

**Water Supply Reserve Fund – Grant and Loan Program**  
**Water Activity Summary Sheet**  
**September 18-19, 2019**  
**Agenda Item 9(d)**

**Co-Applicants:** Fourmile Watershed Coalition/Four Mile Fire Protection District

**Grantee:** Four Mile Fire Protection District

**Water Activity Name:** Boulder Creek Watershed Water Quality Sampling

**Water Activity Purpose:** Multipurpose/Study (Ag/M&I/Needs Assessment)

**County:** Multiple-South Platte Basin Counties

**Drainage Basin:** South Platte

**Water Source:** Boulder Creek

**Amount Requested:** \$18,180 South Platte Basin Account

**Matching Funds:** Applicant & 3<sup>rd</sup> Party Match (cash & in-kind) = \$18,180

- Exceeds 25% match requirement for the Basin Account request

<b>Staff Recommendation:</b>
Staff recommends approval of up to \$18,180 from the South Platte Basin Account to help fund the project titled: Boulder Creek Watershed Water Quality Sampling.

**Water Activity Summary:** WSRF grant funds, if approved, will assist the Fourmile Watershed Coalition perform an assessment of water quality which will address multiple concerns within the watershed. Potential contaminate sources to be evaluated in this study include legacy mine waste within the Fourmile Watershed (a sub-watershed of the Boulder Creek Watershed) and potential human waste impacts from various populated camping areas with the headwaters of Boulder Creek. This project is a partnership with the Boulder Ranger District and was developed after years of conversations with landowners, communities, and agencies, who consistently raised similar concerns about past and present human impacts to watershed health, public safety, water quality impairments, and wildfire. This project will contribute data which will address each of these concerns at various levels. Twenty-eight water samples will be collected and analyzed at a laboratory (over two years) from approximately fifteen streams, downstream of heavily used camping areas on US Forest Service land. The goal is to establish a baseline understanding as to whether human waste is causing contamination downstream of camping areas or not. These data can serve as a foundation for future evaluations as recreational use and transient camping areas continue to grow. In the Fourmile Watershed, ten to fifteen intermittent streams will have preliminary water quality data obtained by using a multi-meter to measure pH, EC, and temperature above and below mine waste piles. Preliminary data will indicate if further soil or water sampling is recommended. Data collection will be accompanied by landowner outreach and refining existing mine waste maps.

**Discussion:** This project supports the goals of maintaining, enhancing and proactively manage water quality for all use classifications as called for in the South Platte Basin Implementation Plan, as well

as assisting the state to promote protection and restoration of water quality as called for in Chapter 10, Section 10.3 F. Watershed Health, Environmental, and Recreation in Colorado's Water Plan.

**Issues/Additional Needs:** No issues or additional needs have been identified

**Eligibility Requirements:** The application meets requirements of all eligibility components: General Eligibility, Entity Eligibility, Water Activity Eligibility, and Eligibility Based on Match Requirements.

**Evaluation Criteria:** This activity has undergone review and evaluation and staff has determined that it satisfies the Evaluation Criteria. Please refer to Basin Roundtable Chair's Recommendation Letter and the WSRF Grant Application for applicant's detailed response.

**Funding Summary/Matching Funds:**

<b><u>Funding Sources</u></b>	<b><u>Cash</u></b>	<b><u>In-kind</u></b>	<b><u>Total</u></b>	<b><u>Status</u></b>
DOLA Energy Impact Assistance Fund	\$18,180	\$0	\$18,180	Secured
WSRF South Platte Basin Account	\$18,180	\$0	\$18,180	Secured
<b>Total Study Costs</b>	<b>\$36,360</b>	<b>\$0</b>	<b>\$36,360</b>	

**CWCB Project Manager:** Craig Godbout

South Platte Basin Roundtable  
Garrett Varra,  
Chair  
July 23, 2019

Craig Godbout  
Water Supply Planning Section  
Colorado Water Conservation Board  
1313 Sherman Street, Room 718  
Denver, CO 80203

**\*\*Via email to [craig.godbout@state.co.us](mailto:craig.godbout@state.co.us)\*\***

**RE: Letter of Support for Fourmile Watershed Coalition Grant Application: "Boulder Creek Watershed Water Quality Sampling Project."**

Dear Craig,

At the July meeting of the SPBRT the membership voted to recommend approval of the above referenced grant application. A quorum was present at the meeting. 2 members voted against the project citing a lack of local support for the project as a flaw. Both members thought the county in which the project is taking place should have a larger role in the project. This project requests \$18,180.00 from the basin fund.

The South Platte Basin Round Table supports the efforts of the Fourmile Watershed Coalition to further assess and monitor legacy mining impacts in the Fourmile Watershed and expand water quality sampling into the Boulder Creek Watershed.

The Fourmile Watershed Coalition's project is twofold: The first portion of the project will further refine an existing map of abandoned mines and mine waste piles in the Fourmile Watershed to locate piles adjacent to flowing water. Those piles will have photo points taken, GPS locations documented and preliminary water quality parameters measured above and below the piles. The data collected will help to prioritize where further mine characterization should occur.

The second portion of the project involves water sampling at strategic locations below heavily used camping areas on US Forest Lands. There have been concerns about human waste impacts on water quality due to large numbers of people camping in the Peak to Peak area. Results from this two-year study will provide information to the US Forest Service that may be useful in future land management decisions.

This project supports priorities in the South Platte Basin Implementation Plan that recognizes that nonconsumptive recreation and environmental uses are critical aspects of Colorado's economy and quality of life (S.3.6). Monitoring water quality is a critical component of being responsive to recreational growth along the Front Range and making sound land management decisions. The South Platte Basin Round Table is supportive of the Coalition's efforts to work with partners such as the US Forest Service on this important project.

Sincerely,

A handwritten signature in blue ink, appearing to read "Garrett Varra", is positioned above the printed name.

Garrett Varra





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<b>Colorado Water Conservation Board</b>
<b>Water Supply Reserve Fund Grant Application</b>

<b>Instructions</b>
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All WSRF grant applications shall conform to the current [2016 WSRF Criteria and Guidelines](#).

To receive funding from the WSRF, a proposed water activity must be approved by a Roundtable(s) **AND** the Colorado Water Conservation Board (CWCB). The process for Roundtable consideration and recommendation is outlined in the 2016 WSRF Criteria and Guidelines. The CWCB meets bimonthly according to the schedule on page 2 of this application.

