PROJECT 16B

Western Canal Water District Tailwater Recovery System Feasibility Study

1. Project Description

Project Type:	**System improvement**
Location:	**Butte County**
Proponent(s):	**Western Canal Water District (WCWD or District)**
Project Beneficiaries:	**Downstream users**
Total Project Components:	**Short-term components in addition to long-term component which could potentially include the development of a tailwater recovery system**
Potential Supply:	**Possibly 10,000 to 50,000 acre-feet per year (ac-ft/yr) of water could be made available in basin from reduced diversions, depending on the outcome of the short-term project**
Cost:	**Unknown**
Current Funding:	**$125,000**
Short-term Component:	**Feasibility analysis of a tailwater recovery system**
Potential Supply (by 2003):	**None**
Cost:	**$125,000**
Current Funding:	**125,000; full funding of this project has already been awarded through Proposition 13 funds**
Implementation Challenges:	**Potential controversy over the issue of real water or the transferability of this water in-basin**
Key Agencies:	**U.S. Bureau of Reclamation (USBR) and California Department of Water Resources (DWR)**

Summary

The purpose of this project is to perform a feasibility analysis of a tailwater recovery system. The analysis would evaluate the cost effectiveness of reusing recovered tailwater within the District, quantifying the amount of tailwater generated, and monitoring the quality to determine if it is of sufficient quality for reuse. If this project is determined to be feasible and is implemented, it is estimated that surface diversions from the Feather River would be

reduced between 10,000 to 50,000 ac-ft. This project would change the timing of the release of this water from the State Project, which would increase overall system flexibility.

Short-term Component

The short-term component of this project is a feasibility study to determine if it is technically feasible to construct and operate a tailwater recovery system. The goals of the project include evaluation of the relative cost effectiveness of reusing recovered tailwater within the District, quantifying the amount of tailwater generated, and monitoring the quality of tailwater to determine if the tailwater meets District standards for reuse. These goals are consistent with the Agricultural Water Management Council's Efficient Water Management Practices. The Western Canal Water District's Tailwater Recovery System would partially address CALFED Quantifiable Objective #38 by reducing diversions from the Feather River. The feasibility study would quantify the amount that may be available for flow to improve aquatic ecosystem conditions in the Feather River.

Work Plan

Task 1–Preparae and distribute a Request for Proposal (RFP) for the Western Canal Water District Tailwater Recovery System Feasibility Study.

Task 2—Review responses to RFPs for the Western Canal Water District Tailwater Recovery System Feasibility Study.

Task 3—Contract with qualified consulting firm for completion of the Western Canal Water District Tailwater Recovery System Feasibility Study.

Task 4—Hold initial scoping meeting with Contractor delineating schedules, budgets, resources, alternatives, and expectations.

Task 5—Submit quarterly progress reports to DWR beginning with the contract negotiations and continuing for the duration of the project.

Task 6—Conduct field investigations and data gathering, including surveying, tailwater monitoring for quantity and quality, and cost and benefit assessment.

Task 7—Complete a draft report for internal review.

Task 8—Complete a draft final report and submit to the public and DWR for comments.

Task 9—Complete a final report and submit to DWR.

Long-term Component

The primary purpose of this evaluation is to evaluate the potential for this project to provide water supply benefits in the short-term (by end of 2003). As part of this initial evaluation, potential long-term components of the proposed project (defined as any part of the project proceeding past or initiated after December 2003) have been considered on a conceptual level. Further consideration and technical evaluation of long-term component feasibility and cost will occur as the next level of review under the Sacramento Valley Water Management Agreement. Long-term-component project descriptions are included in these short-term project evaluations only as a guide to the reader to convey overall project intent.

A long-term component of this project is unknown at this time; however, depending on the outcome of the feasibility analysis, a tailwater recovery system could potentially be developed and could yield up to 50,000 ac-ft/yr.

