

Project Details 2009

Boulder Creek Watershed Initiative

Water Quality Stream Teams

Scope of Work: to create two citizen volunteer water quality monitoring Stream Teams and to purchase four sets of water quality sampling equipment.

Built upon previous success for Stream Team development, BCWI will be expanding our reach to engage citizens in water quality monitoring activities in additional areas throughout the watershed. In 2008, five Stream Teams have been developed and these Stream Teams are now sharing three sets of water quality equipment. With the additional development of two Stream Teams and the purchase of four sets of equipment, all seven Stream Teams will soon be furnished with their own set of water quality equipment.

BCWI has been collaborating with the Keep It Clean Partnership (KICP), the City of Boulder (COB) and the United States Geological Survey (USGS) for this project. KICP has been administering the Stream Team program and is collaborating with BCWI in agency program planning and volunteer recruitment, training and management and, data management. USGS has been supplying technical support. COB has been providing staff time and technical support.

Data collected will be available on the Stream Team web site located at keepitcleanpartnership.org and at basin.org/bcwi. The parameters currently being monitored are flow, temperature, pH, dissolved oxygen, conductivity, phosphate and nitrate. Parameters such as *e-coli* bacteria and emerging contaminants may be added and sampling and analysis performed by volunteers with advanced knowledge of water quality monitoring. In addition to water quality monitoring, BCWI will offer two advanced water quality training sessions to each Stream Team.

Fountain Creek Restoration Committee & the Pikes Peak Community Foundation

Fountain Creek - Shryver Park Reach Restoration Project

Summary of work: Shryver Pond currently suffers from low dissolved oxygen levels, elevated temperatures and poor water quality as a result of a poorly designed inlet structure on Fountain Creek. The inlet structure will be rebuilt to allow better regulation of inflow, improving the water quality and aquatic health of the pond. The pond will be further enhanced by dredging detritus and debris that has accumulated over time. Adjacent to Shryver Pond, Fountain Creek is in generally degraded condition. The log drop structure installed to create a diversion for the pond is a significant migration barrier to the resident brown trout in the reach, and has resulted in an over-widening of the channel at the diversion point. Pool habitat and cover for trout are generally poor, due to inadequate scour of the existing pools and lack of streamside riparian vegetation.

The restoration plan for this project is detailed in the document *Aquatic Assessment & Habitat Enhancement Plan, Fountain Creek and Shryver Pond, Shryver Park, City of Manitou Springs, CO* (Fin-Up, Inc, 2008) that has been submitted to the CWPf. The restoration effort will include elimination of the fish migration barrier, bank stabilization using toe-slope stabilization techniques and riparian plantings, and construction of in-stream habitat features, including cross vanes, J-Hook rock vanes, and rock

clusters to improve scour within newly created pool and pocket water habitats, increasing habitat complexity and cover for trout within the reach.

Colorado Storm Water Council

E. coli Assessment and Management Project (Phase II)

Summary of Work: The Colorado Stormwater Council will use the funds awarded to support the cooperative efforts of the Water Quality Forum's E. coli Work Group, continuing work begun in 2007. This scope of work describes both Phase I (2007-2008) and Phase II (2008-09) tasks for purposes of continuity. This work is being conducted because roughly 22 stream segments throughout Colorado are currently identified as "impaired" by elevated E. coli on Colorado's 303(d) list (+16 being monitored). Watershed groups, local governments, regional planning agencies, and the Water Quality Control Division are working to address this statewide issue. For these entities to successfully work towards restoration and/or realistic goal setting for watersheds designated as "impaired" by elevated E. coli, they need to be equipped with a sound understanding of E. coli sources, control methods, monitoring approaches to properly identify sources, and factors that affect E. coli viability. If these subjects are not properly understood, then effective, practical plans to manage and protect watersheds and address E. coli 303(d) listings cannot be developed.

Through the vision of participants in the Water Quality Forum, an E. coli Work Group has been formed to work collaboratively on a voluntary basis to address the multi-faceted issues associated with these E. coli issues. The participants in the Work Group are active in nearly ten different local watershed organizations that are facing E. coli 303(d) listings or concerns. Misconceptions regarding E. coli sources and control strategies are common. This poses challenges to watershed groups trying to identify and reduce sources of E. coli and/or set realistic goals for 303(d) listed streams. Local government and watershed group resources can be wasted on ineffective monitoring and source reduction strategies. A statewide approach or guidance to address E. coli issues has not been developed and is needed. The E. coli Work Group proposes to develop a sound base of technical information regarding E. coli and recommend approaches to identify and reduce E. coli sources, set realistic E. coli reduction (or management) goals, and conduct effective monitoring. The Work Group plans to build on lessons already learned in Colorado, as well as build upon national guidance and experiences. The project's work products, primarily in the form of a series of technical memoranda, will benefit locally based watershed groups, while laying a foundation for a consistent statewide approach and/or continued dialogue with those tasked with protecting the State's waters. The Work Group recognizes that it will not be able to address all of the challenging issues associated with elevated E. coli; however, the Work Group believes that this is a much-needed project to raise the bar on scientifically-based decision-making with regard to E. coli in Colorado.

