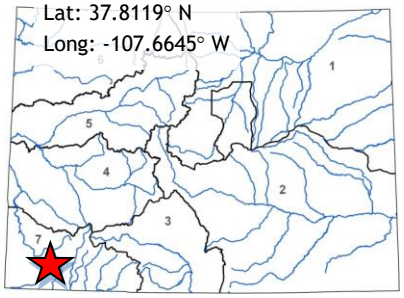
COLORADO
Colorado Water Conservation Board

Water Plan Grant Application

Silverton Science & Innovation Center
Mountain Studies Institute

November 2018 Board Meeting



LOCATION	
County/Counties:	San Juan San, Ouray, San Miguel, Mineral and Hinsdale
Drainage Basin:	Southwest

DETAILS	
Total Project Cost:	$157,560
Water Plan Grant Request:	$70,223
Other CWCB Funding:	$0
Other Funding Amount:	$64,838
Applicant Match:	$22,499
Project Type: Other	
Project Category: Engagement & Innovation	
Measurable Result: Add significant capacity to accelerate technology to address draining mines and improve water quality by engaging businesses, innovators, universities, and students in solving legacy water challenges	

The applicant, Mountain Studies Institute (MSI), is a 501(c) (3) non-advocacy, non-profit mountain research and education institution established in 2002 located in the Town of Silverton. MSI has been asked by the local community in Silverton and their partners to lead the development of an innovation center for addressing abandoned and draining mines. MSI's mission is to "*empower communities, managers, and scientists to innovate solutions through mountain research, education and practice*".

The applicant's vision of Silverton's Science & Innovation Center (SSINC) is to be a consortium of businesses, researchers and agencies to advance technology, catalyze science, and support creative solutions to advance hard rock mine remediation and improve water quality and treatment. The applicant's goal is for SSINC to become "*a center for excellence, a hub of innovation, and a base for expertise and technology in high demand to address mine-impacted waters in communities throughout Colorado, across the West, and around the world*". SSINC will:

- Catalyze collaborative innovation to advance technology options and sustainable best practices for improving water quality;
- Fill science and technology information gaps regarding remediation and treatment of acid rock drainage;
- Identify ways to improve the efficiency of state and federal policies in order to bring new solutions to the ground and market more rapidly;
- Support entrepreneurs and partners to design, test, and advance their technologies to market;

Water Plan grant funds would be used to (1) coordinate the Steering Committee to develop a business model for SSINC; (2) support the 3rd Annual Silverton Innovation Expo; and (3) co-sponsor the first Idea Mine Innovation Water Challenge. This funding will support marketing, communications, and outreach for each event, as well as establish a clear business case for the Center and future offerings.

This project has received a support letter from the Southwest Basin RoundTable. The applicant believes this initiative supports the values of the Colorado Water Plan by incorporating collaboration and innovation in order to: (1) build a ***productive economy*** that supports Silverton and other Colorado towns by (2) ***advancing efficient and effective water infrastructure*** for water treatment, and (3) improve mine-related impairments ***to protect a strong environment*** that includes healthy watersheds, rivers, and streams (Chapter 1, p. 1-6).

The applicant has been awarded five previous CWCB grants dating back to 2016; four WSRF grants and one IPCP grant.

Last Updated: June 2018

Colorado Water Conservation Board

Water Plan Grant Application

Instructions

To receive funding for a Water Plan Grant, applicant must demonstrate how the project, activity, or process (collectively referred to as "project") funded by the CWCB will help meet the measurable objectives and critical actions in the Water Plan. Grant guidelines are available on the CWCB website.

If you have questions, please contact CWCB at (303) 866-3441 or email the following staff to assist you with applications in the following areas:

Water Storage Projects	Anna.Mauss@state.co.us
Conservation, Land Use Planning	Kevin.Reidy@state.co.us
Engagement & Innovation Activities	Ben.Wade@state.co.us
Agricultural Projects	Alexander.Funk@state.co.us
Environmental & Recreation Projects	Chris.Sturm@state.co.us

Water Project Summary

Name of Applicant	Mountain Studies Institute
Name of Water Project	Silverton Science & Innovation Center (SSINC)

CWP Grant Request Amount	$ 70,223
Other… Coutts and Clark Foundation	$15,000
Other….Innovation Expo registration & sponsorships (based on 2018 attendance)	$15,744
Other… Private Donations	$3,000
Other… Foundations (multiple)	$5,000 (requested)
Other… Start-up Colorado	$2,000 (requested)
Other… EDA Adjustment	$20,000 (requested)
Other… Partner in-kind	$9,000
Applicant Funding Contribution	$4,094 cash, $13,499 in-kind
Total Project Cost	$157,560

Name of Grantee(s) Mountain Studies Institute

Last Updated: June 2018

679 E 2nd Ave, Suite #8
FEIN 73-1644103
Organization Contact Marcie Bidwell
Position/Title Executive Director
Email marcie@mountainstudies.org
Phone 970-387-5161
Grant Management Contact ***Same as above***
Position/Title
Email
Phone
Name of Applicant (if different than grantee) **NA**
Mailing Address
Position/Title
Email
Phone

Description of Grantee/Applicant

Provide a brief description of the grantee's organization (100 words or less).

Mountain Studies Institute (MSI) is a 501(c)(3) non-advocacy, not-for-profit mountain research and education institution established in 2002 in Silverton, Colorado. MSI has been asked by the local community of Silverton and their partners to lead the development of an innovation center for addressing abandoned and draining mines. MSI's mission is to empower communities, managers, and scientists to innovate solutions through mountain research, education and practice. We empower communities to utilize science and innovate solutions that address current and legacy issues and to improve our communities' quality of life.

Type of Eligible Entity (check one)

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	Public (Government): 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.
	Public (Districts): Authorities, Title 32/special districts (conservancy, conservation, and irrigation districts), and water activity enterprises.
	Private Incorporated: Mutual ditch companies, homeowners associations, corporations.
	Private Individuals, Partnerships, and Sole Proprietors: Private parties may be eligible for funding.
x	**Non-governmental organizations (NGO):** Organization that is not part of the government and is non-profit in nature.
	Covered Entity: As defined in Section 37-60-126 Colorado Revised Statutes.

Type of Water Project (check all that apply)	
	Study
	Construction
	Identified Projects and Processes (IPP)
x	Other- Innovation Project

Category of Water Project (check the primary category that applies and include relevant tasks)		
	Water Storage - Projects that facilitate the development of additional storage, artificial aquifer recharge, and dredging existing reservoirs to restore the reservoirs' full decreed capacity and Multi-beneficial projects and those projects identified in basin implementation plans to address the water supply and demand gap.. *Applicable Exhibit A Task(s):*	
	Conservation and Land Use Planning - Activities and projects that implement long-term strategies for conservation, land use, and drought planning. *Applicable Exhibit A Task(s):*	
X	Engagement & Innovation - Activities and projects that support water education, outreach, and innovation efforts. Please fill out the Supplemental Application on the website. *Applicable Exhibit A Task(s):*	
	Agricultural - Projects that provide technical assistance and improve agricultural efficiency. *Applicable Exhibit A Task(s):*	
	Environmental & Recreation - Projects that promote watershed health, environmental health, and recreation. *Applicable Exhibit A Task(s):*	
	Other	Explain:

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Location of Water Project	
Please provide the general county and coordinates of the proposed project below in **decimal degrees**. The Applicant shall also provide, in Exhibit C, a site map if applicable.	
County/Counties	Initially: Southwest Colorado Mining and Mineral Belt, including San Juan, Ouray, San Miguel, Mineral and Hinsdale counties. Ultimately, the SSINC will serve all of Colorado and the Rocky Mountain West with legacy mines
Latitude	37.8119° N
Longitude	107.6645° W

Water Project Overview

Please provide a summary of the proposed water project (200 words or less). Include a description of the project and what the CWP Grant funding will be used for specifically (e.g., studies, permitting process, construction). Provide a description of the water supply source to be utilized or the water body affected by the project, where applicable. 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, and area of habitat improvements, where applicable. 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, Other Funding Sources/Amounts and Schedule.

