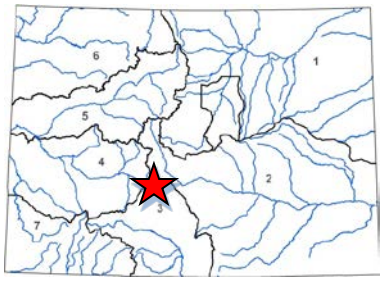
COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Animas River Invasive Phreatophyte Removal – Stewardship and Continued Restoration Conservation Legacy - Southwest Conservation Corps

January 2021 Board Meeting

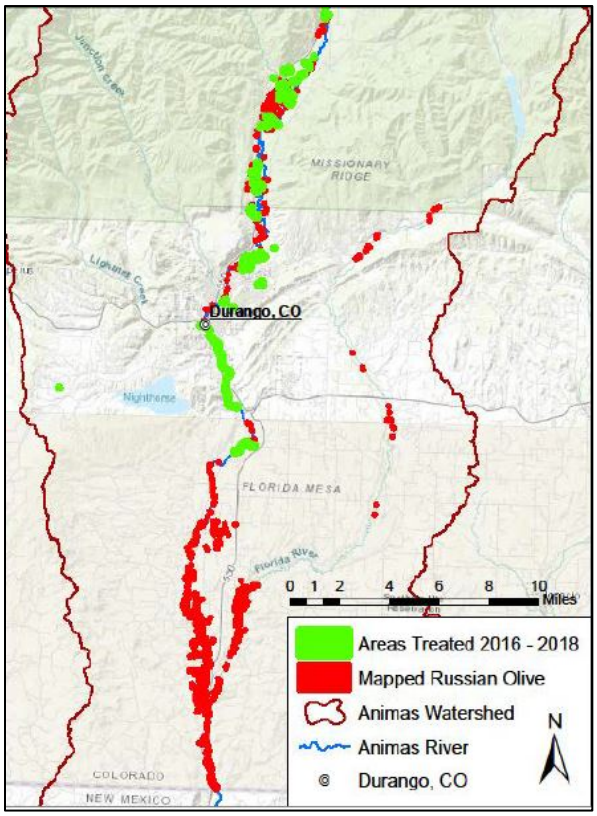
Colorado Watershed Restoration Program Application



LOCATION	
County/Counties:	La Plata
Drainage Basin:	Rio Grande

DETAILS	
Total Project Cost:	$411,517
Colorado Watershed Restoration Program Request:	$204,953
Recommended amount:	$136,635
Other CWCB Funding:	$16,558
Other Funding Amount:	$73,276 secured, $34,730 pending
Applicant Match:	$82,000 in-kind
Project Type(s): Watershed Restoration	
Project Category(Categories): Watershed/Stream Restoration	
Measurable Result: 180 acres of invasive vegetation removal	

The Conservation Legacy - Southwest Conservation Corps (SCC) will remove Russian olive and tamarisk in two San Juan Basin tributaries: the Animas and La Plata Rivers. This project builds on the previous success of the partnership between SCC, the Mountain Studies Institute (MSI), private landowners, businesses, the City of Durango, and the Southern Ute Indian Tribe (SUIT) to control invasive phreatophyte along these two rivers. This project aims to prevent these harmful species from multiplying into larger denser infestations, creating opportunity for native plant species to thrive while enhancing streamside habitat and reducing invasive phreatophyte seed sources that contribute to Russian olive and tamarisk infestations on the San Juan River. Areas within City of Durango property have been identified where ornamental Russian olive can be replaced with appropriate landscaping species. SUIT has identified several parcels for removing Russian olive and tamarisk within the reservation. Finally, MSI currently has a waiting list of landowners that are willing and eager to remove Russian olive with the assistance of this program. The objective of this project is to improve a minimum of 180 acres over 3 years on private parcels in the southern part of the Animas Watershed.



This project will include the following tasks: (1) removal and retreatment of 60 acres annually (total of 180 acres over 3 years) of Russian olive and tamarisk using SCC crews, (2) monitoring for re-sprouts by coordinating with MSI and empowering landowners, (3) replace of (a) ornamental trees with appropriate landscaping species and (b) plant appropriate riparian vegetation along riparian corridors, (4) coordination through SCC and MSI for development of restoration plans and education of landowners and business owners about the impacts of invasive species and treatment options.

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The funding recommendation provides for two of three years of work proposed in the application. Unfortunately, the available funding, the application score, and the need to reduce funding across all the major river basins represented in the applicant pool resulted in a reduced recommendation for this application. Staff encourages the applicant to seek funding from other sources or in subsequent grant cycles of the CWCB's Colorado Watershed Restoration Program.

COLORADO WATER CONSERVATION BOARD

Colorado Watershed Restoration Program – Grant Application

PROJECT PROPOSAL SUMMARY SHEET

Project Title: Animas River Invasive Phreatophyte Removal – Stewardship and Continued Restoration

Project Location: The project is located in La Plata County, CO along the Animas River and La Plata River.