If you have questions, please contact the current CWCB staff Roundtable liaison:

<b>Arkansas</b>  Ben Wade <a href="mailto:ben.wade@state.co.us">ben.wade@state.co.us</a> 303-866-3441 x3238	<b>Gunnison   North Platte   South Platte   Yampa/White</b>  Craig Godbout <a href="mailto:craig.godbout@state.co.us">craig.godbout@state.co.us</a> 303-866-3441 x3210	<b>Colorado   Metro   Rio Grande   Southwest</b>  Megan Holcomb <a href="mailto:megan.holcomb@state.co.us">megan.holcomb@state.co.us</a> 303-866-3441 x3222
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<b>WSRF Submittal Checklist (Required)</b>
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x	I acknowledge this request was recommended for CWCB approval by the sponsoring roundtable.
x	I acknowledge I have read and understand the <a href="#">2016 WSRF Criteria and Guidelines</a> .
x	I acknowledge the Grantee will be able to contract with CWCB using the <a href="#">Standard Contract</a> . <sup>(1)</sup>
<b>Application Documents</b>	
x	Exhibit A: Statement of Work <sup>(2)</sup> ( <i>Word – see Template</i> )
x	Exhibit B: Budget & Schedule <sup>(2)</sup> ( <i>Excel Spreadsheet – see Template</i> )
x	Letters of Matching and/or Pending 3 <sup>rd</sup> Party Commitments <sup>(2)</sup>
x	Map <sup>(2)</sup>
	Photos/Drawings/Reports
x	Letters of Support
<b>Contracting Documents<sup>(3)</sup></b>	
x	Detailed/Itemized Budget <sup>(3)</sup> ( <i>Excel Spreadsheet – see Template</i> )
x	Certificate of Insurance <sup>(4)</sup> ( <i>General, Auto, &amp; Workers' Comp.</i> )
	Certificate of Good Standing <sup>(4)</sup>
x	W-9 Form <sup>(4)</sup>
	Independent Contractor Form <sup>(4)</sup> ( <i>If applicant is individual, not company/organization</i> )
	Electronic Funds Transfer (ETF) Form <sup>(4)</sup>

(1) Click "Grant Agreements". For reference only/do not fill out or submit/required for contracting

(2) Required with application if applicable.

(3) Additional documentation providing a Detailed/Itemized Budget maybe required for contracting. Applicants are encouraged to coordinate with the CWCB Project Manager to determine specifics.

(4) Required for contracting. While optional at the time of this application, submission can expedite contracting upon CWCB Board approval.

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Schedule		
CWCB Meeting	Application Submittal Dates	Type of Request
January	December 1	Basin Account; BIP
March	February 1	Basin/Statewide Account; BIP
May	April 1	Basin Account; BIP
July	June 1	Basin Account; BIP
September	August 1	Basin/Statewide Account; BIP
November	October 1	Basin Account/BIP

Desired Timeline	
Desired CWCB Hearing Month:	July 2019
Desired Notice to Proceed Date:	August 2019

Water Activity Summary		
Name of Applicant	Fourmile Watershed Coalition	
Name of Water Activity	Boulder Creek Watershed Water Quality Sampling Project	
Approving Roundtable(s)	Basin Account Request(s) <sup>(1)</sup>	
South Platte Basin RT	\$18,180	
Basin Account Request Subtotal	\$18,180	
Statewide Account Request <sup>(1)</sup>	\$	
Total WSRF Funds Requested (Basin & Statewide)	\$18,180	
Total Project Costs	\$36,360	

(1) Please indicate the amount recommended for approval by the Roundtable(s)



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Grantee and Applicant Information	
Name of Grantee(s)	Four Mile Fire Protection District
Mailing Address	1740 Fourmile Canyon Drive, Boulder CO 80302
FEIN	84-098-1141
Grantee's Organization Contact <sup>(1)</sup>	Bret Gibson
Position/Title	Fire Chief
Email	<a href="mailto:chiefbret@gmail.com">chiefbret@gmail.com</a>
Phone	303-449-3333
Grant Management Contact <sup>(2)</sup>	<u>Cat Price</u>
Position/Title	Grants Manager
Email	<a href="mailto:cat@fourmilewatershed.com">cat@fourmilewatershed.com</a>
Phone	303-449-3333
Name of Applicant (if different than grantee)	Fourmile Watershed Coalition
Mailing Address	1740 Fourmile Canyon Drive, Boulder CO 80302
Position/Title	Watershed Coordinator
Email	<a href="mailto:fourmilewatershed@gmail.com">fourmilewatershed@gmail.com</a>
Phone	303-817-2261

**(1)** Person with signatory authority

**(2)** Person responsible for creating reimbursement invoices (Invoice for Services) and corresponding with CWCB staff.

Description of Grantee
Provide a brief description of the grantee's organization (100 words or less).
<p>The Fourmile Watershed Coalition (FWC) grew out of the recovery effort for the 2013 flood event. For the last four years, the Coalition has been working on stream restoration, mine reclamation, and water quality projects within the Fourmile Watershed. The FWC works closely with its fiscal agent, the Four Mile Fire Protection District, other stakeholder agencies, and public and private landowners. As the coalition transitions out of flood recovery, a wider array of programs are being developed, as well as expanding work into the Boulder Creek Watershed.</p> <p>The Four Mile Fire Protection District serves a rural community outside of the City of Boulder in a high-risk wildland urban interface.</p>



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Type of Eligible Entity (check one)	
	<b>Public (Government):</b> municipalities, enterprises, counties, and State of Colorado agencies. Federal agencies are encouraged to work with local entities. Federal agencies are eligible, but only if they can make a compelling case for why a local partner cannot be the grant recipient.
X	<b>Public (Districts):</b> authorities, Title 32/special districts (conservancy, conservation, and irrigation districts), and water activity enterprises
	<b>Private Incorporated:</b> mutual ditch companies, homeowners associations, corporations
	<b>Private Individuals, Partnerships, and Sole Proprietors:</b> are eligible for funding from the Basin Accounts but not for funding from the Statewide Account.
	<b>Non-governmental organizations:</b> broadly, any organization that is not part of the government
	<b>Covered Entity:</b> as defined in <a href="#">Section 37-60-126 Colorado Revised Statutes</a>

Type of Water Activity (check one)	
x	Study
	Implementation

Category of Water Activity (check all that apply)		
x	Nonconsumptive (Environmental)	
x	Nonconsumptive (Recreational)	
	Agricultural	
X	Municipal/Industrial	
	Needs Assessment	
	Education & Outreach	
	Other	Explain:

Location of Water Activity	
Please provide the general county and coordinates of the proposed activity below in <b>decimal degrees</b> . The Applicant shall also provide, in Exhibit C, a site map if applicable.	
County/Counties	Boulder County and a small part of Gilpin County
Latitude	40.014984
Longitude	-105.270546



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### Water Activity Overview

Please provide a summary of the proposed water activity (200 words or less). Include a description of the activity and what the WSRF funding will be used for specifically (e.g. studies, permitting, construction). Provide a description of the water supply source to be utilized or the water body affected by the activity. Include details such as acres under irrigation, types of crops irrigated, number of residential and commercial taps, length of ditch improvements, length of pipe installed, area of habitat improvements. If this project addresses multiple purposes or spans multiple basins, please explain. The Applicant shall also provide, in Exhibit A, a detailed Statement of Work, Budget, and Schedule.