The vision of Silverton's Science & Innovation Center (SSINC) is to be a consortium of businesses, researchers and agencies to advance technology, catalyze science, and support creative solutions to advance hard rock mine remediation and improve water quality and treatment. SSINC will become a center for excellence, a hub of innovation, and a base for expertise and technology in high demand to address mine-impacted waters in communities throughout Colorado, across the West, and around the world. SSINC will:

- Catalyze collaborative innovation to advance technology options and sustainable best practices for improving water quality;
- Fill science and technology information gaps regarding remediation and treatment of acid rock drainage;
- Identify ways to improve the efficiency of state and federal policies in order to bring new solutions to the ground and market more rapidly;
- Support entrepreneurs and partners to design, test, and advance their technologies to market;

.
CWCB grant funding will support MSI to (1) coordinate the Steering Committee to develop a business model for SSINC; (2) support the 3rd Annual Silverton Innovation Expo; and (3) co-sponsor the first Idea Mine Innovation Water Challenge. This funding will support marketing, communications, and outreach for each event, as well as establish a clear business case for the Center and future offerings.

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Measurable Results		
To catalog measurable results achieved with the CWP Grant funds, please provide any of the following values as applicable:		
NA	New Storage Created (acre-feet)	
NA	New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive	
NA	Existing Storage Preserved or Enhanced (acre-feet)	
NA	Length of Stream Restored or Protected (linear feet)	
NA	Efficiency Savings (indicate acre-feet/year OR dollars/year)	
NA	Area of Restored or Preserved Habitat (acres)	
NA	Quantity of Water Shared through Alternative Transfer Mechanisms	
NA	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning	
NA	Number of Coloradans Impacted by Engagement Activity	
	Other	Explain: Add significant capacity to accelerate technology to address draining mines and improve water quality by engaging businesses, innovators, universities, and students in solving legacy water challenges (Education, Outreach, Innovation measurable objectives, Colorado's Water Plan)

Water Project Justification
Provide a description of how this water project supports the goals of Colorado's Water Plan, the most recent Statewide Water Supply Initiative, and the applicable Roundtable Basin Implementation Plan and Education Action Plan. 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). The proposed water project shall be evaluated based upon how well the proposal conforms to Colorado's Water Plan Framework for State of Colorado Support for a Water Project (CWP, Section 9.4, pp. 9-43 to 9-44;)

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SSINC & Colorado's Water Plan
The SSINC initiative supports the values of the Colorado Water Plan (CWP) by incorporating collaboration and innovation in order to: (1) build a ***productive economy*** that supports Silverton and other Colorado towns by (2) ***advancing efficient and effective water infrastructure*** for water treatment, and (3) improve mine-related impairments ***to protect a strong environment*** that includes healthy watersheds, rivers, and streams (Chapter 1, p. 1-6).

The Challenge: Thousands of orphaned and abandoned mines in the San Juan Mountains of Colorado, across the Rocky Mountain West, and around the world have substantial impacts on the quality of increasingly valuable freshwater resources. Current envelope-pushing efforts to address this challenge have, in isolation, focused on water treatment, surface and source-control management, and a myriad of alternative approaches and technologies. **Yet, no initiative embraces a systems approach that combines established remediation concepts with a focus on emerging technologies; business, market and public perspectives; and needed policy reforms.**

The Costs: The problem with abandoned and orphaned mines is that there is no identifiable responsible party to foot the bill for cleanup. Treating the water flowing *from a single draining mine* such as the Climax Mine Superfund site with current state-of-the-art technologies can cost Colorado's tax payers $2M annually (https://www.denverpost.com/2018/07/10/colorado-summitville-mine-cleanup/). Colorado Department of Reclamation, Mining and Safety have identified over 23,000 abandoned mines that pose potential non-point source issues for water quality and over 270 actively draining abandoned mines within the state, and US Department of Interior has identified over 500,000 sites across the West.

The Solution: Addressing abandoned and draining mines is a highly complex social and environmental problem that demands an integrated, holistic approach. To succeed, we must pivot from isolated improvements developed in information silos, to an approach that recognizes the advantages of collaboration, innovation, adaptive management, and solution-driven approaches. SSINC offers such a platform for a collaborative innovation ecosystem for Colorado's mineral belt and legacy mine issues.

In response to the Gold King Mine wastewater spill of 2015, the Bonita Peak Mining District outside of Silverton, Colorado was designated as a Superfund Site with the support of the community, the State of Colorado, and other stakeholders. This spill and the resulting fresh focus on the issue of acid rock drainage is an opportunity to bring stakeholders and regulators together to collaborate on science, technological innovation, and improvements to the regulatory process to develop and apply real and pragmatic solutions to the ground and the water.

Following the Gold King Mine spill, stakeholders in Silverton and across Colorado asked Mountain Studies Institute (MSI) to lead a bold new approach to accelerate solutions by forming a "center for innovation." The goal of SSINC is to advance sound solutions to clean toxic water from draining mines and associated contaminated mine lands. What distinguishes our approach from others is (1) combining a public-private partnership model for community development with (2) a business incubator/accelerator approach to supporting the full ecosystem necessary to advance solutions to clean water and reduce the environmental impact of mining.

CWP Outreach, Education, and Public Engagement (Chapter 9.5). A key objective of MSI and SSINC is to engage Colorado's innovation community and future talent (high school and college students) in opportunities to sharpen their skills and seed their interest in water challenges. Similar to TAP-IN, for the west slope of Colorado SSINC is an initiative to engage "Colorado's innovation community to help solve, develop an award program, and engage Coloradans in the challenge" to address Colorado's water challenges. To develop our concept of an Innovation Center, we hosted the inaugural Silverton Innovation Expo in 2017, which drew 75+ businesses, agencies, researchers, entrepreneurs, industry, and nonprofits from five states to a 2-day workshop. Following

the Expo, we formed a Steering Committee with 20 official members. Our second Expo is scheduled for August 28-30, 2018, anticipating 120 people and 30 speakers, and demonstrations and tours highlighting innovations in water, treatment, monitoring and investigation technologies. The Expo will include a Business Bootcamp, Reverse Pitch, and tours of treatment facilities, working mines and potential testing sites for developing technologies. For 2019, we will build upon these initial steps to (1) host an Idea Mine Water Innovation Challenge that engages college students and innovators.

Colorado Nonpoint Source Management Plan. The great majority of the Total Maximum Daily Loads (TMDLs) developed by the Division 2012 Colorado Nonpoint Source Management Plan Page 8 (89%) addresses mine-related impairments, mostly due to legacy mining. These impairments are considered nonpoint sources because they are related to runoff and drainage from Abandoned Mine Lands (AML) sites for which there are no remaining financially viable "responsible parties". Legacy mining problems are a priority for the NPS Management Plan for the next 5 years.

Southwest Basin Roundtable IPP- Animas River Stakeholders Group (ARSG) and water quality improvements in the Animas River. Poor water quality in the form of high metal concentrations has essentially the same impacts as depleted or non-existent flows in a stream, namely an impaired or eliminated fishery and associated aquatic systems. Metal loading has impacted aquatic life in the Animas River from above Silverton through Durango. Over the past 20 years, the Animas River Stakeholders Group (ARSG), a partner of MSI (see their letter of support, Exhibit C), has pursued advanced technologies and innovations through competitive challenges and working with entrepreneurs to test and develop their concepts in the watershed. ARSG is contributing technical leadership to the SSINC project.

Related Studies

Please provide a list of any related studies, including if the water project is complementary to or assists in the implementation of other CWCB programs.

