed that it best captured the aim of the DWQP. Our review found that currently this goal is being met. Our review indicated that it was premature to know whether the DWQP will meet its long-term goal, but that it appeared to be making progress in that direction.

Fourth, you indicate that the California Bay-Delta Authority's recent action to not adopt the DWQP's multi-year program plan is "a good indication that the water quality program is not adequately advancing." The disapproval of the multi-year program plan was not a factor in our assessment of the DWQP. As described above, our assessment was based on progress in implementing the Stage 1 actions included in the ROD.

In conclusion, we acknowledge that our methodology for determining the implementation status of the CALFED Program, including the DWQP, was not the only approach. Further, we recognize that a limitation of our review was that it was largely administrative, in that it focused primarily on whether the CALFED Program met its various commitments, and less on considering the relative value of each commitment in programmatic terms. Our review was also necessarily subjective. Nevertheless, we believe that our approach was valid and reasonable, and that our assessment of the DWQP's relative implementation status as medium is supported by our review. It should be highlighted that Finance's program and fiscal reviews were performed as part of the overall effort to revitalize CALFED consistent with the Administration's

commitment in the 2005-06 May Revision. We trust that our reviews will be useful to this effort as well as to budget and policy decision makers in shaping the future of CALFED.

Sincerely,

Vincent P. Brown

for MICHAEL C. GENEST
Director

Attachment

cc: Mr. Joe Grindstaff, Director, California Bay-Delta Authority

Summary of Drinking Water Quality Program ROD Actions

ROD Action	Specific Activities/Milestones	Type of Action	Assessment of Progress
1. Address drainage problems in the San Joaquin Valley to improve downstream water quality.	• Finalize State Basin Plan Amendment and Total Maximum Daily Load for salinity in lower San Joaquin River (2001). • Begin implementation of source control measures (2003),	Administrative Results-oriented (2003)	Behind schedule.
2. Implement source controls in the Delta and its tributaries.	• Establish comprehensive state drinking water policy for Delta and upstream tributaries (2004). • Develop comprehensive monitoring and assessment program (2003). • Evaluate and determine if additional protective measures are necessary (2004). • Begin implementation of source control measures (2006).	Administrative Results-oriented (2006)	Partly behind schedule, partly ahead of schedule.
3. Support the ongoing efforts of the Delta Drinking Water Council.	• Assist Council in developing technical information, identifying treatment options, etc. • Council will complete initial assessment of progress toward CALFED targets (2003). • Council will complete final assessment and submit recommendations (2007).	Administrative	Partly on schedule, partly no longer applicable.
4. Invest in treatment technology demonstration projects.	• Initiate ultraviolet disinfection plant demonstration project (2002). • Initiate regional desalination demonstration project (2002). • Evaluate practicality and determine timelines for full-scale implementation (2007).	Administrative	Completed to date.
5. Control runoff into the California Aqueduct and similar conveyances.	• Initiate comprehensive evaluation of physical modifications (2001). • Develop and implement watershed management programs adjacent to conveyance channels (2004). • Identify and begin implementation of necessary physical improvements (2005).	Administrative Results-oriented (2004-2005)	Completed.
6. Address water quality problems at North Bay Aqueduct.	• Provide funding to implement best management practices to improve watershed runoff water quality. • Study feasibility of relocating North Bay Aqueduct intake.	Administrative Results-oriented	Completed.
7. Study recirculation of export water to reduce salinity and improve dissolved oxygen in the San Joaquin River.	• Implement feasibility study of recirculating water exported from the Delta through state and federal water projects (2000). • Provide a recommendation (2002).	Administrative	Behind schedule.
8. Establish a Bay Area Blending/Exchange project.	• Complete feasibility studies (2002). • Complete environmental review, documentation, and preliminary design (2003). • Finalize agreements with project participants (2004). • Obtain authorizations and funding (2004). • Begin construction (2005).	Administrative Results-oriented (2005)	Partly completed, mostly no longer applicable.
9. Facilitate water quality exchanges and similar programs.	• Initiate evaluations of infrastructure improvements (2000). • Complete feasibility studies and implement demonstration projects (2001). • Complete environmental review and begin implementation of a long-term program, including infrastructure (2004).	Administrative Results-oriented (2004)	Behind schedule.
10. Develop and implement within two years a plan to meet all existing water quality standards and objectives for which the state and federal water projects have responsibility.	• Same as ROD Action (2002).	Administrative Results-oriented (2002)	Behind schedule (no progress).

State Water Resources Control Board

Division of Financial Assistance
1001 I Street • Sacramento, California 95814
P.O. Box 944212 • Sacramento, California • 94244-2120
(916) 341-5700 • FAX (916) 341-5707 http://www.waterboards.ca.gov

Alan C. Lloyd, Ph.D.
Agency Secretary

Arnold Schwarzenegger
Governor

DEC 13 2005

Mr. Michael C. Genest
Chief Deputy Director
Department of Finance
Office of the Director
State Capitol, Room 1145
Sacramento, CA 95814-4998

Dear Mr. Genest:

DRAFT DEPARTMENT OF FINANCE CALFED STATUS REPORT

This letter is in response to your letter of November 10, 2005, to The Honorable Michael Chrisman, Secretary of the Resources Agency, requesting review of the Draft Department of Finance CALFED Status Report. Celeste Cantú has asked me to respond for the State Water Resources Control Board. I have reviewed the report and have enclosed the following comments as they relate to the State Water Resources Control Board programs.

