II. EXECUTIVE SUMMARY

YUBA TOOLS

A TOOLBOX INVESTIGATION OF WATERSHED MANAGEMENT TECHNIQUES AVAILABLE FOR ENHANCING FLOOD PROTECTION IN THE YUBA WATERSHED [YUBA TOOLS PROJECT]

The most effective management of the flood plains of the major rivers may not be a primarily "structural approach" of building levees and dams, but rather a combination of structural and nonstructural approaches that considers the many interrelated benefits to society offered by river systems.

-- Army Corps of Engineers
excerpted from *Sacramento and San Joaquin River Basins Comprehensive Study Newsletter, Issue 1*

PROJECT DESCRIPTION/ECOLOGICAL OBJECTIVES

Residents living in the floodplain of the lower Yuba River watershed are threatened annually with high water events. Over time, these events have caused substantial devastation and loss of life and property. This project proposes an investigation of various non-dam watershed management techniques to enhance flood protection while maintaining or improving natural processes, habitat and populations of high priority at-risk species, including chinook salmon and steelhead.

The project team proposes establishing an 18-month-long stakeholder-based collaborative process to identify and evaluate flood control alternatives for the Yuba River watershed, with the goal of developing a suite of effective structural and non-structural measures that balance ecological and human demands on Yuba River resources. A steering committee of representatives from existing watershed coalition groups and other interested stakeholders will be established as part of the project. This steering committee will work with a project coordinator and technical team to evaluate various flood control measures, their flood control and ecosystem benefits, and any potential impacts on river processes, habitat or species. This analysis will form the basis for recommendations for implementation.

With more meaningful stakeholder involvement, this collaborative study will provide educational opportunities as well as experimental tools to increase the public's understanding of floodplain management and restoration actions. In addition, the project augments the habitat restoration and water quality improvement work being undertaken by watershed coalition groups established through existing CalFed- and Proposition 204-funded projects in the upper and lower Yuba watershed.

COMPATIBILITY WITH CALFED OBJECTIVES AND FUNDING GOALS

The Yuba River watershed drains approximately 1,300 square miles of the western Sierra Nevada slope and includes portions of Sierra, Placer, Yuba and Nevada counties. Because the Yuba supports highly valued populations of steelhead trout and spring- and fall-run chinook salmon, as well as other anadromous and resident fish communities, it is considered "one of the most important Ecological Management Units in the Feather River/Sutter Basin Ecological Management Zone," according to CalFed's 2/99 Revised Draft of the *Ecosystem Restoration Program Plan*, Vol. II (p. 281).

To protect and enhance habitat for these target species, the YUBA TOOLS project focuses on evaluating ecologically sustainable, non-dam flood control alternatives. The project team will work collaboratively with existing watershed-based coalitions, established through previously funded CalFed and Proposition 204 projects, whose memberships include representatives from agencies and organizations with specific interests in the Yuba watershed (see Section VII and Appendices for full list of collaborators).

The project will investigate watershed management and flood control techniques that help achieve overall CalFed objectives, including:

1.) improving and increasing aquatic and terrestrial habitats and ecological functions to support sustainable populations of diverse and valuable plant and animal species;
2.) providing good water quality for all beneficial uses; and
3.) reducing the risk to land use and associated economic activities, water supply, infrastructure, and the ecosystem from catastrophic failure of levees.

Specific ERPP goals will be addressed, as well, including: improving stream-channel and riparian habitat, maintaining gravel recruitment and sediment transport processes, and preserving river meander zones and active floodplains.

These techniques [see box] have been shown to be effective elsewhere; but they need to be studied specifically in relation to what combination might best serve the Yuba watershed. Such a study will help improve our understanding of hydrologic, geomorphic and ecological relationships and assist in the evaluation of ecologically based alternative water management strategies, as called for under the Habitat Restoration Topic Area and General Bay-Delta Focused Actions identified by the CalFed Integration Panel (2/99 PSP, p. 18-19).

POTENTIAL TOOLS TO MINIMIZE PEAK FLOWS

- ❑ meadow restoration/riparian improvements
- ❑ culvert diversion, wet meadow/recharge basin restoration and other upstream watershed management tools
- ❑ reoperation of existing facilities
- ❑ relocation of facilities out of the floodplain
- ❑ flood bypasses
- ❑ floodplain conservation easements
- ❑ levee raises or setbacks
- ❑ stream meander improvements
- ❑ others... to be determined through public outreach

ADVERSE AND THIRD PARTY IMPACTS

In its own flood control study process, Yuba County Water Agency rejected most non-dam flood control options in favor of more structural approaches. Each of YCWA's 12 preliminary alternatives includes at least one major new dam or reservoir in the Yuba watershed – and in some cases, two or three. These projects conflict with CalFed's vision for more natural ecological processes; improved riparian, wetland and riverine habitat; reduction of stressors, such as dams, in the watershed; and increased populations of target species like salmon and steelhead. The process used to develop these alternatives was neither collaborative nor consensus-based and failed even to consider ecological criteria in the initial assessment.