Animas Watershed Plan and the **Upper Animas Use Attainability Assessment** has provided significant detail to support the need for mine-related cleanup and reclamation. While there is an incredible wealth of information provided into these plans, the implementation of them require constant and emergent information sharing as new data become available in light of the increasing water quality concerns in Cement Creek, Bonita Peak Mining District, and the area impacted by the Gold King incident. The Animas River Community Forum (ARCF) has identified a need for more active stakeholder engagement in the lower Animas watershed in order to fully accomplish either of these plans.

Southwest Basin Round Table, Basin Implementation Plan (BIP), 2015. Challenges related to historic mining and natural mineralization in the upper Animas River are listed as an on-going priority including improving water quality and aquatic habitats through collaborative processes (IPP 22-A, 23-A, 33-A). Significant needs identified in the BIP are mine remediation, improving water quality, and reducing sedimentation laden with heavy metals.

Southwest State-wide Water Supply Initiative 2010 Basin Report, by Southwest Basin Round Table. This project supports multiple goals for the Animas River watershed and Animas River Stakeholder Group goals, including (1) reducing sediment and metal loading, and (2) improving surface water quality and instream flows impacted by historic mining activities.

Southwest Water District Regional Five Basins Initiative, River Protection Working Groups. The River Protection Workgroup or "RPW" was a community-driven project in Southwest Colorado that covered five river and stream segments. The multi-year project brought diverse stakeholders together in a collaborative process to determine values needing protection – ecological, economic and social; to recommend the types of tools necessary, either existing or newly-developed, to protect the values; and

to make recommendations and take action in the context of striking a balance between the protection of natural values and water development including the balance of legacy and future mining opportunities and impacts.

Previous CWCB Grants, Loans or Other Funding

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; 6) Percentage of other CWCB funding for your overall project.

WSRF 2018- 1) Applicant: Mountain Studies Institute (MSI), **2) Water Activity Name:** Animas River Invasive Species Removal Program Phase II, **3) Approving RT:** Southwest Basin Roundtable, **4) SWBRT date:** April, 2018; **CWCB date:** May 2018; , **5) Contract number:** POGGI PDAA 201800000, **6) Percentage of Award:** The total award was $48,000, which was 50% of our total project cost. **Completion date:** June 2020

WSRF 2018- 1) Applicant: Mountain Studies Institute (MSI), **2) Water Activity Name:** San Juan Stream Management Plan, **3) Approving RT:** Southwest Basin Roundtable, **4) SWBRT date:** February, 2018; **CWCB date:** March 2018; , **5) Contract number:** POGGI PDAA 201800000-201, **6) Percentage of Award:** The total award was $28,919, which was 50% of our total project cost. **Completion date:** June 2020

CWCP IPCP 2016- 1) Applicant: Mountain Studies Institute (MSI), **2) Water Activity Name:** Invasive Phreatophyte Control Program: Animas River Invasive Species Removal Program Phase I, **3) Approving RT:** Southwest Basin Roundtable, **4) SWBRT date:** November 13, 2015; **CWCB date:** April 2016; , **5) Contract number:** CTGG1 PDAA 2016-1860, **6) Percentage of Award:** The total award was $195,000, which was 44% of our total project cost. **Completion date:** June 2018

WSRF 2017-Nov) ***Applicant:*** Mountain Studies Institute (MSI); ***2) Project Name:*** San Juan Headwaters Stream Management Plan Phase I; ***3) Approving RT:*** Southwest Basin Round Table; ***4) CWCB Date:*** April 2018; ***5) Contract number*** : TBD ***6) Completion Date:*** December 2019

WSRF 2017-1) ***Applicant:*** Mountain Studies Institute (MSI); ***2) Project Name:*** Animas River Community Forum in the Southwest Basin, Phase II; ***3) Approving RT:*** Southwest Basin Round Table; ***4) CWCB Date:*** July 2017; ***5) Contract number*** : CTGG1 2018-201, POGG1 PDAA 201800000201, ***6) Completion Date:*** April 2018

WSRF 2016-1) ***Applicant:*** Mountain Studies Institute (MSI); ***2) Project Name:*** Animas River Community Forum, Phase II; ***3) Approving RT:*** Southwest Basin Round Table; ***4) CWCB Date:*** April 2016; ***5) Contract number***: POGG1 2016-794, POGG1 PDAA 20160000000000000794, ***6) Completion Date:*** September 2017

Taxpayer Bill of Rights

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

Not Applicable.

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Submittal Checklist	
	I acknowledge the Grantee will be able to contract with CWCB using the Standard Contract.
Exhibit A	
x	Statement of Work(1)
x	Budget & Schedule(1)
	Engineer's statement of probable cost (projects over $100,000)
	Letters of Matching and/or Pending 3rd Party Commitments(1)
Exhibit C	
x	Map (if applicable)(1)
x	Photos/Drawings/Reports
x	Letters of Support **(included from: Town of Silverton, San Juan County, TAP-IN, Southwest Innovation Corridor, Fort Lewis College and the Animas River Stakeholders Group)**
	Certificate of Insurance (General, Auto, & Workers' Comp.) (2)
	Certificate of Good Standing with Colorado Secretary of State(2)
	W-9(2)
	Independent Contractor Form(2) (If applicant is individual, not company/organization)
Engagement & Innovation Grant Applicants ONLY	
x	Engagement & Innovation Supplemental Application(1)

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

Last Updated: June 2018

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

ENGAGEMENT & INNOVATION GRANT FUND SUPPLEMENTAL APPLICATION

Introduction & Purpose

Colorado's Water Plan calls for an outreach, education, public engagement, and innovation grant fund in Chapter 9.5.

The overall goal of the Engagement & Innovation Grant Fund is to enhance Colorado's water communication, outreach, education, and public engagement efforts; advance Colorado's water supply planning process; and support a statewide water innovation ecosystem.

The grant fund aims to engage the public to promote well-informed community discourse regarding balanced water solutions statewide. The grant fund aims to support water innovation in Colorado. The grant fund prioritizes measuring and evaluating the success of programs, projects, and initiatives. The grant fund prioritizes efforts designed using research, data, and best practices. The grant fund prioritizes a commitment to collaboration and community engagement. The grant fund will support local and statewide efforts.

The grant fund is divided into two tracks: engagement and innovation. The Engagement Track supports education, outreach, communication, and public participation efforts related to water. The Innovation Track supports efforts that advance the water innovation ecosystem in Colorado.

Application Questions

*The grant fund request is referred to as "project" in this application.

Overview (answer for both tracks)
In a few sentences, what is the overall goal of this project? How does it achieve the stated purpose of this grant fund (above)?
The overall goal of the project is to develop the Silverton Science and Innovation Center (SSINC), a high-impact innovation hub that combines a business accelerator approach with technology innovation to advance solutions for acid mine drainage and solve the technical challenges of water treatment and protection in high elevation, mountain environments. By utilizing a comprehensive approach to promoting key technologies, SSINC will advance a *West Slope hub* for a statewide water innovation ecosystem. SSINC will: (1) Catalyze collaborative innovation to advance technology options for improving water quality; (2) Fill science and technology information gaps regarding remediation and treatment of acid rock drainage; (3) Identify ways to improve the efficiency of state and federal policies in order to bring new solutions to the ground and market more rapidly; (4) Support entrepreneurs and partners to design and test in situ; and (5) Engage diverse stakeholders to promote a public-private model of community development that supports local economies and industry.
Who is/are the target audience(s)? How will you reach them? How will you involve the community?
SSINC is based on the premise that addressing abandoned and draining mines is a highly complex social and environmental problem that demands an integrated, holistic approach. To succeed, we must pivot from isolated improvements developed in information silos to an approach that recognizes the advantages of collaboration, innovation, adaptive management, and solution-driven approaches. Our audience encompasses the full ecosystem of partners and support to innovate water solutions. Our partners represent audiences in technology, chemistry, hydrology, metallurgy, communications,