Grant Type: Watershed/Stream Restoration and/or Protection (Restoration) Grants

Grant Request/Amount: $204,953

Cash Match Funding: $103,540

In-kind Match Funding: $103,024

Project Sponsor: Conservation Legacy – Southwest Conservation Corps

Contact Persons: Emily Kasyon, ekasyon@conservationlegacy.org, (970)903-0839

Brief Description of Project: The Southwest Conservation Corps (SCC) is requesting CWCB funding to support removal of Russian olive and tamarisk in two San Juan Basin tributaries: the Animas and La Plata Rivers. This project builds on the previous success of the partnership between SCC, Mountain Studies Institute (MSI), private landowners, businesses, the City of Durango (COD), and the Southern Ute Indian Tribe (SUIT) to control invasive phreatophytes along these two rivers. This project aims to prevent these harmful species from multiplying into larger denser infestations, creating opportunity for native plant species to thrive while enhancing streamside habitat and reducing invasive phreatophyte seed sources that contribute to Russian olive and tamarisk infestations on the San Juan River. Areas within COD property have been identified where ornamental Russian olive can be replaced with appropriate landscaping species. SUIT has identified several parcels for removing Russian olive and tamarisk within the reservation. Finally, MSI currently has a waiting list of landowners that are willing and eager to remove Russian olive with the assistance of this program. Our objective is to improve a minimum of 180 acres over 3 years on private parcels in the southern part of the Animas Watershed using funds in this proposal. This effort compliments the other parts of this project, which includes additional work on private lands, work on Southern Ute Indian Tribe lands in the La Plata River drainage, and work on City of Durango properties. See Attachment E - Project Map for potential treatment locations (mapped in red). This project consists of 4 tasks.

(1) Removal and retreatment of 60 acres annually (total of 180 acres over 3 years) of Russian olive and tamarisk using SCC crews; **(2)** monitoring for re-sprouts by coordinating with MSI and empowering landowners; **(3)** replacement of (a) ornamental trees with appropriate landscaping species, and (b) plant appropriate riparian vegetation along riparian corridors; **(4)** coordination through SCC and MSI for development of restoration plans and education of landowners and business owners about the impacts of invasive species and treatment options.

Colorado Watershed Restoration Program Grant Application
Animas River Invasive Phreatophyte Removal – Stewardship and Continued Restoration

Qualifications

Lead Project Sponsor, Project Team, & Collaboration. The Southwest Conservation Corps (the lead project sponsor) is a program of Conservation Legacy, a 501(c)(3) non-profit based in Durango, CO. Conservation Legacy is a national organization that supports locally based conservation corps programs that provide service and work opportunities for a diverse group of individuals to complete important conservation and community projects for the public benefit. Now in its 22nd year, Conservation Legacy has provided 1.3 million service hours and in 2019 engaged over 2,400 participants.

SCC operates conservation service programs that encourage environmental stewardship, foster community partnerships, and emphasize experiential learning. SCC will provide chainsaw crews to complete all labor. SCC staff will provide labor for crew training, including training on mapping software and equipment, as well as chainsaw and herbicide use. SCC provides crew transportation (vehicles), camping supplies, safety equipment, and necessary tools.

Our team partners include:

Mountain Studies Institute (MSI) is a nonprofit research and education institution in southwest Colorado. MSI participates in research, restoration, and monitoring projects to achieve stakeholder identified resource goals. MSI has assembled partners to advance a collaborative approach to address invasive phreatophytes in two tributaries of the San Juan Basin: Animas and La Plata rivers. From 2016-2020, MSI partnered with over 75 landowners and 10 local organizations to improve approximately 290 acres during Phase 1 of this effort (2016-2018) and 80 acres during Phase II (2019 only, acreage from 2020 project work not tallied as of this writing) within the Animas watershed. MSI has designed a multi-year, watershed-wide approach to restoration.

The City of Durango (COD) provides the City arborist, who assists with operations, and provides equipment. The City's arborist and crew will commit 120 hours of labor as an in-kind contribution and $10,600 in cash match for revegetation materials and a chipper/burning for slash.

The Southern Ute Indian Tribe (SUIT) will continue working with SCC to clear Russian olive along the La Plata River. MSI will continue to work with the tribe to provide access and environmental clearance for project work along the mainstem of the Animas River on tribal properties near the state line. These parcels are an integral part of our strategy for watershed restoration. We have support from the Southwest Basin Roundtable, as well as financial support from Colorado Parks and Wildlife and CWCB..

At present, MSI has a list of over 15 landowners with "chainsaw ready" projects, as well as permission to conduct retreatment activities on up to 600 acres on private parcels. The SUIT is already underway with treating 500 acres (matching funds from BIA). There are a minimum of 65 large, mature Russian Olive (City of Durango Urban Forest Tree Inventory, 2004) growing within the COD's right-of-way on 21 individual business parcels. In 2020, Russian Olive were removed from 4 of these parcels. MSI has already obtained permission from the remaining 17 businesses for removal work in 2021-2023 and additional parcels were identified which were not included in the 2004 tree inventory. MSI will continue to work with the additional business owners to ensure they will agree to removal of mature trees that serve as landscaping around their businesses. The COD has been actively engaged in this process and will continue to do so. A minimum of 172 acres are identified for treatment on City of Durango property and rights-of-way. Please see the complete Scope of Work for this project in Attachment A.

