



HEADWATERS ALLIANCE
PO Box 518
CREEDE, CO 81130
719-588-2417

Posting Date: May 1, 2020 – Closing Date: Until Filled

Date Range/duration: May 20th, 2020 through November 2020.

Job Title: Water Quality Data Specialist

Job Type: Contract position, estimated at 360 hours maximum over a 6 – 12 week period.

Location: Remotely with possibly one to two trips to Creede, CO to work with historical records and/or meet with key partners, keeping to current recommendations for appropriate safety precautions related to Covid-19.

Overview: Headwaters Alliance is seeking a qualified individual to integrate 25-plus years of water quality sampling data from the Willow Creek watershed. This data would ideally be compiled from multiple sources into a single integrated database as part of the CWCB funded Comprehensive Willow Creek Watershed Planning Project (The Plan). The product will be a living public-use database that can be easily updated in the future, used to rank and prioritize reclamation needs in the watershed, for analysis and modeling and other.

Project Background: Willow Creek Watershed lies within the heart of the Historic Creede Mining District in Creede, CO. From the late 1800s through the late 1980's, the area was actively mined, resulting in a contaminated watershed and the placing of the Nelson Tunnel - Commodore Waste Rock Pile on the National Priorities List in 2008. Prior to listing as a NPL Site, City and County governments asked a group of dedicated and talented community members to act as advisors as to how reclamation of the area might be handled. Thus, the Willow Creek Reclamation Committee, a volunteer ad hoc committee, was formed in 1997. This group of fiercely independent individuals have worked to address many issues impacting Willow Creek for the past 22 plus years, including characterization studies, copious water quality sampling, reclamation work on the 5 Mines Project and more. More recently, Headwaters Alliance (HWA) has emerged as the formal 501(c)(3) continuing the work started by Willow Creek Reclamation Committee.

At this time, HWA is delighted to announce the launching of the Comprehensive Willow Creek Watershed Planning Project (The Plan). The Plan focuses on seven Objectives with supporting sub-tasks that address issues and needs across and between reaches within the watershed (Figure 1). By incorporating various reaches and stakeholders into one Plan, HWA seeks to put forth a collaborative approach to watershed-wide improvements. Specifically, The Plan will restore/protect the waters of Willow Creek through future removal actions and water quality improvement projects as related to the Nelson Tunnel Superfund Site and potential health issues; mitigate flood impacts; implement recreational and community beautification strategies and integrate multiple objectives that apply to geomorphic assessments, riparian development, and aquatic habitat improvements along the lower Willow Creek Floodplain Reach.