Overview (answer for both tracks)
energy, physics, business, sensing, imaging, venture capital, startups, mining industry, education (high school and college), community leaders, and hydrology. We have a network of collaborators that include many multi-stakeholder groups with wide networks. In January 2018, MSI formed the SSINC Steering Committee, formalizing our initial list of 20 partner organizations and agencies. Many of our partners have access to their own water-interest community and share SSINC outreach and event materials with their membership. Our channels for outreach include social media, newsletters, email, word of mouth, and targeted outreach to key leaders and players. For our first Silverton Innovation Expo in 2017, we had 75+ people attend without any official or paid advertising other than word of mouth and, if registration is an indicator, we're likely to double that attendance at this year's Expo. The proposed efforts outlined in this grant will help us to continue existing efforts and expand our outreach through University and business partners both regionally and throughout the state.
Describe how the project is collaborative or engages a diverse group of stakeholders. Who are the partners in the project? Do you have other funding partners or sources?
Collaboration has a long history in the Animas River drainage, where the Animas River Stakeholders Group (ARSG, see Exhibit C for a letter of support) have been exploring innovative technologies for mine remediation for three decades. We are continuing and expanding upon their diverse foundation by adding business, education, and entrepreneur networks to the technical collaborations. SSINC's steering committee includes representatives from Town of Silverton, San Juan County, Animas River Stakeholders Group, United States Geological Survey, University of Colorado, San Juan National Forest, Colorado Bureau of Land Management, Fort Lewis College, Strategic Environmental Analysis, Colorado Mining Association, Resource Capital Funds, San Juan Land Holding Company, Newmont Mining Corporation, Trout Unlimited, Southwest Innovation Corridor, Colorado Department of Mining Reclamation and Safety, Colorado School of Mines, U.S. Environmental Protection Agency, consultants, and Mountain Studies Institute. In addition to the Steering Committee members, we have teamed up with Telluride Venture Accelerator, Startup Colorado, and Southwest Colorado Accelerator Program for Entrepreneurs. SSINC was started with a grant from the EPA, private foundations, and MSI general funds. In addition, many of the Steering Committee volunteer time and help secure funding from their agency/organization. Registration fees in part support the Silverton Innovation Expo, with the ultimate goal of the event being self-generating. We have successfully received funding, challenge grants, and sponsorships from over 15 companies and agencies.
Describe how you plan to measure and evaluate the success and impact of the project?
Success will be measured in evaluating the growth, collaboration, and productivity of SSINC's community. Ultimately we seek to measure shared metrics of how many problems we solve, challenges we complete, startups created/supported, engaged communities and stakeholders, dollars invested, and jobs created. However, we are in the forming stage of organizational development. In this next year, we intend to measure: • Number of participants, sectors, and partners engaged • Number of events • Number of partners enrolled within our network • Extent of media reach (number of people, hits, returns) • Number of topics covered • Expanded understanding of the issues

Overview (answer for both tracks)
What research, evidence, and data support your project?
We are in the process of completing a comparative analysis/niche segmentation to understand the full suite of options and models, especially for private-public partnerships for innovation. Based on our initial assessment, SSINC will offer a rare but critical approach to promoting innovation that offers not only boots on the ground testing, but a business ecosystem to promote and advance successful technologies, and a culture of shared lessons learned. We are modeling our efforts based on a hybrid model borrowing from TAP-IN, National Renewable Energy Lab, and other international efforts. Further, we are utilizing the Collective Impact model for social change from the Stanford Social Innovation Review, which emphasizes five distinct components as critical to solving complex societal problems: a shared vision, shared measurement of success, mutually reinforcing activities, continuous communication, and backbone support. As we collect our own data and metrics (above) we will be able to provide our own assessments.
Describe potential short- and long-term challenges with this project.
Short-term challenges for the SSINC are finding the right resources and developing the right model to support long-term sustainability that includes the right people, funding mix, technical assistance, mentors and partners (hence the need for a feasibility study, as outlined in this proposal). Working to solve draining mines and to protect and improve water quality has many long-term challenges. First, legacy mines are often abandoned, meaning that there is no responsible party or funding source to assist with solutions. Further, abandoned mines are then often public lands, which adds difficulty of federal management complexities and policy limitations. Legal liability is daunting. And finally, the technical difficulties associated with working with heavy metals and water interactions is exceptionally complex. However, these challenges just reinforce the opportunity for a diverse, creative, and interdisciplinary approach like SSINC to address these challenges.

Please fill out the applicable questions for either the Engagement Track or Innovation Track, unless your project contains elements in both tracks. If a question does not relate to your project, just leave it blank. Please answer each question that relates to your project. Please reference the relevant documents and use chapters and page numbers (Colorado's Water Plan, Basin Implementation Plan, PEPO Education Action Plan, etc.).

Engagement Track
Describe how the project achieves the education, outreach, and public engagement measurable objective set forth in Colorado's Water Plan to "significantly improve the level of public awareness and engagement regarding water issues statewide by 2020, as determined by water awareness surveys."
In order to advance public awareness and engagement regarding water issues, the SSINC will become a center of excellence that brings people together and advances technologies, helps to better define and articulate the water challenge, and promotes rising talent committed to solving water quality issues through partnerships with high schools and Universities. This approach is three-tiered and invites feedback from and informs concerned citizens, engages businesses and technologies in water awareness who might not otherwise be engaged, and promotes innovation to ensure longer-term literacy and engagement with water issues.

Describe how the project achieves the other measurable objectives and critical goals and actions laid out in Colorado's Water Plan around the supply and demand gap; conservation; land use; agriculture; storage; watershed health, environment, and recreation; funding; and additional.
CWP Goals that are Relevant to our Project: **F. Watershed Health and Environment.** According to the Colorado Department of Public Health and Environment, there are more than 23,000 abandoned mines in Colorado and 1,800 streams impaired due to mine related pollution. The presence of heavy metals and contaminants of concern have both chronic and acute impacts to environment and watershed health, and increase costs of downstream water treatment. Statewide improvements in water quality from reclaiming abandoned mines and treating acid mine drainage would improve recreational opportunities and overall watershed health. **H. Education, Outreach, and Innovation.** MSI's efforts will provide a **partner for CWCB and TAP-IN to engage in southwest Colorado** and rural communities. Additionally, The Idea Mine Water Challenge would potentially count towards **one of the five key water challenges** called out in CWP. Further, our **activities will engage students from Fort Lewis College**, Western State University, and Colorado School of Mines students.
Describe how the project achieves the education, outreach, and public engagement goals set forth in the applicable Basin Implementation Plan(s).
The Center would contribute to meeting the Southwest Basin Implementation Plan Theme Priority F Preserve Water Quality, by accelerating technologies with potential to improve water quality in streams in the basin that are impaired by mine-related or natural background levels of heavy metals; and F2, designating the Center an IPP to improve water quality.
Describe how the project achieves the basin roundtable's PEPO Education Action Plans.
Southwest Basin Implementation Plan Priorities for Education and Outreach include developing booklets which describes the different organizations in southwest Colorado involved with water and the different uses of water. SSINC would be able to network the different users of water (Priority 1) through the innovation hub and provide information material (Priority 2) to improve water quality.

Innovation Track
Describe how the project enhances water innovation efforts and supports a water innovation ecosystem in Colorado.
The development and launch of the challenge outlined in the Scope of Work will help articulate and define a "problem to solve" that becomes a collaborative nexus. In this way, the SSINC will act as a center of excellence more than just innovation hub by bringing together critical partners to solve a specific problem. Initial stakeholder research says all parts of ecosystem need to be present to succeed (business, scientists, industry, agency, community, rising talent). SSINC will promote the advancement of appropriate technologies for water quality improvements, and build an ecosystem to ensure those ideas have clear, established pathways for greater positive impacts statewide.
Describe how the project engages/leverages Colorado's innovation community to help solve our state's water challenges.

