

**PROPOSED SUPPLEMENTAL ENVIRONMENTAL PROJECT TO ADDRESS ADMINISTRATIVE CIVIL LIABILITY COMPLAINTS**

**PROJECT TITLE:** Big Chico Creek Watershed Citizen Monitoring Program  
(The Stream Team)

**GEOGRAPHIC AREA OF INTEREST:** Butte County

**NAME OF RESPONSIBLE ENTITY:** California Urban Streams Alliance – The Stream Team

**ORGANIZATIONAL DESCRIPTION AND BACKGROUND:** California Urban Streams Alliance-The Stream Team (The Stream Team) continues to take a leadership role in providing opportunities for citizens to participate in water resource management efforts. Initiated in 2004 through a grant from CALFED, they have continued to expand their efforts through seven subsequent resource agency grants (>\$400K). Although initially tucked under the non-profit umbrella of a fiscal sponsor (Big Chico Creek Watershed Alliance), they have provided all administrative and project responsibilities associated with their work including gaining grant support. Incorporated in 2009, they received nonprofit status in 2010, and have facilitated over 30,000 hours of community service, nine consecutive years of citizen monitoring through their Big Chico Creek Watershed Citizen Monitoring Program, and generated eight years of baseline water quality data for the Big Chico Creek Watershed. They also provide watershed and storm water education for 300 students per year, conduct pre and post photo point and water quality monitoring to document site conditions for two large stream-side restoration projects constructed in the Chico area (Verbena Fields, and Bidwell Avenue), assist with Bidwell Park restoration projects, partner with the California Safe-to-Swim Program, Surface Water Ambient Monitoring Program (SWAMP), SWRCB Clean Water Team, and storm water education programs. In addition, The Stream Team has managed two previous Supplemental Environmental Projects on Big Chico Creek (as a subcontractor).

**ESTIMATED PROJECT COST:** \$75,000 (See Attachment A for detailed cost breakdown)

**CONTACT INFORMATION:**

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**BRIEF PROJECT DESCRIPTION**

**GOALS:** The goal of The Stream Team effort is to leverage collaborative resources and local knowledge to gain efficiency in implementing watershed baseline water quality monitoring and raise public awareness of storm water pollution prevention measures through effective watershed stewardship.

**OBJECTIVES:** 1. Demonstrate the benefits of leveraging citizen involvement and knowledge to accomplish low-cost watershed assessments and restoration. 2. Demonstrate the role that collaborative watershed stewardship actions can play in helping to achieve federal, state, and local resource management objectives.

The proposed \$75K budget reflects a full scope of work for the entire SEP project, which will monitor and assess water quality in Butte county through a multi pronged approach which engages community members in citizen monitoring efforts, compiles and analyzes data collected, and provides information and education to promote understanding and community action related to watershed health. The following watersheds will be assessed: Big Chico Creek, Little Chico Creek, and other tributaries to the Sacramento River within Butte county that have shown an interest in establishing citizen monitoring (Butte Creek, Feather River), and/or where

water quality data is needed for prioritizing resource management decisions. This full scope of work can also be tailored on a per monitoring site(s) basis, with the addition of some up front costs that would be incurred even with the scaling back of the project.

Project monitoring will implement and extend a successful citizen-monitoring program: Big Chico Creek Watershed Citizen Monitoring Program (The Stream Team) of which the project proponent has administered for eight consecutive years working closely with the City of Chico, State Water Resources Control Board, Department of Fish and Game, and other local partners. The project will continue to be managed and guided with the leadership of expert staff. A Technical Advisory Committee (TAC) with both state level and relevant local expertise and content knowledge, will provide recommendations for reviewing and updating the existing Monitoring Plan (MP) and Quality Assurance Project Plan (QAPP).

Volunteers and Stream Teams will be recruited and coordinated throughout Butte County to participate in the monitoring activities. Training will be provided for identified Teams using an updated Volunteer Monitoring Manual and will include standard methods and sampling protocols, and correct use of equipment. An on-line training module will be updated to provide more in depth background information and significance of water quality parameters being collected to improve citizen understanding and augment hands-on volunteer training events. Training ensures data quality objectives are met and that data integrity is consistent with the previous years of data collected, consistent with the State's Surface Water Ambient Monitoring Program (SWAMP), and useful for the State's Safe-To-Swim Program.