This project is an assessment of water quality which will address multiple concerns within the watershed. Potential contaminate sources to be evaluated in this study include legacy mine waste within the Fourmile Watershed (a sub-watershed of the Boulder Creek Watershed) and potential human waste impacts from various populated camping areas with the headwaters of Boulder Creek. This project is a partnership with the Boulder Ranger District and was developed after years of conversations with landowners, communities, and agencies, who consistently raised similar concerns about past and present human impacts to watershed health, public safety, water quality impairments, and wildfire. This project will contribute data which will address each of these concerns at various levels.

Twenty-eight water samples will be collected and analyzed at a laboratory (over two years) from approximately fifteen streams, downstream of heavily used camping areas on US Forest Service land. The goal is to establish a baseline understanding as to whether human waste is causing contamination downstream of camping areas or not. These data can serve as a foundation for future evaluations as recreational use and transient camping areas continue to grow.

In the Fourmile Watershed, ten to fifteen intermittent streams will have preliminary water quality data obtained by using a multi-meter to measure pH, EC, and temperature above and below mine waste piles. Preliminary data will indicate if further soil or water sampling is recommended. Data collection will be accompanied by landowner outreach and refining existing mine waste maps.

### Measurable Results

To catalog measurable results achieved with WSRF funds please provide any of the following values.

	New Storage Created (acre-feet)	
	New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive	
	Existing Storage Preserved or Enhanced (acre-feet)	
	Length of Stream Restored or Protected (linear feet)	
	Efficiency Savings (indicate acre-feet/year OR dollars/year)	
	Area of Restored or Preserved Habitat (acres)	
	Length of Pipe/Canal Built or Improved	
x	Other	Explain: water quality sampling, mine waste mapping

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## Water Activity Justification

Provide a description of how this water activity supports the goals of [Colorado's Water Plan](#), the most recent [Statewide Water Supply Initiative](#), and the respective [Roundtable Basin Implementation Plan and Education Action Plan](#) <sup>(1)</sup>. The Applicant is required to reference specific needs, goals, themes, or Identified Projects and Processes (IPPs), including citations (e.g. document, chapters, sections, or page numbers).

For applications that include a request for funds from the Statewide Account, the proposed water activity shall be evaluated based upon how well the proposal conforms to Colorado's Water Plan criteria for state support (CWP, Section 9.4, pp. 9-43 to 9-44;) (Also listed pp. 4-5 in [2016 WSRF Criteria and Guidelines](#)).

### **Colorado Water Plan:**

Executive Order D 2013-005 states that, "Colorado's water quantity and quality questions can no longer be thought of separately....and a strong environment that includes healthy watersheds, rivers and streams and wildlife," is a core Colorado value (CO Water Plan Ch 7.3). This core value underlies this project and the values of the Watershed Coalition's stakeholders and partners.

This project has grown from discussions with many stakeholders, landowners, and agencies who have voiced concerns about legacy mining impacts and the increased camping and recreation of the headwater areas. The project is a partnership with the Boulder Ranger District of the US Forest Service who are continually working to manage public lands. They have provided the baseline for the project by mapping camp sites and providing long-term management strategies to deal with issues.

The project specifically supports the goals of the Pine Brook Water District which pumps raw water from Fourmile Creek to a reservoir for drinking water in Pine Brook Hills. Legacy mining has long been recognized as having major impacts to Colorado's headwater streams. The Boulder Creek Watershed, and Fourmile in particular, is affected by contaminated surface water run-off and ground seeps from draining adits, waste rock, and mine tailings. Currently, there is momentum with the Boulder Ranger District (USFS), Trout Unlimited's Abandoned Mine Lands Team, and the EPA's Good Samaritan Initiative to focus on characterizing mining impacts in order to work toward on-the-ground reclamation projects. Since much of the mining affected land is private, the project will also function as an outreach and education opportunity through one-on-one conversations.

Colorado's Water Plan includes measurable objectives and adaptive management. Watershed health, environment, and recreation is included as a measurable objective (Ch 10.3:F). This project contributes to the following listed objectives:

- Enhance Environmental and Recreational Economic Values: Protect and enhance river-based environments and recreational opportunities that support local and statewide economies and are important for the enjoyment of current and future generations of Coloradans.
  - Recreational activities like camping, hiking, and fishing are increasing in the Boulder Creek Watershed. These activities contribute heavily to the local economy, but also tax environmental and management needs of public lands. Water quality data collection and in-depth mapping of mine waste can enhance the environmental and recreational economic values.
- Protect Healthy Environments: Understand, protect, maintain, and improve conditions of streams, lakes, wetlands, and riparian areas to promote self-sustaining fisheries and functional riparian and wetland habitat to promote long-term resiliency.
  - Additional data is needed to increase the understanding of camping activities to small streams and tributaries. Mapping and sampling of mine waste areas and a deeper understanding of camping impacts can lead to implementation projects that further protect the headwater areas.
- Promote Protection and Restoration of Water Quality: The protection and restoration of water



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### Water Activity Justification

quality should be a key objective when planning for Colorado's current and future consumptive, recreational, and environmental water needs.

- The overall goal of the project is to evaluate current water quality from a multi-objective perspective in order to work toward implementing projects that improve water quality in the future.
- **Protect and Restore Critical Watersheds:** Protect and restore watersheds critical to water infrastructure, environmental, or recreational areas.
  - The headwaters of Boulder Creek provide water for many water users on the Front Range. Camping areas identified on USFS maps include locations within the catchments of Denver Water, The City of Boulder, Town of Nederland, and The Pine Brook Water District serving Pine Brook Hills.

#### **Statewide Water Supply Initiative:**

The Statewide Water Supply Initiative's key findings (2010) state that municipal demands will continue to increase as the South Platte Basin continues to be one of the most populous areas in Colorado. Municipal needs within the Boulder Creek Watershed include clean drinking water sources as well as nonconsumptive recreational and environmental needs. The Statewide Nonconsumptive Needs Assessment Map includes multiple segments within the Boulder Creek Watershed identified as environmental and recreational focus areas.

#### **South Platte Basin Implementation Plan:**

The South Platte Basin Implementation Plan (SPBIP) Executive Summary recognizes that nonconsumptive recreation and environmental uses are critical aspects of Colorado's economy and quality of life (S.3.6). This is particularly true in Boulder County where much of the population and economic growth is attributed to the availability and accessibility of the natural areas. The SPBIP also highlights that there are significant water quality challenges for domestic and municipal water use within the South Platte Basin. This project has developed through a similar recognition of these issues and a localized, collaborative attempt to create a deeper understanding of the issues. Data collection will assist project partners in developing implementation projects, acquiring funding, making land use decisions and creating long-term plans to address the growing population and the natural resource management issues that accompany this growth.

This project is responsive to the diverse demands placed upon water resources including economic, cultural, and environmental (S.4.1). This project was developed in response to multiple issues raised by a diverse group of stakeholders. Social issues related to increased camping have been raised by local communities, increased fire risk and public safety is a concern for local fire districts, water quality issues from camping near streams has been discussed by communities and water providers and land management issues are recognized by the US Forest Service.

