

## II. EXECUTIVE SUMMARY

**PROJECT TITLE:** Lower Clear Creek Floodway Restoration Project  
**PROJECT APPLICANT:** Western Shasta Resource Conservation District

**PROJECT DESCRIPTION AND PRIMARY OBJECTIVES:** Lower Clear Creek, located in the North Sacramento Valley Ecological Zone, offers one of the best opportunities for river ecosystem restoration to support anadromous fish populations of all Central Valley tributaries. This proposal outlines a strategy for restoring 2.9 miles of floodplain and riverine aquatic habitats in two locations on lower Clear Creek (Figures 1 and 2). Historic instream aggregate extraction in a 1.9 mile reach (Mined Reach) removed natural point bars, floodplains, and riparian vegetation, leaving a multi-channeled, unconfined floodway with numerous ecological problems. The remaining one mile (Reading Bar Reach) is covered with dredger tailings, which confine the channel and prevent a functional floodplain from forming. The Clear Creek Technical Work Group has identified the Mined Reach as a significant stressor to ecological health and anadromous fish production in lower Clear Creek, including spring-run, fall-run, and late fall-run chinook salmon (*Oncorhynchus tshawytscha*), and steelhead (*Oncorhynchus mykiss*) populations. Therefore, this reach is a top priority restoration activity as identified in the fisheries restoration element of the CRMP plan to restore river ecosystem health and robust salmonid populations. During restoration, dredger material removed from the Reading Bar Reach for channel and floodplain reconstruction at the Mined Reach will restore a functional floodplain at the Reading borrow site, restoring two sites simultaneously. Objectives of the Lower Clear Creek Floodplain Restoration Project are:

- Reverse channel degradation caused by historic aggregate extraction in the Mined Reach by reconstructing a properly sized bankfull channel and floodplain;
- Restore the ability of the channel to route coarse sediment downstream and deposit fine sediment on floodplain surfaces;
- Restore native riparian vegetation on floodplain and terrace surfaces by focusing on species that provide canopy structure and removing competing exotic species;
- Reduce salmonid stranding and mortality in floodplain extraction pits;
- Provide improved habitat conditions for native fish and wildlife species including priority salmonid species of central concern to CALFED, CVPIA, and AFRP programs;

**APPROACH/TASKS/SCHEDULE:** This restoration project will restore floodway function and morphology by recreating a bankfull channel, functional floodplain, gravel supply, and native riparian vegetation. The project is logically divided into the following four phases (Figures 4-7), with restoration of an upstream borrow site conducted concurrently with all phases (Figure 3). Phase 1 (FY1998) is the inaugural phase that will begin reducing juvenile and adult stranding at the Mined Reach and create and revegetate a functional floodplain at the Reading Bar Reach site. Phase 2 (FY 1998-99) is the largest of the phases, and will restore functional floodplains and reduce salmonid stranding at Mined Reach by filling aggregate extraction pits with imported dredger tailings to elevations that inundate at contemporary bankfull discharge. Functional floodplains and off-channel wetlands will be restored and revegetated at both reaches. Phase 3 (FY 1999-2000) will focus on reconstructing and raising the bankfull channel above bedrock and hard-pan. Functional floodplains and off-channel wetlands will again be created at both Reaches, and revegetated with native riparian species.

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Phase 4 (FY 2000-2001) will restore flow into a section of historical channel that had been diverted by instream aggregate activity. Excavated bars and floodplains will be restored and revegetated with native riparian vegetation, and functional floodplains and off-channel wetlands will continue to be created at the Reading Bar Reach borrow site.

**JUSTIFICATION FOR PROJECT AND FUNDING BY CALFED:** Lower Clear Creek alteration has primarily resulted from gold dredging and instream aggregate extraction. Funding this project will rehabilitate the two sites where alteration has been most extensive, and combined with Saeltzer Dam removal, will complete all large-scale channel reconstruction needs on Clear Creek. The project promotes the CALFED goal of improving and increasing aquatic and terrestrial habitats and improving ecological functions by addressing several ecosystem elements identified in the ERPP, including ecological processes (natural sediment supply, stream meander, floodplain processes), riparian and riverine aquatic habitats, and priority species including spring-run, fall-run, and late fall-run chinook salmon, and steelhead. The project will provide direct benefit to those and other species, and to the ecological recovery of Clear Creek and the North Sacramento Valley Ecological Zone. Phase 1 is being funded by CVPIA [Section 3406(b)(12)], in coordination with the Coordinated Resource Management Planning group (CRMP), the Technical Work Group, USBR and BLM. Because restoration will occur at both the reconstruction site and borrow site, the project is extremely cost-effective. Pending CVPIA funding for Phase 2 implementation will provide significant cost sharing to CALFED funding.

**BUDGET COSTS AND THIRD PARTY IMPACTS:** The estimated total cost of Phase 2 is \$4,059,596. Of this total, \$3,559,596 is requested from CALFED, and \$500,000 will be provided by CVPIA pending funding approval. Estimated total costs for Phase 3 and Phase 4 are \$1,380,231 and \$1,043,661, respectively. This project is being implemented under the auspices of the lower Clear Creek Technical Work Group and CRMP group, which should avoid any potential third party impacts. All phases, including restoration of the borrow site, are or will soon be on public land, which will further reduce any likelihood of third party impacts.

**APPLICANT QUALIFICATIONS:** This project will be implemented under the direction of the Western Shasta Resource Conservation District, which has been implementing wildlife and fisheries restoration projects, erosion control projects, fuels reduction projects, and coordinated resource planning projects in Shasta County since 1957. In 1997 and 1998, the RCD has implemented numerous projects on lower Clear Creek, including spawning gravel introduction, a watershed analysis, and erosion control projects.

**MONITORING AND DATA EVALUATION:** This project will develop a project-specific monitoring plan to evaluate whether geomorphic, biological, and riparian restoration objectives are being met, and will use monitoring results to improve future restoration phases.

**LOCAL SUPPORT/COORDINATION WITH OTHER PROGRAMS/COMPATIBILITY WITH CALFED OBJECTIVES:** This restoration project will coordinate closely with several on-going local, State, and Federal programs, including the Lower Clear Creek Coordinated Resource Management Planning (CRMP) group, the Lower Clear Creek Technical Work Group, the CVPIA-AFRP, and Comprehensive Assessment & Monitoring Program (CAMP).