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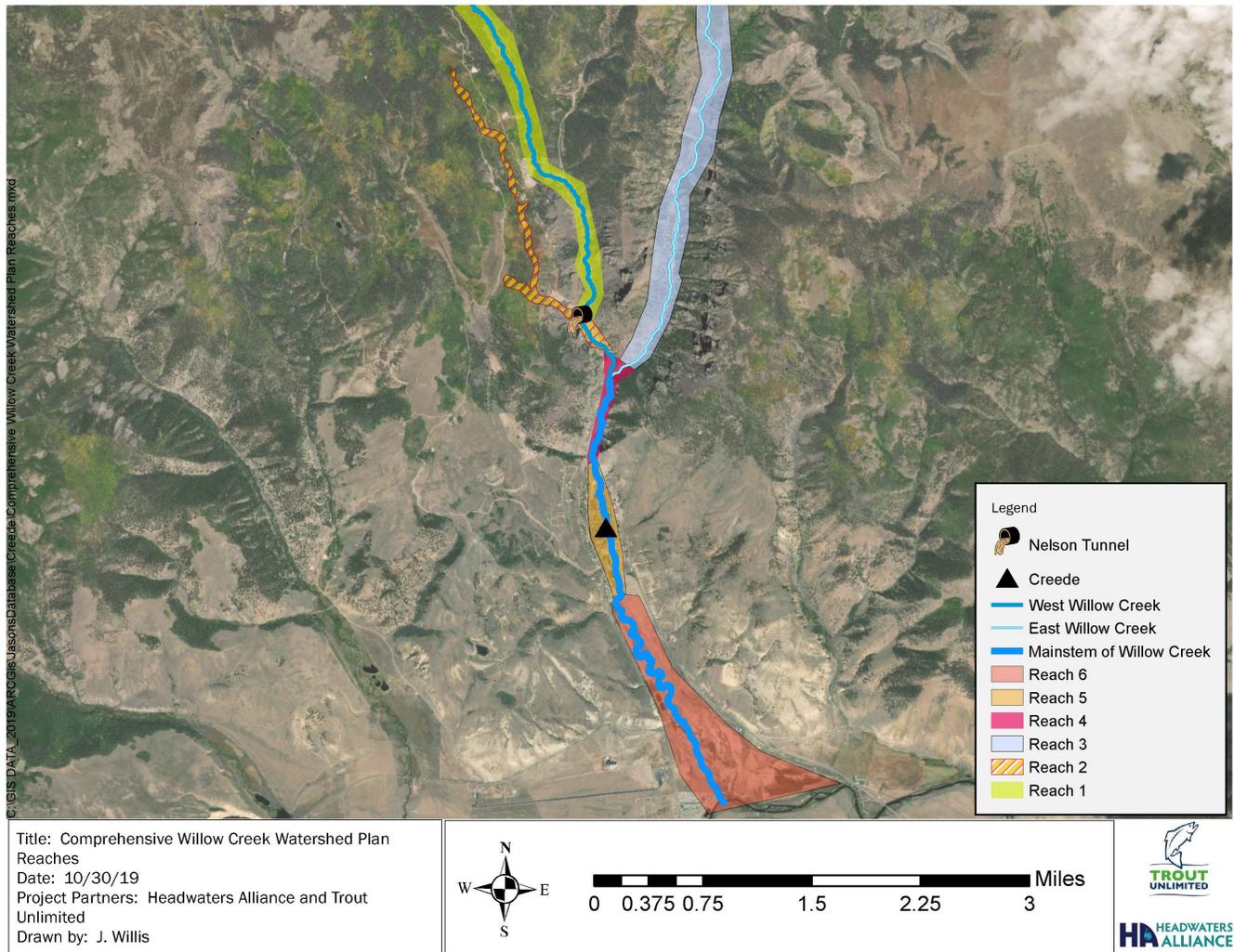


Figure 1: Reach map associated with The Plan delineating various reaches of the Willow Creek Watershed from the headwaters of east an west willow creeks to the confluence with the Rio Grande River.

A specific goal of The Plan is to create an unified public-access database of all water quality sampling data on Willow Creek and the Rio Grande (from Marshall Park to Wagon Wheel Gap) into a single integrated database. This database should be easily searchable and workable to accommodate future data uploads. The database should also focus and help identify sites where cleanup should occur in the future, and what measurable result that cleanup would create. Other database benefits would help identify gaps or needs for future sampling while taking into account ongoing projects being completed by EPA and Colorado Department of Health and Environment, Colorado Water Quality Division, the community and others related to the watershed.

Scope of Work – What will be required of the position

1. Work closely with HWA to collect and collate all known Water Quality Sampling data collected throughout the Willow Creek Watershed over the past 30+ years. Sources will include, but are not limited to WCRC, Colorado Parks and Wildlife/River Watch, Private Labs, EPA, Colorado DRMS, NRCS and others. It may be necessary to send out a call to local, state and federal agencies to identify other existing data.

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2. Work with HWA, Trout Unlimited (TU), CO Water Quality Division, EPA and others as needed to determine what State and/or Federal standards need to be referenced in the database so it is a tool partner agencies can use.
3. Select platform for compiling water quality data (Excel or equivalent preferred). Key to the selection criteria are GIS and mapping capabilities, open source public use, and the ability to reconcile discrepancies in historical data. Find a way to relate historical data with present data and relate to selected standards. Data collection has spanned time and improvements in technology.
4. Work with HWA to operationally define a multitude of variables and ensure key markers are included in database, i.e. source, agency, sampling procedures, time, parameters, data with active sampling plans, weather, constraints and limitations, etc. This may also include determining what categories of data are in existence and which are necessary to successfully build the database. For example, water chemistry (Total and Dissolved Metals), flow/discharge, temperature, nutrients, and macro-invertebrates.
5. If necessary conduct minimal review of literature associated with data sets to determine if data is valid and relevant to include for certain sites.
6. Resolving questions around the validity or source of a suspected data set, in consult with HWA and TU staff, to decide whether data should be included in the database.