Park County & Colorado Open Lands

Watershed Assessment

Summary of Work: The overarching goal of this project is to improve water quality and ecological condition in the upper South Platte River watershed. This goal will be accomplished by implementing the first 2 phases of the Watershed Assessment of River Stability and Sediment Supply (WARSSS) method

developed by the EPA and Dr. Dave Rosgen, published in 2006. This method is designed to “reveal significant, adverse influences of land uses on stream channel stability, sediment sources, and sediment yield that may affect the material beneficial uses of rivers and streams.¹” It is intended to be used for watershed planning, TMDL assessments for clean sediment non-point source pollution, and a stability analysis for river restoration.

Phase I (The Reconnaissance Level Assessment – RLA) involves compiling existing data about the condition of waterways, land uses and potential impacts to the watershed from research, aerial photography, historical photography and land use mapping. The goal of this phase is to identify sediment sources and channel stability problems linked to land and river management activities. In this process potential problem areas and reaches within a large watershed will be identified for a more detailed level of assessment.

Phase II (The Rapid Resource Inventory for Sediment and Stability Consequence –RRISSC) builds on the findings of Phase I. This phase is a more detailed screening which requires inventory of the type, location, nature and extent of potential sediment sources. These impacts are considered with the erosion potential of the landscape and channels. The result of this analysis is a risk rating for each sub-watershed or reach. Low risk reaches are not expected to produce high amounts of sediment and can be excluded from further assessment for this purpose. Moderate risk reaches are designated as low priority for restoration or land management changes, and high risk reaches are identified as high priority.

The identified high risk sub-watersheds and reaches will be considered for more detailed assessment by completing WARSSS phase III (Prediction Level Assessment – PLA)to quantify the amount of sediment contributed to the system, to define restoration or management projects, and to provide baseline data for monitoring the effectiveness of improvement efforts.

The information compiled by the study will be used to improve the effectiveness of restoration projects, land protection, and management directives by providing a summary of the of stream stability and sedimentation rates throughout the upper basin.

Coal Creek Watershed Coalition

Scope of Work: The CCWC will use the funds awarded to identify pollutant source areas and to determine the remediation actions appropriate for each source area. This grant will also be used to expand the outreach efforts of the organization. The funding requested is to be used in four major areas:

1. Individual Sewer Distribution System Evaluation – The project will resume in full in the spring and summer of 2009, with focus placed on locating all of the ISDS in the watershed and identifying individual sewer systems out of compliance with the new health codes. The first compliance issue to be corrected is a ‘back history’ check by the individual owner on any monitoring of the ISDS already conducted. These efforts can be conducted over the winter and early spring in 2009. CHRF funding for this project would also be used to analyze microbiological samples collected within the watershed. In-kind contributions will be provided by CCWC in the form labor donated to: collect water samples, complete field investigations, construct GIS mapping of leach fields, and process data. In-kind contributions will also come in the form of the EPA’s donated analysis of nutrient

samples collected with the microbiological samples being funded through this grant proposal.

2. Macroinvertebrate Assessments – Funding limitations in the past have reduced the level of sample processing and analysis available to the organization. CHRF funds will be used to conduct sample processing and analysis for 2008 data. Macro-invertebrate samples were collected from twelve sites in 2008.

3. Educational Signage and Tabletop Display – CHRF funding will be used to create educational signs throughout the watershed in major parking areas, trailheads, bridge crossings and other higher traffic areas. CCWC staff and volunteers will provide in-kind labor to design, obtain the necessary permits through the U.S. Forest Service, and install the signs. The Town of Crested Butte planning department will be included in design and placement considerations.

The CCWC also will use CHRF funds to extend its outreach program by creating a tabletop display to bring to conferences, events and other community presentations. With this display, we can convey our mission, goals, and accomplishments to the public with greater effectiveness. CHRF funding will be used to laminate the 36" x 48" poster in order to extend the life of the display and place it on an appropriate backboard.

4. AmeriCorps* Office of Surface Mining VISTA Support – CHRF funds will be used to provide a year of full-time service by an OSM/VISTA member. These VISTAs will work to build the capacity of the watershed group to create sustainability and conduct similar work tasks to the CCWC's VISTA. The VISTA member will assist with the other items funded by the CHRF.

Rocky Mountain Field Institute

Upper Ski Creek Watershed Erosion Control & Restoration Project (Phase 2)

Scope of Work: The *Upper Ski Creek Basin Erosion Control and Restoration Project-Phase 2* will stabilize and mitigate erosion and sedimentation impacts in the Ski Creek headwater area on Pikes Peak that has been severely affected by unprotected runoff discharged from the Pikes Peak Highway. This project represents the second and final phase of a multi-year project to completely stabilize the upper Ski Creek Basin. Over 1900' of the main Ski Creek channel will be delineated and stabilized with an additional 700' of braided channels closed and restored. The project will utilize engineered and bio-engineered structures in conjunction with vegetation prescriptions to stabilize and reduce bank erosion, improve habitat for aquatic life, and decrease sediment transport into the South Catamount Reservoir. Techniques to be applied in this project have proven effective in reducing sediment transport within the North Crystal Creek Basin and the upper reach of Ski Creek on Pikes Peak. A detailed monitoring and evaluation plan has been developed and will aid in designing future restoration plans. Completion of this project will advance the CWCB goal of conserving and protecting Colorado's water resources.