Matching Funds

CWCB funds are matched with $206,564 for this project. See Attachments B and C for more information.

Cash contributions. The Southern Ute Indian Tribe will contribute $49,730 to this project ($15,000 is secured for 2021 and SUIT plans to apply to grants for the remaining $34,730 for 2022 and 2023). SUIT funds will pay for SCC saw crews for 2 weeks per year to remove invasive phreatophytes on SUIT lands. MSI will contribute $13,500 from Colorado Parks and Wildlife and $16,557.50 from CWCB for outreach and coordination staff time. Landowners will contribute $12,500 for work completed on their parcels, including payments for chipping service/rentals, replacement trees, and other paid materials and services. MSI works with each individual landowner on their removal and replacement plan and will help SCC track all cash and in-kind contributions. The City of Durango will contribute $10,600 for chipping /burning of slash and revegetation supplies. Additionally, the La Plata County herbicide cost-share program will provide $652.50, paying for half of the herbicide needed for work on landowner property.

In Kind Contributions. Our efforts will be supported by various in-kind services from landowners and our partners. Landowners will provide $11,424 of in-kind match through their labor for revegetation and monitoring activities. The COD provides in-kind labor as well for tree replacement work by the city arborist and their crew, valued at $6,600. SCC's crew includes in-kind match from Conservation Legacy, for a total of $85,000 over the course of the project.

Organizational Capability

History of Accomplishments & Collaboration. SCC and our partners have worked together on multiple collaborative efforts since our organization's inceptions. This team has extensive experience in all elements of this project plan. The Animas River RIP Team has been working collaboratively with stakeholders on Russian olive and tamarisk removal for over a decade. Efforts to treat Russian olive within the Animas River watershed started in 2002, initiated by the Friends of the Animas River watershed group, which included current MSI staff and SCC. Friends of the Animas River and volunteers treated over 8+ miles of riverbank. This effort formalized in 2006 as the San Juan Watershed Woody-Invasive Initiative, partnering with over 60 entities from 4 states and 4 tribes.

Phase I and II Animas River Removal Program Accomplishments. Through previous CWCB and CPW funding, MSI has engaged 75+ landowners through participation in the program and has educated the public about woody invasives, beyond those that participated in the program. MSI Community Science Director, Amanda Kuenzi, has given power-point presentations to 12 citizen groups in the La Plata county community and coordinated outreach through local news media resulting in five published articles (Durango Herald and Southern Ute Drum). Ms. Kuenzi also gave a radio interview which was originally aired through KSJD, and a collective of radio stations across Colorado. MSI has established a relationship with the community as regional experts on Russian olive control. MSI regularly receives phone calls from landowners in Durango, Cortez, and as far downstream as New Mexico and Utah.

SCC Capability. SCC has substantive experience leading riparian restoration projects, with the most notable initiative being the Dolores River Restoration Partnership (DRRP). The DRRP is a collaborative public-private restoration initiative that works across boundaries to treat invasive species and restore native vegetation along 175 miles (~ 1800 acres) of the Dolores River. SCC has been focused on removing invasive phreatophytes since 2013, launching the landowner education campaign driving this effort. SCC was integral to the success of Phase I and II of this project. SCC crews completed all removal activities, mapped projects using GPS, and established photo-points for monitoring. Not only did they complete all tasks, but also received glowing reviews from landowners. SCC crews will receive Forest Service

equivalent S212 chainsaw operation training as well as herbicide technician training. SCC crews will be one of several outreach methods as they work closely with the landowners engaged in the project.

MSI's Capability for Project Planning & Public Outreach. MSI and our partners have invested in an open, transparent process to engage homeowners and the public in watershed restoration. MSI has an existing network of 200+ partners, private owners, organizations, and government agencies collaborating to improve Animas River watershed health. MSI provides project planning and overall coordination for this project alongside SCC staff. MSI will work directly with several organizations to reach landowners, including City of Durango, La Plata County, Trout Unlimited, Fort Lewis College, Americorps volunteer trainings, school teachers, local service organizations (such as Rotary Club), and conservation districts.

Level of Staffing & Volunteer Involvement. This project involves a team effort from SCC, MSI, and COD. Specifically, Task 4 and Task 2 will be led by MSI (Amanda Kuenzi - Community Science Director, 561.5 hrs). For Task 1 and Task 3, saw crew leaders and members with help from SCC staff (Clara Moulton - Four Corners Director and Emily Kasyon - Watershed Programs Manager) will provide much of the labor for the removal, retreatment, and replanting tasks with 24 weeks of labor (8 weeks of 8-person crews per year for 3 years representing 7680 service hours), with in-kind support from the COD arborist (120 hrs). In-kind support from landowners and Conservation Legacy will contribute to all tasks.