Appendix D- Environmental and Recreational Assessment Methodology and Framework - discusses various project types that may enhance or protect environmental or recreational attributes. These include:

- *CWCB In-stream flow rights (4.1)*- In stream flow rights exist in Boulder Creek and Fourmile Creek. This project provides foundational data collection to assist in conservation efforts that can affect these segments of stream.
- *Channel restoration (4.2)*- Mine waste characterization is the preliminary assessment required to determine where channel restoration and mine reclamation is necessary. FWC has completed one of these projects and will complete another in 2019.
- *Stewardship (4.3)*- A better understanding of how camping affects water resources will help the USFS develop stewardship projects like restoration of camp sites and future deterrence and protection of sensitive riparian areas.
- *Cooperative or multi-purpose projects (4.5)*- This project is multi- purpose in that one water





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### Water Activity Justification

sample can be evaluated for heavy metals related to mine waste and nutrients that could be related to human impacts. These data could lead to very different implementation projects (camp site restoration vs mine reclamation) yet a similar goal is accomplished: improved water quality.

This project is cooperative in that it supports a larger partnership between the FWC, USFS, Pine Brook Water District, Trout Unlimited and the EPA. Additionally, this project is responsive to a seemingly intractable social issue in the headwaters of Boulder Creek that includes residents and fire districts concerned about increased camping and increasing levels of trash, human waste and unattended campfires.

Appendix E- Water Quality - characterizes Boulder Creek as, “one of the more critical subwatersheds (3.9 pg 19),” when describing existing data for the St Vrain Creek watershed. Appendix E further states that, “Sustainable management for environmental and recreational attributes is interrelated with water supply complexities and land use changes affecting water quality and land cover, the latter factor being especially critical in the forested, mountain tributary streams flowing into the South Platte River (pg 1).”

The forested watersheds in which the project will occur provide natural water quality filtration systems through forests and riparian areas. Simultaneously, these areas are affected by past and current human land use that poses potential threats to human and aquatic health. This project intends to build on previous data collection to further refine data sets that can provide a path toward water quality improvement implementation projects.

Appendix E discusses a “diversity of concerns” within the South Platte Basin one of which includes:

- “A few of the mountain tributaries have been impacted by historical mining and mine related activities (#7 pg 2).” This includes the Boulder Creek watershed. The section further describes associated concerns of trace metal concentrations.

This project directly addresses this concern by measuring metal concentrations at strategic locations. Additionally, the project will improve upon current mine waste maps to refine locations of piles adjacent to flowing water.





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### Water Activity Justification

This space has intentionally been left blank.

(1) Access Basin Implementation Plans or Education Action Plans from Basin drop down menu.

### Matching Requirements: Basin Account Requests

**Basin (only) Account** grant requests require a 25% match (cash and/or in-kind) from the Applicant or 3<sup>rd</sup> party and shall be accompanied by a **letter of commitment** as described in the 2016 WSRF Criteria and Guidelines (submitted on the contributing entity's letterhead). Attach additional sheet if necessary.

Contributing Entity	Amount and Form of Match (note cash or in-kind)
Department of Local Affairs Energy Impact Assistance Fund	\$18,180



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Matching Requirements: Basin Account Requests	
Total Match	\$18,180
If you requested a Waiver to the Basin Account matching requirements, indicate the percentage you wish waived.	

Matching Requirements: Statewide Account Requests	
<b>Statewide Account</b> grant requests require a 50% match as described in the 2016 WSRF Criteria and Guidelines. A minimum of 10% match shall be from Basin Account funds (cash only). A minimum of 10% match shall be provided by the applicant or 3rd party (cash, in-kind, or combination). The remaining 30% of the required match may be provided from any other source (Basin, applicant, or 3 <sup>rd</sup> party) and shall be accompanied by a <b>letter of commitment</b> . Attach additional sheet if necessary.	
Contributing Entity	Amount and Form of Match (note cash or in-kind):
Total Match	\$
If you requested a Waiver to the Statewide Account matching, indicate % you wish waived. (Max 50% reduction of requirement).	

Related Studies
Please provide a list of any related studies, including if the water activity is complimentary to or assists in the implementation of other CWCB programs.

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### Related Studies

[State of the Watershed: Water Quality of Boulder Creek, Colorado](#). (2006)

- Discusses water quality and potential impacts within the watershed.

Source Water Protection Plans: City of Boulder (2017), Town of Nederland (2014), Pine Brook Water District (2014).

- Source Water Protection Plans highlight mining impacts as a potential source of drinking water contamination.

[Saint Vrain Watershed Plan](#) (2015)

- The Watershed Plan provides helpful background on geology, soils, hydrology, and other watershed characteristics that impact water supply, watershed health, and water quality.

[Saint Vrain Wildfire/Watershed Assessment](#) (2012)

- Prioritization of watershed based risks to water supplies.

### Previous CWCB Grants

List all previous or current CWCB grants (including WSRF) awarded to both the Applicant and Grantee. Include: 1) Applicant name; 2) Water activity name; 3) Approving RT(s); 4) CWCB board meeting date; 5) Contract number or purchase order

1) Fourmile Watershed Coalition/Fire District

2) EWP Stream Restoration Projects, Monitoring and Adaptive Management, Forest Health Planning & Education and Outreach.

3) South Platte Basin RT

4) January 2019, May 2019.

5) Projects and contract numbers include:

- Ingram Gulch- EWP match (CTGG1 2018\*661), EWP TA design: (POGG PDAA 201700000775).
- Wall Street- EWP match (CTGG1 12017\*1819 CMS#101032)
- Fire Station Pond- EWP match (POGG1 PDAA 201700000935(SB-179))
- Monitoring and Adaptive Management (PDAA, 201900002117).
- Boulder County Forest Collaborative (awarded, no contract yet).
- Boulder County Forest Collaborative Education & Outreach (CO Water Plan- application submitted)

### Tax Payer Bill of Rights

The Tax Payer Bill of Rights (TABOR) may limit the amount of grant money an entity can receive. Please describe any relevant TABOR issues that may affect the applicant.

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In 2011 the Four Mile Fire Protection District's voters exempted the District from TABOR's revenue and spending limits, and the annual revenue limits imposed by Section 29-1-301 of the Colorado Revised Statutes.