Residents in the upper watershed, therefore, find themselves the target of large dam proposals, which, in turn, threaten their homes and property with condemnation and removal. As a result, the dialogue between lower and upper Yuba watershed residents, agencies and organizations continues to grow more distant, emotionally charged and unproductive. To counter this atmosphere of conflict and discord, the project team offers the YUBA TOOLS proposal to bring stakeholders from the upper and lower watershed together to craft a regional solution that meets the needs of all watershed residents.

APPLICANT QUALIFICATIONS AND LOCAL SUPPORT

The Yuba Watershed Council – a 21-signatory collaborative process successful in attracting $1.7 million in watershed grants -- collaborated in the development of this proposal and unanimously endorsed Yuba Tools on April 7, 1999. The Nevada County Board of Supervisors lended official endorsement in Resolution 99168 on April 13, 1999. A total of 45 local, state and federal entities have agreed to serve as participants and collaborators. The proposal has also been presented to the Camptonville Proposition 204 Committee and the Lower Yuba Technical Working Group, organizations we will work closely with to generate public participation and stakeholder input. The proposal has also been presented to the Sacramento Bee, the Marysville Appeal Democrat and the Grass Valley Union.

SYRCL, the South Yuba River Citizens League, will serve as the lead for the YUBA TOOLS project. SYRCL is a community-based 501c3 educational organization in its 16th year of operation. SYRCL has close working relationships with local, state and federal agencies and is a leader in watershed issues in both the upper and lower Yuba watershed. SYRCL is joined by Rachel Kamman, of Kamman Hydrology, who is a registered civil engineer with broad experience in surface and sub-surface hydrology.

PROJECT BENEFITS

- ❑ A collaborative ***process*** to evaluate sustainable flood protection tools;
- ❑ A final ***product*** identifying goals and priorities for flood control and habitat enhancement and outlines agreed-upon actions and implementation measures.

WATERSHED BENEFITS

- ❑ Protection of life and property from peak flow flooding;
- ❑ Protection of property owners from condemnation by dam development;
- ❑ Groundwater recharge;
- ❑ Recovery of at-risk species;
- ❑ Rehabilitation of natural processes
- ❑ Restoration of functional habitats.

PROJECT TIMELINE/DELIVERABLES

Phase I includes hiring the project coordinator and technical experts, establishing the stakeholder steering committee and identifying potential watershed management/flood control tools for study. Phase II includes preliminary study and technical

analysis to determine ecological benefits, potential impacts and implementation options. Phase III will present the toolbox information to stakeholder groups for further input. Phase IV will produce the final report outlining and prioritizing objectives and options based on this input.

FUNDING REQUESTED FOR PHASES I-IV: $216,150

III. PROJECT DESCRIPTION

PROPOSED SCOPE OF WORK

The proposed project is the first step toward developing a consensus-based region-wide flood management solution for the Yuba River watershed. Flood control management efforts to date have revolved almost exclusively around dams and other structural components, to the exclusion of more ecologically sensitive, non-dam alternatives. We believe there is interest on the part of stakeholders in the upper and lower watershed to collaboratively address flood control issues with the goal of achieving needed protection while protecting and enhancing habitat and processes that support at-risk species like chinook salmon and steelhead trout.

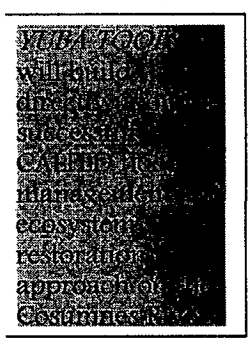
Project Approach:

As noted in Issue 1 of the *Sacramento and San Joaquin River Basins Comprehensive Study Newsletter*, the Sacramento and San Joaquin river systems have been modified and managed to provide for water supply, transportation, irrigation, recreation, flood control and other societal needs. But over time, society's priorities have changed, along with our understanding of the need for more effective, long-term approaches to flood control and ecosystem restoration.

This project proposes to work with watershed stakeholders and technical experts to identify and analyze ecologically sustainable flood management alternatives for the Yuba watershed. We are particularly interested in looking at alternatives that can achieve needed protection while preserving existing and potential future salmon and steelhead habitat values as well as broader ecological benefits offered by the river.