I hope that this information addresses your concerns. If you have any questions, or need further assistance, you may contact me at (916) 341-5632.

Sincerely,

Barbara L. Evoy, Chief
Division of Financial Assistance

Enclosure

STATE WATER RESOURCES CONTROL BOARD COMMENTS ON WATER USE EFFICIENCY SECTIONS OF DRAFT DEPARTMENT OF FINANCE EVALUATION REPORT ON CALFED PROGRAMS

Page 129 of Appendix C

The report states "Each water transfer is analyzed for groundwater and socioeconnomic impacts under Water Code sections 1727 (a) and (b) for short term transfers and 1735 and 1736 for long-term transfers." This sentence requires some clarification. Action 6. under the CalFED ROD requires water transfer proposals submitted to the DWR, SWRCB or USBR to include analysis of potential groundwater socioeconomic or cumulative impacts as warranted by individual transfers. The State Water Board's position on socioeconomic impacts as related to transfers is that we consider these impacts under our permit authority to protect the public interest and through the CEQA evaluation of the project. Thus, while there is no specifc reference to socioeconomic impacts in Water Code sections 1727(a), 1727 (b), 1735, and 1736, we currently review these impacts though our public interest authority derived from these water code sections.

Page 142, Appendix E

It should be noted that the State Water Resources Control Board (State Water Board) provides both grants and low interest loans as financial incentives for water recycling projects. Only grants from Propositions 13 (2000 bond law) and 50 (2002 bond law) have been included in the CALFED cross-cut budget and formally tracked by CALFED. Loan assistance is not reported in Table E-1 or may appear as Users/Local fund source.

Page 143, Appendix E, Table E-2

It is unclear what is the source of the data for the local dollars awarded for water recycling. In some CALFED documents the local share has been estimated assuming that the state or federal share accounted for 25 percent of project costs. However, because some projects receive both state and federal funding, this methodology would overstate the local share of funding.

Page 143, Appendix E

This report uses capital costs per acre-foot of annual project yield as a basis of comparison for different types of projects. Another common unit of measure is life cycle cost expressed as dollars per acre-foot of water saved or produced, which incorporates operation and maintenance costs. The reader must be cautioned not to confuse these two different measures of cost. In this regard, "per year" should be added after "TAF" in Section C and in Table E-2.

Page 151, item 2, Appendix E

"$6.3 million" should be corrected to read "$11.4 million".

Page 205, Appendix I

The paragraph seems to indicate that DWR (with some assistance from Food & Ag and Forestry) are the only technical assistance being provided. If this paragraph were to only reflect that level of assistance being funded through CalFED or the Watershed Program Element, then that fact should be indicated up front (as was done on page 204 for "Watershed Coordinators" and "Watershed Partnership Seminars"). Otherwise, the paragraph doesn't recognize technical assistance provided for the CalFED Program from other agencies (including the Water Boards). Recommended change would be to acknowledge the fund source in the beginning: CalFED has provided DWR with funds for approximately five positions that....

Page 161, Appendix F

Assessment of Progress section: Revise the first sentence to read "The State Basin Plan amendment and TMDL **for salt and boron** were completed and approved..." Also modify the last sentence to read "The Basin Plan amendment and TMDL were approved by the SWRCB in Nobember 2005. The earlies approval by the USEPA is probably March 2006."

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DEPARTMENT OF FINANCE
OFFICE OF THE DIRECTOR

ARNOLD SCHWARZENEGGER, GOVERNOR
STATE CAPITOL ■ ROOM 1145 ■ SACRAMENTO CA ■ 95814-4998 ■ WWW.DOF.CA.GOV

January 24, 2006

Ms. Barbara L. Evoy
Chief, Division of Financial Assistance
State Water Resources Control Board
P.O. Box 944212
Sacramento, CA 94224-2120

Dear Ms. Evoy:

Thank you for your letter dated December 13, 2005, regarding the Department of Finance's *Draft Report: Implementation Status of the CALFED Bay-Delta Program, Years 1 through 5.* Your letter provides useful comments as they relate to the State Water Resources Control Board programs. We appreciate your interest and input, and have thoughtfully considered all of your comments. We will include your letter in an appendix to our final report as part of agency response and stakeholder feedback. In addition, we have made clarifying comments and corrections as noted below.

In response to your comment related to potential impacts of water transfers, we have made a clarifying change that reflects your review process and compliance with Water Code Sections 1727(a), 1727(b), 1735, and 1736.

You made three observations related to information in Table E-2 in *Appendix E, Water Use Efficiency Program.*

- Your first comment states that the source of the data for the local dollars awarded is unclear. The table is based directly on information in the *Water Use Efficiency Multi-Year Program Plan (Years 6-9)* and the *2004 Annual Report.* During the course of our review, neither the California Bay-Delta Authority nor the implementing agencies could substantiate this information; however, we believe it was reasonable to use because it was cited in published documents.

- Your second comment raises questions about the heading for the last column in the table. We have changed the column heading to more accurately reflect what the numbers represent.

- Your third comment notes a reference to Table E-2 where we incorrectly cited a number. We have made the correction.

Your clarifying changes related to the Drinking Water Quality Program regarding the status of the State Basin Plan Amendment and Total Maximum Daily Load for salt and boron also were incorporated.

Sincerely,

Vincent P. Brown

for MICHAEL C. GENEST
Director

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