Utilizing a schedule and parameters outlined in the MP, monitoring activities will be conducted at a minimum of 10 monitoring stations. Multiple surveys will collect data to track chemical, physical, and biological parameters to assess water condition. Additionally, continuous water temperature and storm event monitoring will be conducted. Field and Laboratory testing will also be consistent with an updated MP and QAPP.

Stream Teams currently meet regularly to conduct ongoing water monitoring efforts during May through October, collecting relevant project data. Additional monitoring events are scheduled according to the MP and include bioassessment, storm event and post restoration site surveys. The Stream Team has most of the existing water testing equipment available for use; however some updated monitoring equipment kits and supplies (e.g. batteries and calibration fluids) will be required. Stream Teams are part of the project educational outreach that provides training for volunteers, teachers, and students, who conduct the water quality monitoring. Teachers and students from at least three local schools (300 students) participate in monitoring activities along with citizen volunteers (400/year on average).

The Stream Team additionally proposes to plan and facilitate four (4) public meetings specifically to inform the public of the Citizen Monitoring program results, trends, and effectiveness. These meetings will be organized and facilitated by The Stream Team's Watershed Coordinator in different venues and formats to broaden the awareness and support for Citizen Monitoring program efforts and highlight community actions to improve water quality.

Electronic information distribution will be supported through the California Urban Streams Alliance website. Project data reports, maps, monitoring schedules and educational information will be posted quarterly. This electronic information will be highlighted in the four public meetings so that the public knows where to further seek water quality information on a consistent basis.

## **WATER BODY ADDRESSED**

The Big Chico Creek watershed is located in a region that includes the interface between the Sierra Nevada Range to the south, and the remnant volcanic flows of the Cascade Range to the north. Headwaters originate from cold-water springs on Colby Mountain and flow 45 miles to its confluence with the Sacramento River. Watershed elevation ranges from about 120 feet at the mouth to 6000 feet on Colby Mountain. The watershed also encompasses three smaller sub-drainages to the north: Sycamore, Mud, and Rock. The underlying geology

includes areas where the creek cuts through Tuscan layers important in the recharge of the Lower Tuscan aquifer, which is being explored for a regional conjunctive use project.

The Big Chico Creek watershed has been modified for flood control, suffers impacts from urban population increases, and has lost important riparian habitat in its agricultural areas, yet still supports spring run salmon spawning and rearing and fall run rearing near the Sacramento River, as well as western pond turtle, foothill yellow-legged frog and other sensitive species.

The watershed also includes urban, suburban, rural residential, orchard, rangeland, and forestry land uses. These diverse and localized impacts of land use are sometimes difficult to detect and information collected over a long temporal scale is important to determine variations due to land use practices and other long-term trends. Citizen monitoring groups are perfect for collecting information needed to determine long-term trends in stream habitat quality as a function of diverse land use.

### **SEP Criteria**

(a) Project is not an action otherwise required by any discharger, or proposed mitigation to offset the impacts of a discharger's project.

(b) Project directly benefits surface water quality and beneficial uses of waters of the State by providing: 1) baseline water quality data to track cumulative effects of land use practices and natural causes over time; 2) watershed assessments through citizen monitoring facilitation and coordination; 3) watershed restoration and habitat enhancements through school-based education; 4) public outreach and education linked with water quality assessment findings to increase public understanding of water pollution prevention measures and human versus natural causes; 5) education and outreach to encourage effective watershed stewardship; and 6) community forums, workshops, events to facilitate sharing of information and promote collaborations to raise public awareness of water quality issues.

(c) Project does not directly benefit the State Water Board or Regional Water Board function or staff.

(d) See Attachment B for schedule of activities and deliverables.

(e) Third party oversight if required will be provided at a cost of 5% of the total project cost (\$3,571).

(f) SEP funding is not duplicative of any other potential funding sources for this project.