Budget and Schedule. Using the lessons learned from our previous work, we can determine realistic estimates and outputs for SCC crew work. We have learned more hours are needed for landowner outreach and development of customized plans for each landowner. Further, we intend to break the 8-person SCC crews into small crews of 4 when working on smaller properties, allowing us to increase effectiveness and efficiency. Our detailed budget and schedule are included in Attachments B - Budget and F - Unit Cost Budget. Removal work will be timed to avoid bird migration and to increase effectiveness of treatment (i.e. Russian olive treatment is most effective in fall as plants draw energy down to the roots). Planting in areas requiring revegetation will be timed with the dormant season.

Schedule	Milestones
Spring - Summer 2021	Outreach to landowners and business owners; plan and conduct site visits; Monitoring of 2013-2020 sites; SCC saw crew chainsaw training
Fall 2021	Landowner meetings; Removal and retreatment operations (60 acres treated)
Winter 2021/2022	Continue outreach campaign and stakeholder planning, CWCB annual report
Spring - Summer 2022	Planting of replacement trees or appropriate riparian vegetation; Monitoring of 2013-2020 sites; outreach; SCC saw crew chainsaw training
Fall 2022	Landowner meetings; Removal and retreatment operations (60 acres treated)
Winter 2022/2023	Continue outreach campaign and stakeholder planning, CWCB annual report
Spring - Summer 2023	Planting of replacement trees or appropriate riparian vegetation; Monitoring of 2013-2020 sites; outreach; SCC saw crew chainsaw training
Fall 2023	Landowner meetings; Removal and retreatment operations (60 acres treated)
Winter 2023/2024	CWCB final report

Proposal Effectiveness
Prevention of invasive phreatophyte spread is a major component of integrated management and central to our plan. By removing heavy seed producing ornamental trees, we will limit seed dispersal and the re-introduction of invasive phreatophytes into treated areas. Replacement of invasive phreatophytes with native species will prevent weedy species from becoming re-established. Mechanical and chemical treatments will be paired during the removal phase of the project, as extensive removal on the New Mexico section of the Animas has shown this approach to have 75% or better success rate (Rhea-Grossman, 2005; San Juan Soil and Water, personal comm). The cut-stump method will be used, which involves using chainsaws or other tools to remove above-ground biomass, leaving a short stump where herbicide is applied to the cambium layer within a few minutes of removal. Herbicide application reduces re-sprouting from cut stumps and is most effective in the fall when trees are moving nutrients to their root systems to prepare for winter. These tactics are most effective used in combination, not only to reduce existing weed populations, but also to prevent regrowth and future infestation.

The Animas corridor infestations are often dispersed and low density, with Russian olive being more prevalent than tamarisk. Therefore, biological controls are not a viable option for our area. Native vegetation is usually sufficient at most sites for passive revegetation to be successful without planting or seeding. SCC hand crews deliver a sensitive approach to native vegetation and impacts to soils, reducing potential for establishment of secondary weeds. SCC crews cut Russian olive with chainsaws and apply herbicide to stumps in a timely manner and take care not to over-apply herbicide. Depending on site goals and feasibility, woody slash may be used as mulch, assembled in burn piles, or stacked to create wildlife piles. See Attachment D for pictures of SCC crews performing this work in 2019 and 2020.

Several key strategies have been identified to expand this program and magnify its impact. Specifically, mapping and inventory data capturing the full distribution of infestations along the Animas by MSI allowed us to target the seed sources in the headwaters. More work remains in the northern portion of the mainstem Animas project area (see Attachment E – Project Map). Our mapping has revealed that heavy infestations in the southern portion of the project area will require an intense effort. Large areas of ornamental trees were also found within the COD rights-of-way in the Bodo Industrial areas, adjacent to the river corridor.

MSI will employ the targeted outreach program and tools developed in previous years to engage landowners in the southern portion of the project area. We will use the monitoring procedures using digital tablets with GPS and ArcGIS capabilities for crews to continue to document treatment areas. To overcome landowner resistance to loss of valued landscaping, the partnership will offer replacement trees and removal services as incentives to landowners to participate in the program. This proposal offers an opportunity to implement the original vision of this partnership, with the clarity of recently learned lessons building upon momentum and good will that has already been built with the local community.

Existing Plans Relevant to the Project. The Animas Watershed Plan (2011) identified the loss of native riparian habitat and function as a critical factor in the degradation of the Animas River. While impacts from mine pollution and water quality degradation are the primary issues, loss of native habitat and stream flows were identified as key factors to address. The following objectives were listed as critical to the Animas River's health: (1) improve riparian condition, including reduction of invasive species, (2) develop strategies to increase and protect stream flows, (3) utilize conservation easements and habitat programs to create incentives for landowners (Best Management Practices, Animas Watershed Partnership, 2011, p. 39).

Southwest Basin Round Table, Basin Implementation Plan (2015). This project addresses and contributes to the Measurable Outcomes of the following goals identified in the BIP.