Deliverables

1. Publicly accessible, comprehensive Water Quality Database for greater Willow Creek Watershed.
 - a. Database should include one or several maps showing location of historical monitoring locations, as well as existing sampling sites in relation to specific reaches and suspected sources of contamination.
 - b. This deliverable shall provide a clearinghouse for all existing, applicable data over past 30 + years. If other historical data is found during research, it should also be included if applicable.
 - c. Database shall be able to provide concise, easy to read tables and graphs prioritizing suspected sources of contamination, as well as noted areas of improvement over life of projects. These would ideally be in pivot table format and easy to manipulate for comparisons between sites in different areas of the watershed or between different parameters. Data would allow for mapping and modeling.
 - d. Graphs and tables would compare site specific data to established hardness-based State table value standards where applicable. These graphs would compare actual data to acute and chronic standards. Also, loading calculations should be plotted at each site or reach where flow data has been obtained.
2. Basic analysis that identifies significant gaps in data. This would allow partners to prioritize these sites in future sampling events.
3. Procedure Manual or punch-list for maintenance and uploads of new data to database in an ongoing manner.
4. Descriptive paper on process of creating the integrated database.

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.Requirements and Qualifications: Experience with handling and collating large, unwieldy, data sets that are not likely to be parallel in their present forms. Highly experienced with the technical, statistical, and logistical aspects of a project of this nature. An advanced understanding of water quality issues, particularly as related to metals contamination, mining and impacts on aquatic life a plus. You could be an advanced Masters or PhD student, or post doc working on issues related to environment impacts of mining, water quality, fisheries or other sciences. You may also be a working professional that simply loves all things assessment and stats and be able to reconcile the various records we have at hand.

We welcome candidates who have the capability to take the next step of analysis and modeling, although not required.

Candidate may have experience with environmental and ecological sciences, including forestry, riparian systems, fisheries, engineering, health related studies and/or natural resources, as well as;

- Bachelor's degree required, graduate degree a plus
- 1-5 years of relevant professional experience, or graduate school equivalent
- Degree of study is preferred in one of the disciplines above
- Experience with database management, data collection/gathering, report writing, community engagement, and project management a plus.
- Demonstrated performance in technical writing activities.
- Excellent written and oral communication skills are required, as well as ability to manage multiple deadlines/timelines simultaneously.
- Ability to work independently and remotely in partnership with HWA and project partners.
- Willingness to travel and work alone in the field; Valid driver's license and own vehicle required.
- High energy and passion for protecting Colorado's watersheds.

What will you get out of this project? We have a truly wonderful team working together on this project, including several of the key members of the Willow Creek Reclamation Committee who long did the vast majority of community-led sampling on Willow Creek, the insight of Trout Unlimited's Abandoned Mine Lands Program, supportive collaboration with the CDPHE, Colorado Division of Water Quality and the EPA as well as local government and community. These relationships are focused on creative, transparent and highly effective, collaborative work. Additionally, integrating all past water quality sampling into a single database is only one facet of the larger project. For the right candidate, this position may offer excellent opportunities for future professional engagement especially with regards to agency interaction and networking.

Compensation: This is a grant funded contract position so funding has limitations and a cap. We can offer the following:

- \$15/hour with an estimated maximum time frame of 360 hours or 9 weeks.
 - Benefits and healthcare are not included for this position
 - No sick/paid leave, but option for un-paid leave with notice to partners
- Housing and per diem of \$50/day in Creede during necessary site visits.
- Fuel reimbursement for actual fuel costs upon turning in receipts.
- Any costs related to the project (supplies, materials, programs, etc.)

All other costs directly related to the project, software, postage, other TBD will be provided for by HWA upon approval.

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How to Apply:

Please submit a resume, cover letter, and three professional references to Heather Greenwolf at executivedirector@headwatersalliance.org

Heather Greenwolf

Executive Director

719-588-2417 direct line

625 USFS Rd 504.1A /PO Box 518

Creede, CO 81130

<http://headwatersalliance.com/>

Applications will be accepted until the position is filled. This is not an all-inclusive list of duties and responsibilities and things could vary upon hiring. HWA hires staff without regard to race, color, religion, national origin, age, gender sexual orientation, marital status or disability.

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