Innovation Track
Through existing connections with TAP-IN, the Southwest Innovation Corridor, the Telluride Venture Accelerators, Greater Colorado Venture Fund, Startup Colorado, local high schools, Universities/colleges, and others, SSINC will promote best practices, further existing dialogues and networks, create opportunities for broader networking, and establish clear pathways for innovative technologies and ideas to advance.
Describe how the project helps advance or develop a solution to a water need identified through TAP-IN and other water innovation challenges. What is the problem/need/challenge?
While the SSINC does not address a specific TAP-IN challenge *exactly*, it takes a similar and comprehensive approach to addressing challenge of abandoned mines and their impact on critical headwaters within the state. The impacts of the over 23,000 draining mines in Colorado negatively impact municipalities trying to treat the water or rely on streams and rivers for recreational use, as well as the overall health of the watershed. SSINC will address this significant challenge by developing a center that advances innovation, brings new, relevant technologies to market, and invites a broad range of stakeholders (from industry to students) to the space to engage with improving this critical state resource.
Describe how this project impacts current or emerging trends; technologies; clusters, sectors, or groups in water innovation.
SSINC both impacts and responds to emerging trends. We've responded to feedback from our steering committee and industry representatives about the critical nature of water as an asset. It is widely recognized that acid mine drainage is a critical, central, and complex problem that currently requires millions of tax dollars annually using current technology. The SSINC will impact emerging trends by unifying some of the best ideas out there for advancing innovative technology to bring them to market. Emerging technologies and opportunities for improvement include: • Advances in monitoring and sensing equipment to be able to alert downstream communities and treatment centers of emerging changes in water quality. • Improvements in our understanding of (1) what generates the acid in acid mine drainage and (2) where the water is coming from will enable better, targeted and more efficient solutions • Advances in automated, robotic, and drone-based technology will enable monitoring and treatment in areas currently unsafe or inaccessible to industry professionals • New techniques for treating water quality using advances in polymers, sequencing, and physical/chemical properties of water may eliminate the need for expensive treatments and the mining of lime and treatment agents, reducing the costs, carbon footprint, and other impacts from water treatment. • Innovations in energy production and micro hydro may enable the treatment of water in areas which currently have no access or power to support cleanup.

Last Updated: July 5, 2017

Colorado Water Conservation Board
Water Plan Grant - Exhibit A

Statement Of Work	
Date:	**July 31, 2018**
Name of Applicant:	**Mountain Studies Institute**
Name of Water Project:	**Silverton Science and Innovation Center (SSINC)**
Funding Source:	**CWCB Colorado Water Plan Engagement & Innovation Activities**

Water Project Overview: Please provide a summary of the proposed water project (200 words or less). The same summary can be used from Page 5 of the CWP Grant Application.

The vision of Silverton's Science & Innovation Center (SSINC) is to host a consortium of businesses, researchers and agencies to advance technology, catalyze science, and support creative solutions to advance hard rock mine remediation and improve water quality and treatment. SSINC will become a center for excellence, a hub of innovation, and a base for expertise and technology that is in high demand to address mine-impacted waters in communities throughout the state, across the West, and around the world. SSINC will:

- Catalyze collaborative innovation to advance technology options and sustainable best practices for improving water quality;
- Fill science and technology information gaps regarding remediation and treatment of acid mine drainage;
- Identify ways to improve the efficiency of state and federal policies in order to bring new solutions to the ground and to market more rapidly;
- Support entrepreneurs and partners to design, test, and advance their technologies;

The ultimate goal of SSINC is to create a high-impact innovation center of excellence that combines a business accelerator approach to advance solutions for acid mine drainage and solve the technical challenges of water treatment and protection in high elevation, mountain environments.

Objectives: Our objectives are to:

CWCB grant funding will support SSINC's programs in 2018-2019, to (1) coordinate a Steering Committee to develop an innovator network, conduct a feasibility study, and produce a business plan; (2) support the 3rd Annual Silverton Innovation Expo to serve as proof of concept for SSINC and expand the program's network; (3) co-sponsor the first Idea Mine Innovation Water Challenge. This funding will support marketing, communications, and outreach for each event, as well as establish a clear business case for the Center and future offerings.

Last Updated: July 5, 2017

Tasks
Task 1 – Coordinate a Steering Committee and Innovator Network, Building a Business Plan
Description of Task:
MSI has already established a steering committee of invested partners to develop the business-innovation-regulatory ecosystem that is necessary to support the development SSINC. MSI (applicant) will serve as the project coordinator, guiding the 20-member steering committee to advise on the development of the Innovation Expo and the SSINC activities. Goals for the Steering Committee include: (1) Communicate a collective path forward by defining and articulating the need, purpose, and outputs of the Center, (2) Identify key partners on the leading edge of industry, science and technology, and (3) Tap into resources and opportunities to target financial and other support for the Center. Further, the SSINC Steering Committee will engage an independent contractor or entity to assist with completing a feasibility study and developing a business plan for the Center. The feasibility study will inform the business plan through a needs assessment and systems map to understand the universe of innovation and water technologies, expert knowledge, and resources available to SSINC.
Method/Procedure:
MSI will lead steering committee meetings to engage the specific needs of diverse sectors and stakeholders to adequately address the technical, social, institutional, and academic elements necessary for the program to succeed. In addition, MSI will form a network for innovation partners to stay informed of activities, Innovation Expo, pitch events, and other programs of the Center. MSI will identify a qualified contractor, partner, or entity to lead the business plan effort. The Business plan will begin with a stakeholder assessment and problem-ecosystem mapping exercise. The business plan will guide the development of the Center in areas such as customer segments, value proposition, channels, customer relations, revenue streams, key resources, key activities, key partnerships, and cost structure.
Grantee Deliverable:
MSI will continue to engage 20+ people as steering committee members, representing the diversity of our stakeholders including innovators, mining, regulators, agencies, landowners, businesses, and government and identify additional committee members who can advance the vision and success of SSINC. A solid business plan with action items, resources identified, and organizational structure defined will go a long way to advance the Center.
CWCB Deliverable:
Deliverables: MSI will host six meetings, provide minutes and packet materials for each of the steering committee meetings, and provide CWCB a copy of the final business plan.

Tasks
Task 2 – Support the 3rd Annual Silverton Innovation Expo
Description of Task:
MSI and our partners will host the 3rd Annual Innovation Expo. This will be a two-day event that focuses on developing interest and capacity for advancing innovative concepts and technologies for addressing abandoned and draining mines. The Expo will: provide a forum for discussion and exchange of ideas, offer prime opportunities for exhibitors and speakers to showcase their innovative future technologies, provide tours and in-depth technology sessions, and allow time and space to build partnerships with other stakeholders. This event also provides an opportunity for MSI innovation partners (TAP-IN, SWIC, Telluride Venture Accelerator) to host Business Bootcamps to help advance ideas to market. At the 2019 Expo, MSI and partners will share the results of the 2018/2019 Idea Mine Water Innovation Challenge.
Method/Procedure:

Last Updated: July 5, 2017

Tasks
MSI will secure a venue, organize the logistics and facilities, market and promote the event, coordinate speakers and exhibits, and produce and share proceedings. MSI will fly in national experts (if funding allows) to increase the event's exposure and impact.
Grantee Deliverable:
MSI anticipates this event will continue to grow in size and scope each year. As outcomes, we will provide: two days of programming, videos and virtual materials from the sessions, and a proceedings document that captures the essence of the workshop sessions and advances both understanding the challenges associated with mine water remediation and innovative ideas for solving them. At least 10 businesses or startups will attend a Business Bootcamp and over 100 people will attend. Through SSINC will expand its network by 25%.
CWCB Deliverable:
MSI will provide CWCB a written report with the measurable outcomes and impacts from the event, including photos and links to social media and outreach materials, as well as proceedings documents.