(g) In-kind Project Contributions - \$20K

The Stream Team (equipment and supplies - \$10K)

Watersheds.us (GIS technical services, maps – \$3K)

SWRCB/DFG/Safe-to-Swim (training, supplies and equipment - \$7K)

(h) Key staff and qualifications are shown in Attachment C.

### **PUBLIC SUPPORT**

Interest and participation in The Stream Team has increased annually since the program began in 2004. Collaborative monitoring conducted by multiple individuals and organizations, with different interests, and forms of expertise provide an important opportunity for building a shared ecological understanding among diverse participants, and awareness of the interdependence of humans and natural resources. Through these efforts, internal trust among participants has been enhanced, leading to communications of monitoring findings to a broader community, increasing the likelihood that the monitoring data generated will be used to make informed decisions for protecting watershed health.

## Citizen Monitoring Program Participation Levels: 2005-2010

Number of Hours and Participants						
Citizen Monitor Category	2005-2008		2009		2010	
	Hours	Participant	Hours	Participants	Hours	Participants
Monitoring Program Members	4,192	168	1,498	197	2,620	524
CUSD Students and Teachers	7,423	893	3,306	776	953	335
CSU Chico Students/Interns	873	127	637	72	119	357
TAC members	360	15	200	10	80	6
Others	532	128	327	82	115	115
<b>Total</b>	<b>13,380</b>	<b>1,331</b>	<b>5,968</b>	<b>1,137</b>	<b>4,125</b>	<b>1,108</b>

## Citizen Monitoring Program Events: 2005-2010

Total Number of Outreach / Training / Monitoring Events			
	2005-2008	2009	2010
Outreach	156	38	40
Training	120	36	34
Monitoring	100	30	53
<b>Total Events</b>	<b>376</b>	<b>104</b>	<b>127</b>

## Project Support

The following organizations regularly partner with and support The Stream Team efforts:

- Watersheds.us (GIS mapping and technical oversight)
- Butte Environmental Council (Web announcement, news articles, Endangered Species Fair)
- Big Chico Creek Watershed Alliance (Email announcements, restoration and collaborative projects)
- Big Chico Creek Nature Center (Meeting and laboratory space for public events)
- Friends of Bidwell Park (Calendar announcements, invasive species removal and restoration maintenance)
- CSU Chico Sustainability program/Big Chico Creek Ecological Reserve (Technical oversight)
- Bidwell Park Adopt-Picnic-Site Program (Collaborative restoration, water quality testing, environmental education)
- Butte County RCD (Collaborative watershed education and outreach)
- SWRCB Clean Water Team (Technical oversight, equipment, training, and quality assurance)
- RWQCB (Technical oversight, quality assurance, data analysis feedback)
- California State Safe-to-Swim Program (Technical oversight, bacteria supplies, data sharing)
- City of Chico Storm Water Program (Web postings, outreach, storm drain marking collaborations)
- Department of Fish and Game (Bioassessment training, macroinvertebrate sample analysis)
- Sierra Nevada Alliance (Collaborations with Sierra Nevada-based citizen monitoring efforts, outreach)
- NSVIRWMP (TAC participation promoting use of citizen data and public involvement)
- Local Schools, Students, Teachers, and citizens (Water quality surveys, restoration and maintenance)

## **Project Success Measures**

Project success will be determined by measuring the following desired outcomes:

- Increased number of citizen monitoring participants (citizen, student, community organization teams)
- Monitoring conducted at a minimum of 10 watershed sites according to MP and QAPP
- Qualitative analysis of pre and post knowledge surveys
- Increased collaboration with local community organizations to align messaging to better inform the public of water quality trends and issues