2. Potential Project Benefits/Beneficiaries

The District currently has the right to divert 295,000 ac-ft of surface water from the Feather River. If the District determines that a tailwater recovery system is feasible, it could potentially reduce its diversions from the Feather River by an estimated 10,000 to 50,000 ac-ft/yr. Depending on timing, all or a portion of this water could potentially be backed into upstream storage. This would then be a new water supply available for downstream users. Even if there is no opportunity to back this water in storage, the reduced diversions potentially assist with downstream water quality. The reduced diversions also leave 10,000 to 50,000 ac-ft of water in the Feather River between Western Canal's point of diversion from the Thermalito Afterbay to the point where the tailwater would have returned to the system downstream.

Depending on the outcome of other Phase 8 projects, the reduced diversions may be available for intra-basin transfers.

3. Project Costs

The cost opinions shown, and any resulting conclusions on project financial or economic feasibility or funding requirements, have been prepared for guidance in project evaluation from the information available at the time of the estimate. It is normally expected that cost opinions of this type, an order-of-magnitude cost opinion, would be accurate within +50 to -30 percent. Project costs were developed at a conceptual level only, using data such as cost curves and comparisons with bid tabs and vendor quotes for similar projects. The costs were not based on detailed engineering design, site investigations, and other supporting information that would be required during subsequent evaluation efforts.

The final costs of the project and resulting feasibility will depend on actual labor and material costs, competitive market conditions, actual site conditions, final project scope, implementation schedule, continuity of personnel and engineering, and other variable factors. As a result, the final project costs will vary from the opinions presented here. Because of these factors, project feasibility, benefit/cost ratios, risks, and funding needs must be carefully reviewed prior to making specific financial decisions or establishing project budgets to help ensure proper project evaluation and adequate funding.

Table 16B-1 summarizes the estimated project costs.

TABLE 16B-1
Planning-level Project Costs
Western Canal Water District Tailwater Recovery System Feasibility Study

Task Number	Line Item	Costs ($)
1	Prepare and distribute RFP	5,000
2	Review responses to RFP	5,000
3	Prepare contract with consultant	2,000
4	Hold scoping meeting	5,000
5	Quarterly progress reports	10,000
6	Field investigation and data gathering	40,000
7	Initial draft report	18,000
8	Final draft report	10,000
9	Final report	10,000
	Contingency cost	20,000
	Total Cost	**125,000**

4. Environmental Issues

This project is primarily an exercise in data collection and analysis. No physical impacts are anticipated to occur as a result of the project, although the results of the project may lead to the development of future projects. It is anticipated that the appropriate level of environmental documentation for the project would be a Categorical Exclusion/Categorical Exemption, requiring very minimal effort.

A draft California Environmental Quality Act (CEQA) checklist was not prepared for this proposed project because no physical alterations to the environment would occur as a result of this proposed action.

5. Implementation Challenges

There is potential controversy over the issue of the availability of real water or the quality and transferability of this water in-basin.

6. Implementation Plan

Task 1—Prepare and distribute an RFP for the Western Canal Water District Tailwater Recovery System Feasibility Study. **45 days**

Task 2—Review responses to RFPs for the Western Canal Water District Tailwater Recovery System Feasibility Study. **30 days**

Task 3—Contract with qualified consulting firm for completion of the Western Canal Water District Tailwater Recovery System Feasibility Study. **7 days**

Task 4—Hold initial scoping meeting with Contractor delineating schedules, budgets, resources, alternatives, and expectations. **7 days**

Task 5—Prepare quarterly progress reports and submit to DWR beginning with the contract negotiations and continuing for the duration of the project. **Quarterly**

Task 6—Conduct field investigations and data gathering, including surveying, tailwater monitoring for quantity and quality, and cost and benefit assessment. **1 year**

Task 7—Complete a draft report for internal review. **60 days**

Task 8—Complete a draft final report and submit to the public and DWR for comments. **45 days**

Task 9—Complete a final report and submit to DWR. **45 days**