The 2016 Financial Audit completed by John Cutler & Associates for the Four Mile Fire Protection District records the following statement: "The District has established an emergency reserve, representing 3% of fiscal year spending (excluding debt service), as required by TABOR. TABOR is complex and subject to judicial interpretation. The District believes it is in compliance with the requirements of TABOR,"



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<b><u>FourmileColorado Water Conservation Board</u></b>	
<b>Water Supply Reserve Fund</b>	
<b><u>Exhibit A - Statement of Work</u></b>	
<b>Date:</b>	<b>April 26, 2019</b>
<b>Water Activity Name:</b>	<b>Boulder Creek Watershed Water Sampling Project</b>
<b>Grant Recipient:</b>	<b>Fourmile Watershed Coalition</b>
<b>Funding Source:</b>	<b>Water Supply Reserve Fund</b>
<b>Water Activity Overview:</b> (Please provide brief description of the proposed water activity (no more than 200 words). Include a description of the overall water activity and specifically what the WSRF funding will be used for.	
<p>This project is an assessment of water quality which will address multiple concerns within the watershed. Potential contaminate sources to be evaluated in this study include legacy mine waste within the Fourmile Watershed (a sub-watershed of the Boulder Creek Watershed) and potential human waste impacts from various populated camping areas with the headwaters of Boulder Creek. This project is a partnership with the Boulder Ranger District and was developed after years of conversations with landowners, communities and agencies who consistently raised similar concerns about past and present human impacts to watershed health, public safety, water quality impairments and wildfire. This project will contribute data which will address each of these concerns at various levels.</p> <p>Twenty-eight water samples will be collected and analyzed at a laboratory (over two years) from approximately fifteen streams, downstream of heavily used camping areas on US Forest Service land. The goal is to establish a baseline understanding as to whether human waste is causing contamination downstream of camping areas. These data can serve as a foundation for future evaluations as recreational use and transient camping areas continue to grow.</p> <p>In the Fourmile Watershed ten to fifteen intermittent streams will have preliminary water quality data obtained by using a multi-meter to measure pH, EC and temperature above and below mine waste piles. Preliminary data will indicate if further soil or water sampling is recommended. Data collection will be accompanied by landowner outreach and refining existing mine waste maps.</p>	
<b>Objectives:</b>	
<ol style="list-style-type: none"><li><b>1. To better understand legacy mining impacts to water quality within the Fourmile Watershed.</b></li><li><b>2. To build upon and leverage existing partnerships in order to increase mine reclamation projects.</b></li><li><b>3. To develop a long-term relationship with the US Forest Service through collaborative projects and shared values.</b></li><li><b>4. To better understand human impacts to water quality related to populated dispersed camping areas.</b></li><li><b>5. To contribute data that may assist local communities as they address the social, economic and environmental impacts of population and recreational growth in headwater areas.</b></li></ol>	



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Tasks
Provide a detailed description of each task using the following format:
<b><u>Task 1 – Data Compiling</u></b>
Description of Task: Review of existing data
Review existing planning documents and water quality sampling data from other agencies to understand what data has been collected in the past. Currently, FWC is aware of sampling efforts on larger tributaries completed by water providers and the USGS in the Boulder Creek headwaters. Fourmile Creek has sample results from some smaller tributaries.
Method/Procedure:
<ol style="list-style-type: none"><li>1. Review Source Water Protection Plans and other relevant planning documents.</li><li>2. Engage the Keep it Clean Partnership, USGS and City of Boulder to better understand existing data.</li></ol>
Grantee Deliverable: (Describe the deliverable the grantee expects from this task)
Water quality sampling results from other agencies.
CWCB Deliverable: (Describe the deliverable the grantee will provide CWCB documenting the completion of this task)
Document summarizing existing water quality data in the Boulder Creek headwaters.



Last Update: January 9, 2018

Tasks
Provide a detailed description of each task using the following format:
<b><u>Task 2 - Mine Waste Evaluation</u></b>
Description of Task: <p>The purpose of this task is to refine the existing map of abandoned mines and mine waste piles within the Fourmile Watershed and conduct preliminary water quality sampling. The current map contains hundreds of sites. The map does not delineate piles that are adjacent to flowing water or unvegetated (due to contamination levels or wildfire burn). This information is necessary to begin to determine which mines are causing impacts and which are not.</p> <p>Water quality data has been obtained from Fourmile Creek and Gold Run Creek. Certain locations have elevated levels of arsenic, zin and manganese. With this knowledge the Coalition must conduct bracketing of waste piles in the gulches to attempt to determine where the contaminants are coming from.</p> <p>It is expected that preliminary water sampling from a hand-held multi-meter, above and below waste piles, will provide enough direction to determine locations in need of more extensive characterization. Phase II of this project would be completing soil and water sampling with lab analysis. The ultimate goal of the project is to prioritize mining sites where reclamation would provide water quality improvements.</p> <p>The Fourmile Watershed is a primary tributary to Boulder Creek and the Pine Brook Water District obtains approximately 80% of their drinking water from the watershed. Incremental improvements will assist in improving raw water quality for drinking water. There is momentum and funding for work on USFS lands to do mine waste sampling and reclamation. The project will build upon work and partnerships with Trout Unlimited and the Boulder Ranger District. Integrating private lands is a holistic method of assessing the landscape and educating and gaining support for work on private lands.</p> <p>The Fourmile Watershed Coalition has completed one stream restoration project that included removal of 1900 CY of mine tailings and has another project that will be constructed in 2019. This evaluation project will build upon work already completed in the watershed.</p>
Method/Procedure: <ol style="list-style-type: none"><li>1. Obtain permission to enter and conduct sampling from private or public landowners.<ul style="list-style-type: none"><li>o Use aerial photos, maps and historical documents to identify strategic locations for field investigations.</li><li>o Use conversations with private landowners as opportunity to build a relationship and provide an educational opportunity regarding potential impacts from legacy mines.</li></ul></li><li>2. Build upon the existing map of abandoned mines and waste piles (see attachment) from Pine Brook Water District's Source Water Protection Plan to identify piles adjacent to flowing water.<ul style="list-style-type: none"><li>o Locate these sites in ArcGIS, photograph the sites and produce a more detailed map.</li><li>o This will need to be completed during the spring since many areas have intermittent streams.</li></ul></li><li>3. Conduct preliminary sampling<ul style="list-style-type: none"><li>o Use the multi-meter to measure pH, electrical conductivity and temperature above and below mine waste piles or at seeps or draining adits.</li><li>o Document and record and evaluate data.</li></ul></li><li>4. Share data with partners (TU, Boulder Ranger District) to determine if further soil or water sampling is warranted to characterize mine sites.</li></ol>
Grantee Deliverable: (Describe the deliverable the grantee expects from this task)
This task will allow the Coalition to integrate maps, data and site visits to determine where further mine characterization (soil and water samples) needs to occur. This effort is a foundational assessment to necessary to develop reclamation projects.