- A5 Maintain watershed health by protecting and/or restoring watersheds that could affect critical infrastructure and/or environmental and recreational areas.

- D1 Maintain, protect and enhance recreational values and economic values to local and statewide economies derived from recreational water uses, such as fishing, boating, hunting, wildlife watching, camping, and hiking.
- E1 Encourage and support restoration, recovery, and sustainability of endangered, threatened, and imperiled aquatic and riparian dependent species and plant communities.
- E2 Protect, maintain, monitor and improve the condition and natural function of streams, lakes, wetlands, and riparian areas to promote self-sustaining fisheries, and to support native species and functional habitat in the long term, and adapt to changing conditions.

Objectives

Multi-Objective Aspects of the Project. The ecological objective of this project is riparian restoration of the Animas and La Plata Rivers. The benefits include: improved water quality, restored stream channel capacity and reduced flooding hazards, and enhanced wildlife habitat for native species, including migratory neotropical songbirds and native fish, as well as threatened and endangered species which can occur in the area including the Southwest Willow Flycatcher, Western Yellow-Billed Cuckoo, and New Mexico Meadow Jumping Mouse. Benefits to the community include education about river health and enhanced recreational access/experiences through improved river health and integrity. Replacement of ornamental invasive phreatophytes with less-water consumptive species and natives will reduce groundwater consumption, resulting in increased available water for all uses. An additional objective is to benefit local agriculture by controlling plants that invade pastures, fields, and irrigation ditch banks.

The project compliments, but does not duplicate, the efforts of the partners to educate the community and control phreatophytes. This partnership incorporates efforts of the SUIT, La Plata County, and City of Durango to address gaps and to leverage past and current work by extending efforts onto lands that have not yet been treated. There is currently no ornamental planting replacement program in the Animas Watershed of Colorado.

The Southwest Conservation Corps has been able to employ 42 members and leaders in this effort since 2016, allowing us to engage and train the next generation of water stewards. Individuals that go through our program and work on this project gain valuable life skills in project management, community engagement, and stream restoration tactics. Crew leaders and members gain training and certifications (chainsaw, herbicide use, wilderness medicine) as well as education about the importance of healthy ecosystems, helping them pursue careers in natural resource management. This project in particular teaches young people the value of community collaboration in river restoration work and gives the crews a sense of pride as they engage in stewardship of a critical water resource. See Attachment D for pictures of the SCC saw crews from previous years working on this project.

Monitoring, Implementation, & Success Measures. An integral part of this project is empowering landowners to monitor and retreat their own properties. MSI plans to engage in annual check-in's with landowners to monitor resprouting of Russian olive and tamarisk. If resprouts are found, they will be retreated as needed the next year. We have multiplied our effectiveness of monitoring by having landowners commit to conducting monitoring as a condition of participating in the program. MSI is currently tracking re-sprouts for the 2016-2020 work through communication with landowners. When landowners are not able to monitor their parcels, MSI staff and interns revisit the mapped, treated areas. The retreatment phase ensures complete restoration of the Animas River and helps us determine success. In previous phases of the project, MSI and SCC developed and fine-tuned mapping techniques using digital tablets and established photo-points. SCC crews also establish new photo-points for monitoring purposes as they complete removal and replanting at each parcel. We will use GIS to demonstrate our successes with reducing Russian olive and tamarisk populations.

ATTACHMENT A

SCOPE OF WORK

GRANTEE and FISCAL AGENT (if different): Conservation Legacy - Southwest Conservation Corps

PRIMARY CONTACT: Emily Kasyon

ADDRESS: 701 Camino Del Rio Suite 101, Durango, CO 81301

PHONE: 970-903-0839

PROJECT NAME: Animas River Invasive Phreatophyte Removal – Stewardship and Continued Restoration

GRANT AMOUNT: $204,953

INTRODUCTION AND BACKGROUND:

The Southwest Conservation Corps (SCC) is requesting CWCB funding to support removal of Russian olive and tamarisk in two San Juan Basin tributaries: the Animas and La Plata Rivers. This project builds on the previous success of the partnership between SCC, Mountain Studies Institute (MSI), private landowners, businesses, the City of Durango (COD), and the Southern Ute Indian Tribe (SUIT) to control invasive phreatophytes along these two rivers. This project's scope of work supports four specific activities:

(1) Removal and retreatment of approximately 60 acres annually of Russian olive and tamarisk (for a total project deliverable of 180 acres) using SCC crews; **(2)** annual monitoring for regrowth by coordinating with MSI and empowering landowners to monitor their parcels; **(3)** replacement of (a) ornamental trees with appropriate landscaping species, and (b) plant appropriate riparian vegetation along riparian corridors where appropriate; **(4)** coordination through SCC and MSI for development of restoration plans and education of landowners and business owners about the impacts of invasive species and treatment options.