> "To meet the changing needs of the Central Valley, the flood management system must adapt to prepare for future population increases in California and ***include approaches that take into account the many interrelated benefits offered by the river system.***" [emphasis added; *Comprehensive Study Newsletter*, Issue 1]

Current flood control studies have failed to identify numerous non-dam alternatives for flood control and ecosystem restoration being successfully undertaken in other California watersheds. Tools such as upstream watershed management prescriptions, reoperation of existing facilities, relocation of facilities outside of the floodplain, purchase of floodplain easements, trans-basin diversions, flood bypasses, levee raises and set-backs, and dredging have been overlooked. Local capacity for creation of a River Conservancy is constrained; Yuba Tools will address this constraint.



This 18-month-long YUBA TOOLS project will give stakeholders in the Yuba a *process* for evaluating alternative methods of flood control protection and a *product* (the final report) that 1.) identifies objectives and priorities for flood control and habitat enhancement, 2.) outlines agreed-upon actions and implementation plans to achieve flood control and habitat enhancement benefits, 3.) serves as a tool for subsequent project phases, including cumulative impact analysis and implementation funding, and 4.) maintains or improves watershed health and the health of high priority, at-risk species, including chinook salmon and steelhead trout. The key to this process is the involvement of stakeholders in both the identification of preferred techniques and the development of an acceptable approach for implementing these watershed enhancement and flood control tools.

Task List/Deliverables /Schedule:

Phase I of the project (3 months) includes hiring the project coordinator and technical experts, establishing the stakeholder steering committee and seeking public input to identify potential watershed management/flood control tools for study. Phase II (6 months) includes research and technical analysis

of each alternative to determine ecological benefits, potential impacts and implementation options. Phase III (6 months) will present the toolbox information to stakeholder groups for input and prioritization. Phase IV (3 months) will produce the final report outlining the recommended set of ecosystem objectives and flood control options based on stakeholder input. Subsequent phases will include more in-depth cumulative analysis and potential implementation funding for the recommended actions. SYRCL is currently seeking funding for Phases I – IV. Subsequent phases will be funded separately.

Project Implementation Chart

TASK	SCHEDULE	LEAD	DELIVERABLE
Phase I			
Finalize contract w/CalFed	Month 1	SYRCL	Signed Contract
Establish Stakeholder Steering Comm	Month 1	SYRCL	Committee
Develop RFP & Hire Project Coordinator	Month 2	Steering Comm	Project Coordinator
Identify & hire technical experts needed	Month 3	Strg Comm/PC	Technical Team
Scope alternative tools for evaluation, including public scoping meetings	Month 4-6	Strg Comm/PC	List of alternatives
Phase II			
Analyze benefits/impacts & implementation options	Month 4-9	Strg Comm/Tech	Tool Box analysis
Phase III			
Seek individual input on tool box alternatives	Month 7-12	Proj Coord/Tech	Comments on alternatives
Seek input from stakeholder groups in watershed	Month 7-12	Proj Coord/Tech	Comments on alternatives
Phase IV			
Revise alternatives based on Phase III input	Month 13-15	Proj Coord/Tech	Revised draft
Finalize study and distribute	Month 16-18	Proj Coord	Final Study Report
Subsequent Phases			
Complete additional technical analysis of recommended actions	*Post-project*	*To be determined*	*Not applicable*
Seek funding for implementing actions recommended in Phase IV final report	*Post-project*	*To be determined*	*Not applicable*
Implement actions	*Post-project*	*To be determined*	*Not applicable*
Monitor actions	*Post-project*	*To be determined*	*Not applicable*
Ongoing Tasks			
Project Management	Months 1-18	SYRCL	
General public outreach	Months 2-18	Proj Coord	

SYRCL is only seeking funding for Phases I-IV at this time. Since the YUBA TOOLS project is based on bringing a combination of technical expertise and collaborative decision-making to bear on watershed and flood control issues in the upper and lower watershed, each of the four phases is critical to the overall success of the project. Additional phases will be pursued separately, once the YUBA TOOLS final report is complete.

LOCATION/GEOGRAPHIC BOUNDARIES:

This project focuses on the upper and lower Yuba River watershed. The Yuba River watershed drains approximately 1,300 square miles of the western Sierra Nevada slope and includes portions of Sierra, Placer, Yuba and Nevada counties. As a tributary to the Feather River, which, in turn, feeds into the Sacramento River, the Yuba is considered part of the Feather River/Sutter Basin Ecological Management Zone.

California Hydrologic Map Unit Numbers:

- 18020107 (Lower Yuba)
- 18020125 (Upper Yuba).