Last Update: January 9, 2018

Tasks
<p>CWCB Deliverable: (Describe the deliverable the grantee will provide CWCB documenting the completion of this task)</p> <ol style="list-style-type: none"> <li>1. A refined and updated map of mine waste adjacent to water.</li> <li>2. Photo points of waste piles.</li> <li>3. Multi-meter sample results.</li> </ol>
Tasks
<p>Provide a detailed description of each task using the following format:</p>
<p><b><u>Task 3 - Camp Site Evaluation</u></b></p>
<p>Description of Task: Water quality sampling downstream of camping areas.</p> <p>The purpose of this task is to assess water quality downstream of heavily used camping areas identified by the Boulder Ranger District. These areas are primarily on US Forest Service lands (sample campsite maps are included in the application). Camp sites are used recreationally by tourists and visitors and also on a longer-term basis by transients and travelers. The heavy use of camping areas has created social and environmental impacts.</p> <p>Water quality sampling was completed in Fourmile Creek in 2017. Results displayed high nitrates downstream of the Ruby Gulch camping area. While the sample results did not necessarily connect the water quality impairments to human impacts from camping it did generate an interest in better understanding downstream impacts. The USFS quantifying and mapping campsites has added a layer of data that makes the project valuable. Ruby Gulch is an example of a location that has mining impacts and increased recreational use. Therefore, water samples from this and similar areas will be evaluated for heavy metals and nutrients.</p> <p>Eleven densely used camping areas have been identified as potentially having human waste impacts downstream. Fourteen streams were delineated downstream of the camping areas as strategic areas to sample from. Samples will be collected over two years during summer months in order to establish a usable baseline. A sampling suite will be developed with a consultant to assure that all appropriate indicators and parameters are being captured in the sampling. Data will be shared widely with partners and stakeholders.</p>
<p>Method/Procedure:</p> <ol style="list-style-type: none"> <li>1. Confirm sampling locations with the USFS and other partners.</li> <li>2. Develop water quality sampling suite.</li> <li>3. Collect samples in summer 2020 and 2021.</li> <li>4. Create map and results report.</li> <li>5. Evaluate and share data.</li> </ol>
<p>Grantee Deliverable: (Describe the deliverable the grantee expects from this task)</p>





Last Update: January 9, 2018

Tasks
This task will produce water quality data that can be further evaluated to determine if there is a connection that implies human waste may be causing downstream water quality impacts. This data, along with other factors, could lead to future management decisions about camping areas on public lands.
CWCB Deliverable: (Describe the deliverable the grantee will provide CWCB documenting the completion of this task)
The deliverable is an updated map with campsite areas and sample locations, as well as a report describing water quality sample results.

Tasks
Provide a detailed description of each task using the following format:
<b><u>Task 4– Grant Administration</u></b>
Description of Task: Project management and grant administration
The purpose of this task is to support staff time to ensure grant compliance. This task will cover project management and organization of tasks, preparation of reimbursement requests and other administrative tasks associated with the project.
Method/Procedure:
1. Provide administrative activities for grant reimbursement and compliance.
Grantee Deliverable: Reporting and reimbursement requests.

Last Update: January 9, 2018

### Budget and Schedule

**Exhibit B - Budget and Schedule:** This Statement of Work shall be accompanied by a combined [Budget and Schedule](#) that reflects the Tasks identified in the Statement of Work and shall be submitted to CWCB in excel format. A separate excel formatted Budget is required for engineering costs to include rate and unit costs.

### Reporting Requirements

**Progress Reports:** The grantee shall provide the CWCB a progress report every 6 months, beginning from the date of issuance of a purchase order, or the execution of a contract. The progress report shall describe the status of the tasks identified in the statement of work, including a description of any major issues that have occurred and any corrective action taken to address these issues. The CWCB may withhold reimbursement until satisfactory progress reports have been submitted.

**Final Report:** At completion of the project, the grantee shall provide the CWCB a Final Report on the grantee's letterhead that:

- Summarizes the project and how the project was completed.
- Describes any obstacles encountered, and how these obstacles were overcome.
- Confirms that all matching commitments have been fulfilled.
- Includes photographs, summaries of meetings and engineering reports/designs.

### Payments

Payment will be made based on actual expenditures, must include invoices for all work completed and must be on grantee's letterhead. The request for payment must include a description of the work accomplished by task, an estimate of the percent completion for individual tasks and the entire Project in relation to the percentage of budget spent, identification of any major issues, and proposed or implemented corrective actions.

The CWCB will pay the last 10% of the entire water activity budget when the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the water activity and purchase order or contract will be closed without any further payment. Any entity that fails to complete a satisfactory Final Report and submit to CWCB within 90 days of the expiration of a purchase order or contract may be denied consideration for future funding of any type from CWCB.

### Performance Requirements

Performance measures for this contract shall include the following:

(a) Performance standards and evaluation: Grantee will produce detailed deliverables for each task as specified. Grantee shall maintain receipts for all project expenses and documentation of the minimum in-kind contributions (if applicable) per the budget in Exhibit B. Per Grant Guidelines, the CWCB will pay out the last 10% of the budget when the final deliverable is completed to the satisfaction of CWCB staff. Once the final deliverable has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment.

(b) Accountability: Per the Grant Guidelines full documentation of project progress must be submitted with each invoice for reimbursement. Grantee must confirm that all grant conditions have been complied with on each invoice. In addition, per the Grant Guidelines, Progress Reports must be submitted at least once every 6 months. A Final Report must be submitted and approved before final project payment.

(c) Monitoring Requirements: Grantee is responsible for ongoing monitoring of project progress per Exhibit A. Progress shall be detailed in each invoice and in each Progress Report, as detailed above. Additional inspections or field consultations will be arranged as may be necessary.

(d) Noncompliance Resolution: Payment will be withheld if grantee is not current on all grant conditions. Flagrant disregard for grant conditions will result in a stop work order and cancellation of the Grant Agreement.

Last Update: January 9, 2018

**EXHIBIT B - BUDGET AND SCHEDULE - Direct & Indirect (Administrative) Costs**

**Grantee Name: Four Mile Fire Protection District**

- Standard contracting procedures dictate that the Expiration Date of the contract shall be 5 years from the Effective Date.



## Dispersed Campsites

These locations have campsites near/on flowing water.