OBJECTIVES

Our objectives are to: (1) reduce Russian Olive and tamarisk populations in the Animas and La Plata River watersheds, enhancing riparian habitat and improving water quality and reducing groundwater consumption; (2) replant native vegetation to improve riparian vegetation biodiversity and wildlife habitat; (3) replace ornamental Russian olive trees on City of Durango and private properties to reduce Russian olive seed sources and raise awareness about the need to eradicate Russian olive; (4) continue to build on the momentum of this multi-year effort to empower private landowners to work towards ecological restoration in the region; and (5) create local jobs for young adults to engage in conservation service and stewardship.

TASKS

Task 1 - Russian Olive and Tamarisk Removal and Retreatment

Description of Task

SCC will work with MSI, the City of Durango, and the Southern Ute Tribe for removal of Russian olive and tamarisk on multiple private, public, and tribal properties. The work will support the training and deployment of SCC young adult crews to remove trees and apply herbicide. Identified potential treatment areas are mapped in red in Attachment E - Project Map.

SCC crews will utilize best management practices (see methods) to treat: private lands in the Animas River watershed (up to 600 acres of potential work identified), City of Durango managed lands in Bodo Industrial Park (up to 172 acres of potential work identified); Southern Ute Indian Tribe (SUIT) proposes to treat tamarisk and Russian olive on tribally owned portions of land along the La Plata River (approximately 200 acres of potential work identified) and Animas River (approximately 300 acres of potential work identified). Treatment will involve cutting these invasive species to ground level or using a "frill cut", applying herbicide, piling slash, and burning slash piles. SUIT has completed all environmental compliance required for these tasks.

MSI will coordinate with private landowners throughout the Animas River watershed and business owners in Bodo Industrial Park who have expressed interest in Russian olive and tamarisk eradication. MSI will offer assistance for eradication on a cost-share basis. Approximately 600 acres of private land have been identified for future project work, which includes previously treated acreage that may be in need of retreatment. Our objective for this project is to improve a minimum of 60 acres on private and public parcels and tribal lands, annually. Colorado Watershed Restoration Program funding will be used for landowner assistance to meet the needs of the program.

Method/Procedure

On all lands, treatment will involve using the following methods:

Cut-Stump treatment method

The cut-stump technique involves cutting the trees and shrubs to ground level and spraying stumps with herbicide (triclopyr or glyphosate) mixed with water or oil. Chainsaws, brush cutters, lopping shears and other hand tools will be used. Stumps will be sprayed using hand-held spray bottles, sprayers, or "painted on". The herbicide will be applied to the stump immediately following cutting to maximize efficiency of the treatment.

Frill cut treatment method or "hack-and-squirt"

Using a hatchet, machete, or similar tool a frill cut will be made at a downward angle at proper spacing around the trunk (not completely girdling the tree). After striking, the hatchet will be pulled backwards to produce a "cup" to hold the herbicide. Cuts will be made to penetrate through the bark into living cambium tissue. Herbicide (triclopyr or glyphosate) mixed with water or oil, according to label, will be

sprayed into the frill cuts using a squirt bottle or sprayer. This method will be used to control individual trees greater than five inches in diameter. This method is best for the protection of wildlife habitat due to no immediate canopy removal or disturbance. The standing dead trees left behind become good habitat trees.

Basal bark treatment method

This method is used to address younger plants and re-sprouts with stems no larger than 6 inches in diameter. Herbicide (triclopyr or glyphosate) mixed with water or oil will be sprayed onto 12-15 inches of bark around entire stem near the base of the plant.

All treatment methods will be applied after the plant has bloomed and prior to dormancy, between September and November for maximum effectiveness and to reduce re-sprouting. In most areas slash will be piled for burning when appropriate conditions allow. In some cases, slash will be hauled off site for burning or chipping.

Deliverables

City of Durango (COD): Treatments to improve identified areas in Bodo Industrial Park (up to 172 acres). Retreatment areas may also include Hillcrest Golf Course, COD-owned wetland areas along Jenkins Ranch Road, COD City Reservoir, retreatments of re-sprouts along the Animas River recreation corridor, and other areas as identified by the COD.

SUIT lands: Treatments to improve identified areas within the reservation, which includes approximately 200 acres along the La Plata River and approximately 300 acres along the Animas River .

Private parcels: Treatments to improve private lands in the Animas River watershed. Some areas have been identified and additional private lands will be identified through outreach processes. Approximately 600 acres have currently been identified for initial treatment or retreatment on private parcels.

In addition, SCC will engage 1 crew per year for 3 years on this project (18-24 participants total).

CWCB Deliverable

In total, invasive Russian olive and tamarisk will be removed from a minimum of 60 acres annually, for a project total of a minimum of 180 treated acres. SCC will provide annual invoices and interim reports every 6 months with documented accomplishments, including acres improved. A final report will include maps of all areas treated.

Task 2 - Monitoring for Regrowth

Description of Task

Monitoring will be conducted at all project sites to identify and address re-sprouting.
City of Durango: MSI will coordinate with the COD arborist to monitor for re-sprouts. COD staff will treat resprouts on treated areas as appropriate.