Tasks
Task 3 – Co-sponsor the first Idea Mine Water Innovation Challenge
Description of Task:
MSI and partners will host an Innovation Challenge, similar to Trout Tank by TAP IN and Denver Metro Chamber of Commerce. MSI will work with our partners and industry to pick a topic, recruit pitches, and engage the community. MSI will partner with the Southwest Innovation Corridor, Telluride Venture Accelerator, SCAPE, Fort Lewis College, Startup Colorado, Colorado School of Mines and Western State University to coordinate the event, market to the community, and access quality mentors and judges for the competition. As a way to enhance the quality and relevance of ideas presented as part of the Idea Mine Water Challenge, SSINC partners will host two workshops or sessions to dig deeper into the specific technological details of specific technical aspects that working with water in mine impacted areas present. Through the Challenge, entrepreneurs will improve their pitch and learn the Business Model Canvas. The Challenge will coach participants through a mini-course to improve their skills and help them find resources and funding. The program will culminate in a Final Pitch Event at the Silverton Innovation Expo in 2019.
Method/Procedure:
MSI will secure a venue (ideally, free of charge as an in-kind donation) and aim to have 40-50 attendees. MSI will partner with other organizations to develop the method of delivery for coaching, developing curriculum, and engaging the community and students.
Grantee Deliverable:
MSI will expand SSINC' s network to a larger business and entrepreneurial community across Colorado and the Rocky Mountain West to attract top thinkers in the mining and water space. SSINC will expand its network by 15%, including participation by students from at least three universities/colleges.
CWCB Deliverable:
MSI will provide CWCB a written report with the measurable outcomes and impact from the event, highlights from the workshops, photos, and links to social media and outreach materials.

Last Updated: July 5, 2017

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.

Reporting Requirements

Progress Reports: The applicant 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 applicant shall provide the CWCB a Final Report on the applicant'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.

The CWCB will withhold disbursement the last 10% of the budget until 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 purchase order or grant will be closed without any further payment.

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Plan Grant - Exhibit B
Budget and Schedule

Date: August 1, 2018

Name of Applicant: Mountain Studies Institute

Name of Water Project: Silverton Science & Innovation Center

Project Start Date: 1/1/2019

Project End Date: 10/30/2019

Task No.	Task Description	Task Start Date	Task End Date	Grant Funding Request	Match Funding	Inkind Match	Total
1	Steering Committee Feasibility Study	1/1/2019	10/31/2019	$32,750	$36,000	$11,250	$80,000
2	3rd Annual Innovation Expo	1/1/2019	10/31/2019	$19,209	$10,700	$5,625	$35,534
3	Idea Mine Innovation Water Challenge	1/1/2019	10/31/2019	$18,264	$18,138	$5,625	$42,027
			Total	$70,223	$64,838	$22,499	$157,560

EXHIBIT C

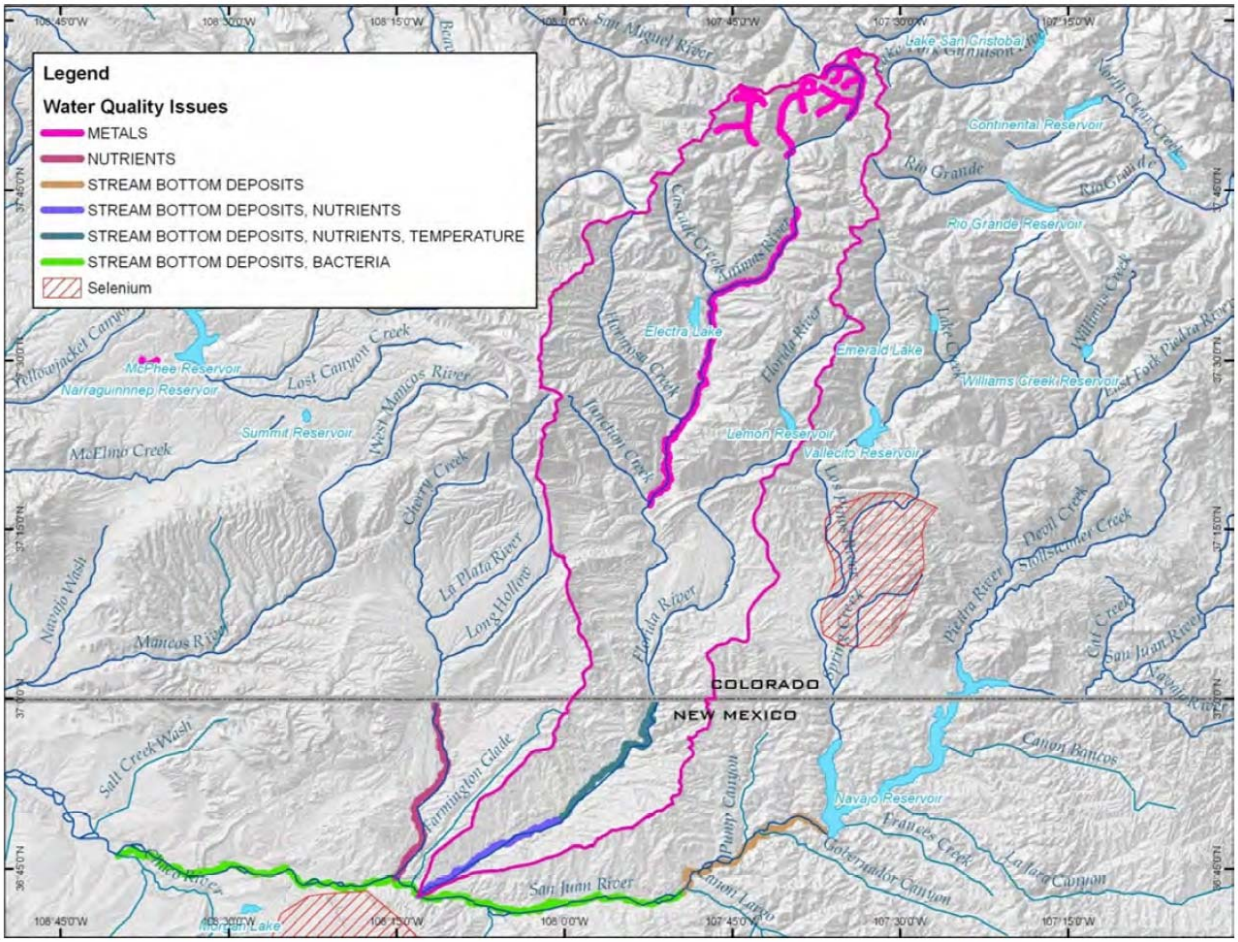

Figure 1: Map of the Animas Watershed from Upper Animas Mining District to San Juan Confluence

PHOTOS

Rory Cowie, PhD: MSI's Research Director and hydrologist working in the Bonita Peak Mining District

Water treatment demonstrations in the Bonita Peak Mining District

Collaboration in action: working to define the challenges of acid mine drainage at the first Innovation Expo in 2017

SOUTHWEST BASINS ROUNDTABLE
Michael Preston, Chair
c/o Dolores Water Conservancy District
P.O. Box 1150
Cortez, Colorado 81321
970-565-7562

October 29, 2018

Ben Wade, Engagement and Innovation Program
Colorado Water Conservation Board
1313 Sherman St., Room 718
Denver, CO 80203

RE: Silverton Science and Innovation Center

Dear Ben,

This letter is in support of the Silverton Science and Innovation Center (SSIC) proposal submitted to the Engagement and Innovation Program by Mountain Studies Institute.

The years of effort on the part of the Animas River Stakeholders Group in the Silverton area, and the Gold King Mine Spill into the Animas River in the Summer of 2015, followed by Super Fund designation set the stage for this effort to establish the Silverton Science and Innovation Center.

The establishment of the SSIC is timely given the challenges and opportunities currently faced in the Bonita Peak Mining District. The work of the Innovation Center will be of use in the many headwaters communities in the State of Colorado, with mining histories which present similar risks and challenges.