### Legend

 Camp Site Locations

 Beaver Reservoir

 Gold Lake

 Ruby Gulch

 Rainbow Lakes 3

 Rainbow Lakes 2


 Rainbow Lakes 1

 Rollins Pass West 1

 Rollins Pass West 2

 Rollins Pass East 2

 Rollins Pass East 1

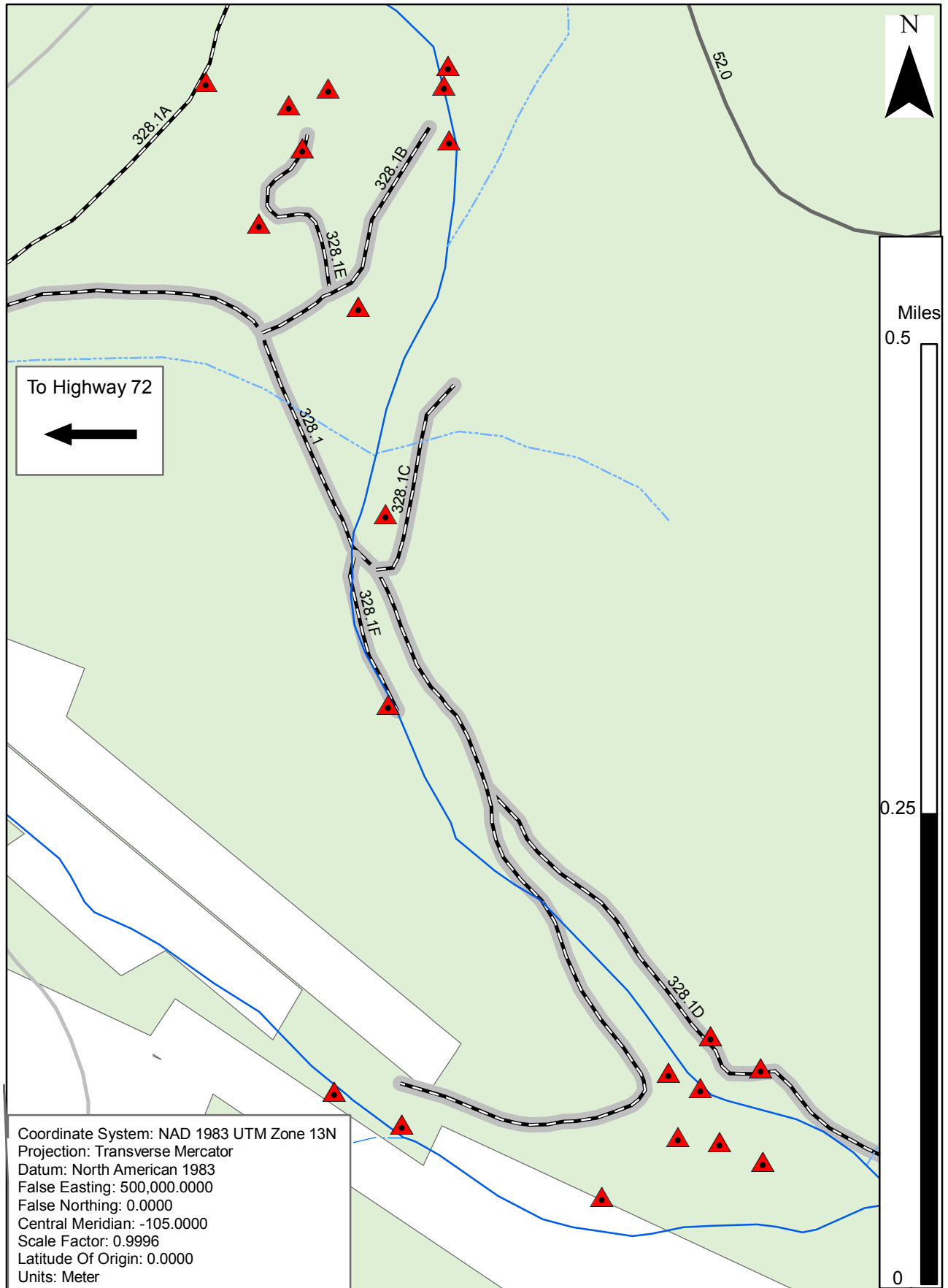
 Mammoth Gulch





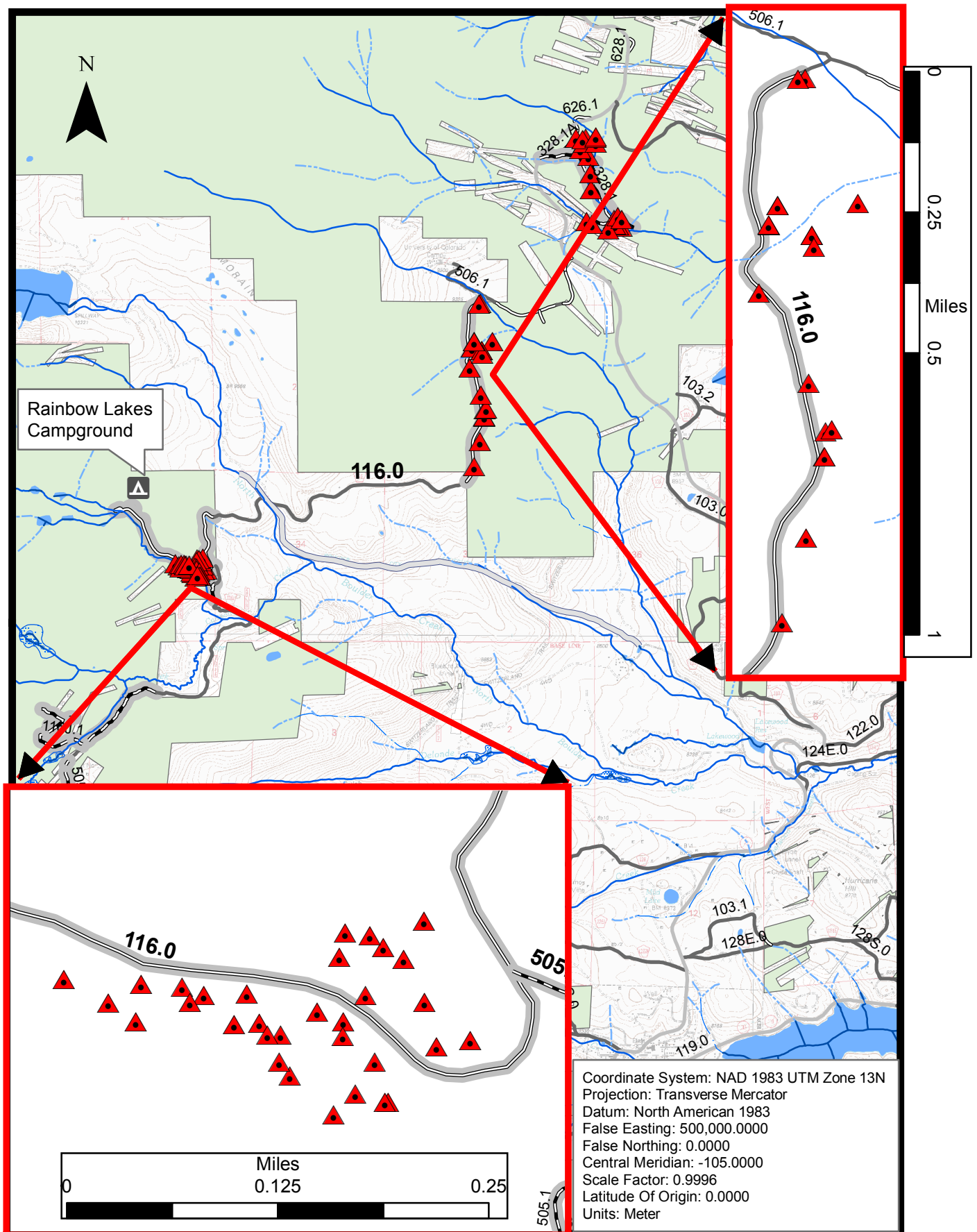
# Ruby Gulch Dispersed Campsites

21 Campsites Surveyed



# Rainbow Lakes Road Dispersed Campsites

## 50 Campsites Surveyed





## **Letter of Match Commitment**

The purpose of this letter is to outline match funding for the Boulder Creek Watershed Water Quality Sampling Project. The Fourmile Watershed Coalition (FWC) has identified funds to match Water Supply Reserve Funds through the Colorado Department of Local Affairs' Energy Impact Assistance Fund (EIAF). These funds can be applied to eligible projects in areas affected by extraction industries. The legacy mining issues in the Fourmile Watershed qualify the area as an eligible geography. EIAF funds can be awarded to local governments including Special Districts. The Four Mile Fire Protection District is a Special District and fiscal agent for the Watershed Coalition.