SUIT lands: MSI will coordinate with SUIT Division of Wildlife staff to monitor for re-sprouts. SUIT will treat re-sprouts on treated areas as appropriate.

Private parcels: MSI will coordinate with private landowners to monitor for re-sprouts. As part of Task 4, MSI will educate landowners on identification and early eradication of re-sprouts. Landowners will be empowered to self-monitor and maintain their parcels. In some cases where necessary, SCC will retreat areas of vigorous resprouting.

Method/Procedure

"Before and after" photo points will be established at each treatment site, as is the standard protocol for SCC crews. Photo points will be recorded using a handheld GIS enabled tablet.

Each area treated by SCC will be mapped using a handheld GIS enabled tablet. A standard GIS data form will be filled out at each site to document the number of stems treated, method employed, and total area treated. This data is paired with the geospatial data for future monitoring.

Deliverable

Monitoring will be conducted for a minimum of 60 acres annually. Photo points and GIS data will be recorded on a tablet and data archive for each site. Data sets will be shared with all project partners.

CWCB Deliverable

SCC will provide annual invoices and interim reports every 6 months with documented accomplishments, including acres improved. A final report will include maps of all areas treated.

Task 3 - Tree Replacement

Description of Task

City of Durango: Ornamental trees will be replaced with new vegetation, chosen to complement each setting. Ornamental trees within COD right-of-ways will be replaced by COD staff, including the city arborist and the seasonal crew working under him. COD arborist will be responsible for site planning, species selection, and implementation. In riparian areas, SCC crews will be contracted to do willow and cottonwood plantings in areas in need of streambank stabilization or habitat replacement or enhancement

SUIT lands: SCC crews will be contracted to do willow and cottonwood plantings in areas in need of streambank stabilization or habitat replacement/enhancement within the reservation lands.

Private parcels: MSI will coordinate with landowners and SCC crews to provide assistance to replace Russian olive and tamarisk as appropriate, on a case-by-case basis. As part of Task 4, MSI will direct landowners to available resources including funding programs under the Natural Resources Conservation Service, technical assistance from the Colorado State Forest Service, including the tree nursery, and local nurseries providing non-invasive species.

Method/Procedure

Planting methods will vary according to site location and needs, and will follow best management practices. Ornamental trees will be selected with the support and direction of the COD arborist and/or appropriate landscape and vegetation plans.

Riparian areas in need of bank stabilization will be replanted with willow and cottonwood saplings according to the methods outlined in Suggested Methodologies for Cottonwood Pole, Willow Whip, and Longstem Plantings (Tamarisk Coalition 2014).

Deliverable

Existing Russian olive ornamental trees will be replaced on COD properties, SUIT lands, and private parcels. COD has set aside $10,600 in funds over three years to replace trees on COD property as identified by the COD arborist.

In total, invasive ornamental trees will be replaced in approximately 50% of locations.

CWCB Deliverable

SCC will provide annual invoices and interim reports every 6 months with documented accomplishments, including acres improved. A final report will include maps of all areas treated and locations of plantings.

Task 4 - Coordination, Outreach, and Project Planning

Description of Task

Staff from SCC and MSI will serve as the coordinators for the project. SCC will implement the training of crews, manage data collection and mapping, coordinate with partners where SCC crews will perform treatments, and create progress reports to CWCB. MSI will be responsible for mapping and data management as needed, outreach to landowners, coordination of partners and matching funds, lining out SCC crews to work with landowners and the COD, and management of the tree replacement and monitoring portions of the project.

Outreach efforts will be focused on the business owners within Bodo Industrial Park (Bodo) and private landowners in the southern portion of the watershed. There are a minimum of 65 large, mature Russian

olive (City of Durango Urban Forest Tree Inventory, 2004) growing within the City of Durango's (COD) right-of-way on 21 individual business parcels. In 2020, Russian olive were removed from 4 of these parcels. MSI has already obtained permission from the remaining 17 businesses for removal work in 2021-2023 and additional parcels were identified which were not included in the 2004 tree inventory. MSI will continue to work with the additional business owners to ensure they will agree to removal of mature trees that serve as landscaping around their businesses. The COD has been actively engaged in this process and will continue to do so. SCC and MSI are uniquely positioned to handle this eradication effort as SCC crews have a proven track record of performing quality work in the community and MSI has created a public outreach campaign over the past several years, building momentum and public awareness around Russian olive and tamarisk eradication. Through recent publications, additional interest has been generated in the program (https://durangoherald.com/articles/347535-invasive-russian-olives-trees-removed-put-to-good-use; https://www.sudrum.com/top-stories/2020/09/25/southwest-conservation-corps-assists-tribe-with-invasive-tree-removal/).

Method/Procedure

SCC will offer Forest Service S-212 equivalent chainsaw training to all crew leaders and members who participate on this project. Program participants will also go through SCC's herbicide technician training to learn how to safely and effectively use herbicide specifically for this project. With the help of MSI, SCC crews will also share best practices for safe and effective maintenance with landowners while working on their properties.