The Innovation Center is also an important economic development opportunity for Silverton and San Juan County, certified as a Colorado Opportunity Zone, USDA Drought Disaster Zone and Wildfire Disaster Area. The financial impact of the 416 fire of 2018 on the Silverton business community was devastating and the Innovation Center can provide an important boost to Silverton's recovery.

The proposed project is well aligned with the Colorado Water Plan including Colorado values on building a productive and vibrant community, efficient and effective water infrastructure, and a strong environment that improves mine related impairments to advance healthy watersheds, rivers, streams and wildlife (CWP, p. 1-6).

The Animas River Stakeholders Group, Southwest Basin Implementation Plan IPP 23-A, has been advocating such Innovation for over a decade and will a leadership partner in the formation of the Silverton Science and Innovation Center.

Please give this application your utmost consideration. You can contact me at 970-565-7562, mpreston@frontier.net, if you have questions or wish to discuss this application in more detail.

Sincerely,

Michael Preston, Chair
Southwest Basin Roundtable

SAN JUAN COUNTY
COLORADO

1557 GREENE STREET
P.O. BOX 466
SILVERTON, COLORADO 81433
PHONE/FAX 970-387-5766 sanjuancounty@frontier.net

July 27, 2018

Mr. Ben Wade
Colorado Water Conservation Board, Engagement and Innovation Activities
1313 Sherman St., Room 718
Denver, CO 80203

RE: CWCB'S Engagement and Innovation Activities Grant Funding

Dear Mr. Wade,

San Juan County would like to offer their full support for Mountain Studies Institute's (MSI) grant application for a Colorado Water Plan Grant for engagement and innovation activities. The vision of a Science and Innovation Center in Silverton falls directly in line with the Colorado Water Plan and the call to action for creative, "outside of the box" thinking to address one of the state's greatest water challenges: the impacts that current and legacy mines have on water quality throughout the state (and the West).

The Silverton Science and Innovation Center supports the values of the Colorado Water Plan (CWP) by incorporating collaboration, innovation, and (1) promoting a ***productive economy*** that supports Silverton and other cities by (2) ***advancing efficient and effective water infrastructure*** for water treatment, and (3) improving mine-related impairments ***to protect a strong environment*** that includes healthy watersheds, rivers, and streams (Chapter 1, p. 1-6).

From San Juan County's perspective, MSI's vision of advancing mine reclamation technology related to water quality builds upon a long local tradition of innovation and creates critical economic opportunities for our rural town and addresses critical issues related to water quality in the Animas River. Further, challenges related to historic mining and natural mineralization in the upper Animas River are listed as an ongoing priority identified through the 2016 Southwest Basin Roundtable Basin Implementation Plan (IPP 22-A, 23-A, 33-A) including improving water quality and aquatic habits through collaborative processes. The future and well-being of San Juan County are deeply rooted to water quality in the Animas River; technologies developed or advanced to address those challenge here will be useful state and nationwide.

In addition to the reasons stated above, we support MSI's proposal because:

- First, we value the technical assistance and resources that MSI brings to our community. MSI provides a unique role in that they are credible, local, and assessable resource that is tuned into our community.
- Second, we strongly encourage the Silverton Science and Innovation Center as it will bring resources, visitors, and economic development to Silverton in San Juan County.

As proof of concept for the Center, MSI has partnered with the Town of Silverton and San Juan County to host an Innovation Expo. Now in its second year, the Expo drew 75+ participants. And, while the 2018 conference doesn't happen until late August, we can already report being impressed by the quality of people at the table, the collaborative approach, and the creative thinking involved in developing an agenda that promotes innovative technology, advances businesses and ideas that are working to solve challenges associated with acid mine drainage, and brings together agency representatives and local decision makers, business professionals and think-tanks, technology and legal experts, and engaged citizens.

The Silverton Innovation Expo is MSI's "proof of concept" for the Center, and it's just the beginning; MSI has already been working with key players at the local, state, and federal level to explore and advance our bigger vision for a Science & Innovation Center. While this Center is focused on mine remediation technology, the advances in water treatment would have a profound impact statewide – and beyond.

We are excited to help MSI move the conversation about water quality and innovative mine reclamation technologies forward.

Sincerely,

William A. Tookey
County Administrator

Steven M. Elias, Dean
School of Business Administration
1000 Rim Dr
Durango, CO 81301-3999
970-247-7294 tel
970-247-7205 fax

July 27, 2018

Colorado Water Conservation Board
1313 Sherman Street, Room 718
Denver, CO 80203

RE: Colorado Water Conservation Innovation Fund

Dear Colorado Water Conservation Board:

As the dean of the Fort Lewis College (FLC) School of Business Administration (SOBA), I would like to express our full support for Mountain Studies Institute's (MSI) grant application for funding the development of an Innovation Center and Innovation Challenge. MSI's goal of utilizing the societal need to address legacy mining and water quality issues as a focus of their Mine Challenge provides a real-world challenge for our students to engage and learn from their direct experience.

Fort Lewis College seeks to challenge students and promote an environment of creativity and innovation, while enabling them to be productive members of society. To that end, SOBA began the Hawk Tank Business Plan Competition in 2016 and has offered educational opportunities, mentoring, and financial support for students and recent alumni who dreamed of owning their own business. In 2018, we collaborated with the Southwest Innovation Corridor to offer a specific Innovation Award for innovative technologies to honor and encourage new technology innovations. MSI's initiative is in excellent alignment with SOBA's desire to create similar innovative and entrepreneurial opportunities for our students.

It is my hope that MSI's proposal to Colorado Water Conservation Board's Innovation Fund will support a needed and exciting opportunity for FLC students and other colleges to participate in real world, need-driven innovation.

For the Western Slope of Colorado, MSI's concept represents a unique opportunity for our students.

We fully support MSI in their efforts to unite a network of partners to innovate the way we engage students in addressing real world challenges for today and the future.

Thank you in advance for considering their proposal.

Regards,

Steven Elias, Dean
School of Business Administration
Fort Lewis College

970-903-4881; selias@fortlewis.edu

July 26, 2018

Mr. Ben Wade
Colorado Water Conservation Board
1313 Sherman St., Room 718
Denver, CO 80203

RE: CWCB'S Water Plan Gran Fund -- Engagement and Innovation Category -- Letter of Support

Dear Mr. Wade,

TAP-IN Colorado would like to offer its support for the Mountain Studies Institute's (MSI) grant application for a Water Plan Grant for engagement and innovation activities. MSI's vision of a Science and Innovation Center in Silverton falls directly in line with Colorado's Water Plan and the call to action in Chapter 9.5 for creative, "outside of the box" thinking to address our state's water challenges.

MSI's grant tackles a major challenge: the impacts that current and legacy mines have on water quality throughout the state (and the West). MSI's vision of advancing mine reclamation technology related to water quality furthers our goals around innovation in the water sector and solving the states greatest water challenges. The programming takes a similar approach to TAP-IN, to try and bring diverse voices and perspectives to the table so we bring new approaches to our challenges. And, their collaborative approach to solving challenges in the water space is similar and synergistic to the efforts of TAP-IN. The location of this Center in a smaller, rural community is also key as we need to tackle challenges in both urban and rural areas. Plus, this helps makes innovation more accessible for the southwest part of the state.

This year, TAP-IN was asked to present at MSI's Innovation Expo in Silverton. This is the second year of the Innovation Expo. In 2017, the Expo drew 75+ participants. And, while the 2018 conference does not happen until late August, we are already impressed by the quality of people at the table, the collaborative approach, and the creative thinking involved in developing an agenda that promotes innovative technology, advances businesses and ideas that are working to solve challenges associated with acid mine drainage, and brings together agency representatives and local decision makers, business professionals and think-tanks, technology and legal experts, and engaged citizens.