The FWC has had multiple conversations with Don Sandoval, a Regional Director for DOLA and submitted a document describing project background, scope of work and budget for the project. EIAF funds would only be used for tasks within the Fourmile Watershed including mine waste mapping, preliminary sampling and landowner outreach. WSRF funds would be used for water quality sampling and lab analysis of the camping related sites within the larger Boulder Creek Watershed. The Department of Local Affairs is unable to write a letter of match commitment because they cannot award funds without existing match funds.

Having received funds from the EIAF in the past, the FWC feels confident that if awarded WSRF grant funds EIAF funds would also be awarded for this project. Since the requested amount is small (\$18,180) compared to EIAFs typical grant requests the funding allocation would be completed through an administrative process and not through the typical grant process. Don Sandoval suggested that the selection committee call and speak with him to confirm this information, if necessary, in order to award the grant.

Don Sandoval  
Regional Manager  
State of Colorado Department of Local Affairs  
970-679-4501  
Don.sandoval@state.co.us





United States  
Department of  
Agriculture

Forest  
Service

Boulder Ranger District

2140 Yarmouth Avenue  
Boulder, CO 80301  
303-541-2500  
Fax: 303-541-2515

File Code: 2300  
Date: April 30, 2019

Garrett Varra  
South Platte Basin Round Table  
1313 Sherman Street, Room 721  
Denver, CO 80203

Dear Selection Committee:

I am writing in support of the Fourmile Watershed Coalition request for funding of a water quality sampling project within the Boulder Creek Watershed.

This is the Boulder Ranger District's first partnership opportunity with Fourmile Watershed Coalition. I am excited to begin this partnership with the Fourmile Watershed Coalition. We will also be engaging with them on their efforts with the Boulder County Forest Collaborative. This effort will convene a group of diverse stakeholders to work through ways to increase the scale and scope of forest health projects. Their focus of an all lands approach to forest health and landscape resiliency as well as their connection to the mountain communities within Boulder County are the perfect catalyst for us to implement mutual goals.

This proposal compliments the recent efforts of our recreation program's efforts in mapping dispersed campsites across the Boulder Ranger District. The award of this grant will allow for water quality sampling data at strategic locations to help inform specialists about recreational impacts from camping and will contribute valuable information to long term management plans.

The Fourmile Watershed Coalition's project intends to assess impacts within the watershed by gaining a more in depth understanding of water quality. Acquiring water quality data will help to understand the growing impacts of population and recreation in the forested Front Range of the Boulder Ranger District. The district is supportive of the Coalition's project and encourages the selection committee to consider this funding request.

Thank you for supporting the Boulder Ranger District and our partners. If you have any questions, please feel free to contact me at 303-541-2505, or E-Mail: [angela.gee@usda.gov](mailto:angela.gee@usda.gov).

Sincerely,

ANGELA GEE  
DISTRICT RANGER





Date: April 30, 2019

To: Garrett Varra  
South Platte Basin Round Table  
1313 Sherman Street  
Denver CO 80203

**RE: Letter of Support for Fourmile Watershed Coalition Water Quality Sampling Project**

Dear Selection Committee,

The Pine Brook Water District is writing in support of the Fourmile Watershed Coalition's Water Quality Sampling Project. The Pine Brook Water District obtains a large portion of raw water from the Fourmile Watershed. This project directly supports the priorities and values of the District to deliver clean drinking water to the 400 homes in Pine Brook Hills. The Pine Brook Water Source Water Protection Plan ranks abandoned mines and mine tailings as the highest priority regarding potential sources of contamination or issues of concern. Public land use and increased exposure from that use is also ranked as a lower priority.

As a member of the Watershed Coalition Board and as a stakeholder with a vested interest in Fourmile's watershed and river health we see opportunity in integrating multiple potential contamination sources into one sampling plan. Identifying mine waste contamination as well as human waste impacts from camping assist the District in better understanding raw water impacts and improving the services offered to our customers.

The Fourmile Watershed Coalition has been very successful in developing and managing multi-objectives projects that directly support the needs and values of stakeholders. This project will build off of previous work within the Fourmile Watershed and expand the footprint of impact into the Boulder Creek Watershed.

Pine Brook Water District encourages you to strongly consider this request as the data derived from the project will be incredibly useful.

Thank you,

A handwritten signature in black ink, appearing to read "Robert de Haas", is written over a horizontal line.

Robert de Haas, Manager



April 30, 2019

**RE: Letter of Support for Fourmile Watershed Coalition Grant Application: “Boulder Creek Watershed Water Quality Sampling Project”.**

Dear Selection Committee:

The Boulder County Fire Fighters Association (BCFFA) and the mountain fire districts that belong to the organization are acutely aware of the increased camping and recreation issues throughout Boulder County. This issue affects our communities and fire districts in many ways including having a heavy impact on natural resources. The districts respond to many unattended campfires each year, several of which have severely threatened homes and water sources including the Cold Springs fire in 2016.

The BCFFA is supportive of efforts by the US Forest Service and Fourmile Watershed Coalition to map campsites and collect water quality data. These efforts will contribute to the districts’ data collection of unattended campfires and efforts to deal with the increasing threat of wildfire as a result of recreational and transient camping in mountain areas. The BCFFA feels that efforts to collect various types of data will assist all agencies in developing and implementing management plans can address the multiple hazards that are created by increased use of public lands.

The BCFFA represents a collaboration of mountain fire chiefs from western Boulder County and the Boulder County Cooperators are the training arm of the organization. Together we have a joint mission to provide safe and effective all-hazard training and a forum for the open discussion of emergency response. As such, monitoring and addressing the camping and recreational impacts within Boulder County that have the potential to affect public safety is of primary importance.

The BCFFA has supported the work of the Fourmile Watershed Coalition in the past and looks forward to integrating the outcomes of this study into wider array of data. Please consider this funding request as it will contribute to greater public safety and environmental protection.

Thank you,

A handwritten signature in black ink that reads 'Bret Gibson'.

Bret Gibson  
President



Boulder County Fire Fighters Association  
501(c)(3) Non-Profit EIN 84-1287461