**ATTACHMENT A**

**PROJECT BUDGET**

<b>REVENUE</b>		<b>\$ 75,000</b>
<b>EXPENSES</b>		
<b>I.</b>	<b>Personnel Costs</b>	
a.	California Urban Streams Alliance (CUSA)	\$ 14,500
	Subtotal	\$ 14,500
b.	Benefits	\$ 5,299
	<b>Total Personnel Costs</b>	<b>\$ 19,799</b>
<b>II. Operating Expenses</b>		
a.	Supplies, Telephone, Copying, Postage	\$ 600
b.	Travel and Conference	\$ 600
d.	Operating Expenses, accounting, insurance, etc	\$ 2,500
g	Meeting Expenses, Equipment and Facility rental	\$ 1,200
e	Sub Contractors & Project Operations incl.	\$ 32,680
	Sub Contractor Operating Expenses	\$ 6,550
	Monitoring Equipment & Lab Cost	\$ 7,500
	<b>Total Operating Expenses</b>	<b>\$ 51,630</b>
	<b>Subtotal Personnel &amp; Operate Exp.</b>	<b>\$ 71,429</b>
	<b>Overhead at 5%</b>	<b>\$ 3,571</b>
	<b>In-Kind Contributions</b>	<b>\$ 20,000</b>
	<b>Total Project Costs</b>	<b>\$ 95,000</b>
	<b>TOTAL BUDGET REQUESTED</b>	<b>\$ 75,000</b>

**\*This budget reflects a full scope of work as described. Partial funding support could be applied to reduce the above budget to support monitoring on a per site(s) basis (\$3-5K depending on lab costs for that particular site), with the addition of some upfront costs incurred when scaling back the project).**

## ATTACHMENT B

### PROJECT TASKS, ACTIVITIES AND DELEVERALBLES

<b>TASKS AND ACTIVITIES</b>	<b>Deliverable</b>	<b>Due Date</b>
Task 1. Monitoring Plan and QAPP		
1.1 Update Monitoring Plan and QAPP	MP, QAPP	1 <sup>st</sup> Quarter
1.2 Landowner Access Agreements	Signed Agreements	1 <sup>st</sup> Quarter
1.3 Technical Advisory Committee	Participants, meeting notes	Quarterly
Task 2. Training		
2.1 Update Volunteer Web Training Module	Updated Web Training Module	2 <sup>nd</sup> Quarter
2.2 Develop training schedules	Participant list, schedule	Quarterly
2.3 Recruit participants and conduct trainings	Participant list, schedule	Quarterly
Task 3. Watershed Monitoring		
3.1 Update and maintain equipment/supplies	Calibration records, equipment list	Quarterly
3.2 Conduct Monitoring	Participation list, schedule	Quarterly
3.3 Analyze data and update database	Excel data files	Quarterly
3.4 Prepare Annual Data Report	Draft and Final Data Report	4 <sup>th</sup> Quarter
Task 4. Community Outreach and Partnership Development		
4.1 Develop outreach materials	Flyers, posters, announcements, articles	Quarterly
4.2 Website update and maps	Website updates, maps	Quarterly
4.3 Community collaboration to highlight project: Endangered Species Fair, Volunteer Recognition Picnic	Schedule, event description, list of participants	4 <sup>th</sup> Quarter
4.4 Coordinate and host four Citizen Monitoring and water quality specific meetings.	Four (4) public events	4 <sup>th</sup> Quarter
Task 5. Project Management		
5.1 Prepare Project Progress Reports/Invoices	Progress Reports, Invoices	Quarterly
5.2 Prepare Project Final Report	Final Report	4 <sup>th</sup> Quarter

## ATTACHMENT C

### *Key Staff and qualifications*

**Timmarie Hamill**, will serve as the Project Manager and be responsible for day-to-day project management. Professionally, Timmarie holds a B.S. degree in Biology and a Secondary Math and Science Teaching Credential from California State University at Chico. She has worked as a DWR biologist, and private consultant, conducting watershed assessments, and assisting with restoration projects for over 20 years, including associated data analysis and reporting. Most recently, she has administered grant projects specifically focused on promoting citizen monitoring efforts.

**Heather Senske** will serve as Contract Manager, and provide administrative services including subcontracting, and budgeting, to assure contract is completed within budget, on schedule, and in accordance with approved procedures, applicable laws, and regulations. Professionally, Heather administers the Child Development Programs and Services with the Butte County Office of Education.

**Chuck Lungren** will serve as Web Master, and be responsible for updating and maintaining website information distribution to highlight water quality data findings and project outcomes. Chuck has 30 years of programming, technical writing and graphic design experience. He has developed and marketed software products, written hundreds of articles, columns and subscription-based email newsletters, and has created and maintained numerous websites.