The Silverton Innovation Expo is MSI's "proof of concept" for the Center. MSI has already been working with key players at the local, state, and federal level to explore and advance their bigger vision for a Science & Innovation Center. While this Center is focused on mine remediation technology, the advances in water treatment could have a profound impact statewide – and beyond.

TAP-IN Colorado is excited to help MSI move the conversation about water quality and innovative mine reclamation technologies forward.

Thank you,

Mara Hardy

Mara Hardy

Innovation Manager, CWCB

Town of
Silverton

July 27, 2018

Mr. Ben Wade
Colorado Water Conservation Board, Engagement and Innovation Activities
1313 Sherman St., Room 718
Denver, CO 80203

RE: CWCB'S Engagement and Innovation Activities Grant Funding

Dear Mr. Wade,

The Town of Silverton, Colorado would like to offer their full support for Mountain Studies Institute's (MSI) grant application for a Colorado Water Plan Grant for engagement and innovation activities. The vision of a Science and Innovation Center for in Silverton falls directly in line with the Colorado Water Plan and the call to action for creative, "outside of the box" thinking to address one of the state's greatest water challenges: the impacts that current and legacy mines have on water quality throughout the state (and the West).

The Silverton Science and Innovation Center supports the values of the Colorado Water Plan (CWP) by incorporating collaboration, innovation, and (1) promoting a ***productive economy*** that supports Silverton and other cities by (2) ***advancing efficient and effective water infrastructure*** for water treatment, and (3) improving mine-related impairments ***to protect a strong environment*** that includes healthy watersheds, rivers, and streams (Chapter 1, p. 1-6).

From Silverton's perspective, MSI's vision of advancing mine reclamation technology related to water quality builds upon a long local tradition of innovation and creates critical economic opportunities for our rural town. The proposed Center will bring resources, visitors, and economic development to Silverton and San Juan County.

The town of Silverton has been a critical partner and supported this concept from its earliest iterations. From our perspective, the Center will be rooted in a community long-defined by innovation and entrepreneurship. We are uniquely positioned as a Center for testing innovation technologies, specifically those related to water quality, for a number of reasons. A few of those are highlighted here:

- In response to the devastating Gold King Mine wastewater spill of 2015, the Bonita Peak Mining District outside of Silverton was designated as a Superfund Site with the support of the community, the State of Colorado and other stakeholders;
- The remote, high-alpine, rural setting of Silverton reflects challenging mining and legacy mine reclamation conditions across the state. Technologies developed in Silverton will address some of the greatest barriers to mine reclamation and water quality and be useful throughout the state (and nation, and world);
- The unique geology of the Silverton caldera paired with a mining legacy of more than 40 draining mine adits within a small radius offer testing access to streams with a wide range of pH levels, flows, access issues, and metal contaminants.

As proof of concept for the Center, MSI has partnered with the Town of Silverton to host an Innovation Expo. Now in its second year, the Expo drew 75+ participants. And, while the 2018 conference doesn't

Town of
Silverton

happen until late August, we can already report being impressed by the quality of people at the table, the collaborative approach, and the creative thinking involved in developing an agenda that promotes innovative technology, advances businesses and ideas that are working to solve challenges associated with acid mine drainage, and brings together agency representatives and local decision makers, business professionals and think-tanks, technology and legal experts, and engaged citizens.

The Silverton Innovation Expo is MSI's "proof of concept" for the Center, and it's just the beginning; MSI and the Town of Silverton have already been working with key players at the local, state, and federal level to explore and advance our bigger vision for a Science & Innovation Center. While this Center is focused on mine remediation technology, the advances in water treatment would have a profound impact statewide – and beyond.

We are excited to help MSI move the conversation about water quality and innovative mine reclamation technologies forward.

Sincerely,

Christine M. Tookey

Christine M. Tookey, Mayor

July 27, 2018

Mr. Ben Wade
Colorado Water Conservation Board
1313 Sherman St., Room 718
Denver, CO 80203

RE: CWCB'S Water Plan Gran Fund -- Engagement and Innovation Category -- Letter of Support

Dear Mr. Wade,

The Southwest Innovation Corridor (SWIC) would like to offer its support for the Mountain Studies Institute's (MSI) application for a Water Plan Grant for engagement and innovation activities.

In line with the Colorado Water Plan's call for creative, "outside of the box" thinking to address state water challenges (Chapter 9.5), MSI's vision for a Science and Innovation Center in Silverton proposes a unique and comprehensive approach to advancing mine reclamation technology, specifically related to water quality.

Challenges related to historic mining and natural mineralization in the upper Animas River are listed as an ongoing priority identified through the 2016 Southwest Basin Roundtable Basin Implementation Plan (IPP 22-A, 23-A, 33-A) including improving water quality and aquatic habits through collaborative processes. The proposed Science and Innovation Center addresses water quality challenges by leaning on local expertise and a tradition of innovation, advancing innovative technologies that respond to some of the major water reclamation challenges associated with remediation, and establishing a pathway for new, innovative ideas to move from bench-test to marketability. The critical niche they propose filling will advance water reclamation (related to legacy mines and otherwise) throughout the state and beyond.

This collaborative, bottom-up approach to economic diversity and sustainability falls directly in line with SWIC's mission and goes a long way to ensure the development of water reclamation technologies that not only pass field tests but have the support and opportunities to advance to larger markets. Further, the unique challenges in Silverton are, in many ways, a foil for legacy mine and water quality challenges throughout the state. Technologies developed in a remote, high-mountain town have a much greater likelihood of meeting the challenges posed by other sites throughout the state.

SWIC was part of MSI's first Innovation Expo in 2017 and can attest to the forward progress of the initiative, the diverse and collaborative representation of stakeholders, and the creative thinking involved in developing an agenda that promotes innovative technology, advances businesses and ideas that are working to solve challenges associated with acid mine drainage, and brings together agency representatives and local decision makers, business professionals and think-tanks, technology and legal experts, and engaged citizens. We look forward to being a part of this year's Innovation Expo as well.

The Silverton Innovation Expo is MSI's "proof of concept" for the Center. MSI has already been working with key players at the local, state, and federal level to explore and advance their bigger vision for a Science & Innovation Center. SWIC serves as a voice on the steering committee providing feedback and future direction for the Center. The feasibility study and challenges proposed in the grant are critical next steps to advance this much-needed concept.

The SWIC is excited to help MSI move the conversation about water quality and innovative mine reclamation technologies forward.

Thank you,

Thea Chase, Director
Southwest Innovation Corridor, a Telluride Foundation initiative

ANIMAS RIVER STAKEHOLDERS

"Committed to improving the quality of the Animas River"

Colorado Water Conservation Board
1313 Sherman Street, Room 718
Denver, CO 80203

July 27, 2018

Dear CWCB:

The Animas River Stakeholders Group (ARSG) fully supports the Mountain Studies Institute's (MSI) grant application for funding the development of an Innovation Center to address legacy mining issues related to water quality. We are one of their partners in this effort.

For twenty-four years, ARSG has worked to improve water quality in the Animas River Watershed through legacy mine remediation. ARSG and its partners have characterized approximately 160 mines, recommended water quality standards based on feasible remediation (adopted by the Colorado Water Quality Control Commission), and implemented approximately sixty mine remediation projects in the basin prior to the Gold King spill and Superfund site designation. The group works by an informal, consensus approach. We have received awards from the U.S. Forest Service and the Secretary of the Interior for our collaborative work. Participants in ARSG include mining companies, federal land management agencies, state and federal regulatory agencies, local governments, environmental groups, and other non-profits including MSI.

For two decades, ARSG has worked with entrepreneurs to develop more efficient methods for remediation, especially for mine drainage. We understand the difficult issues inherent in improving water quality through mine cleanup and feel that MSI has pulled together the right partners for taking the next step to advance better remediation methods through the Innovation Center. We hope you will look upon their application favorably.

Regards,

Peter Butler

Peter Butler, Ph.D.
Coordinator, Animas River Stakeholders Group
970-317-0584