MSI will outreach to business owners, private landowners, the COD, and the community at large. They will raise awareness of the current threat of urban and ex-urban Russian olive and tamarisk seed sources that compromise riparian habitat, agricultural activities, and water security. MSI will utilize existing outreach materials to continue to build public support for removal of seed sources in both riparian areas and areas planted as ornamental landscape trees.

Deliverable

Task 1,2,and 3 will be able to be implemented due to the pre-project planning and coordinating in this task. SCC will conduct training for herbicide and chainsaw use for all crew leaders and members (18-24 participants).

CWCB Deliverable

In total, invasive Russian olive and tamarisk will be removed from approximately 180 acres, over the three years of the project. SCC will provide annual invoices and interim reports every 6 months with documented accomplishments, including acres improved. A final report will include maps of all areas treated.

ATTACHMENT B

BUDGET

Task	Description	Target Start Date	Target Completion Date	CWCB Funds	Other Funding Cash	Other Funding In-Kind	Total
Task 1: Russian Olive and Tamarisk Removal and Retreatment	Six to eight person SCC saw crew for 10 weeks per year for 3 years	8/1/2021	12/31/2023	$ 198,452.50	$ 62,882.50	$ 82,000.00	$ 343,335.00
Task 2: Monitoring	Landowner monitoring of removal sites for re-sprouting Russian olive and tamarisk	8/1/2021	4/30/2024			$11,160.00	$11,160.00
Task 3: Tree Replacement	Labor, materials, and native plantings for replacement of (a) ornamental trees with appropriate landscaping species, and (b) planting of appropriate riparian vegetation along riparian corridors	8/1/2021	4/30/2024		$10,600.00	$9,864.00	$20,464.00
Task 4: Outreach/ Coordination	Coordination through SCC and MSI for development of restoration plans and education of landowners and business owners about the impacts of invasive species and treatment options	5/1/2021	4/30/2024	$6,500.00	$30,057.50		$36,557.50
Total				**$ 204,953**	**$ 103,540**	**$ 103,024**	**$ 411,517**

ATTACHMENT C

LETTERS OF SUPPORT

Mountain Studies Institute
SAN JUAN MOUNTAINS COLORADO

November 2, 2020

Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

Dear Colorado Water Conservation Board:

Mountain Studies Institute (MSI) would like to express our support for the *Animas River Invasive Phreatophyte Removal – Stewardship and Continued Restoration* project proposed by the Southwest Conservation Corps. Mountain Studies Institute has been working in partnership with Southwest Conservation Corps since our combined work under the Invasive Phreatophyte Control Program, first proposed in 2015. Now in Phase 2, our accomplishments are many, including treatment of over 370 acres, extensive outreach and education efforts, and the creation of a solid partnership with the Southern Ute Indian tribe. Despite these gains, there is much work to do, and our program has more momentum now more than ever! Through our work with landowners, we now know the extent of Russian olive and tamarisk populations in the Animas River riparian corridor. Populations are denser than first conceptualized and appear to be spreading faster as temperatures continue to rise in southwest Colorado. We rely on the funds requested by Southwest Conservation Corps to continue improving watershed health in both the Animas River and La Plata River watersheds. MSI's ongoing outreach and coordination efforts with private landowners and business owners will be largely supported through secured funding from Colorado Parks and Wildlife, with some supplemental funds previously awarded to MSI through Colorado Water Conservation Board grant programs.

The restoration of the Animas River and La Plata watersheds and the reduction of Russian olive and tamarisk are vital to MSI's climate resilience strategy for our beloved corner of southwest Colorado, and I strongly encourage the support of the Colorado Water Conservation Board for Southwest Conservation Corps' proposal. Thank you for your time and consideration of this important work.

Sincerely,

Amanda M. Kuenzi
Community Science Director
Mountain Studies Institute

CITY of DURANGO

November 5, 2020

Colorado Water Conservation Board
1313 Sherman St., Room 721
Denver, CO 80203

Dear Colorado Water Conservation Board,

The City of Durango would like to express support for the Animas River Invasive Phreatophyte Removal – Stewardship and Continued Restoration project proposed by the Southwest Conservation Corps (SCC). The City of Durango Community Forest Management Plan identifies the reduction of Russian Olive as a significant goal and the City has been committed to the on-going removal of Russian Olive from along the Animas River Corridor and within City limits. This partnership between SCC, the City of Durango, and Mountain Studies Institute (MSI) provides an opportunity to provide combined efforts for a public awareness campaign, reduction of Russian Olive trees from within City limits, and replacement with non-invasive landscape tree plantings.

The City of Durango would like to contribute a total of $10,600 over the next three years to this project , subject to the appropriation of funds by the Durango City Council, in costs for tree plantings, chipping, burning of waste materials, and other costs. The City Arborist is prepared to collaborate and participate in removal and replanting efforts by SCC and MSI and provide and install replacement trees as Russian Olive trees are removed.

The protection of the Animas River watershed and the reduction of Russian Olive within City limits is a community priority, and we urge the support of the Colorado Water Conservation Board for the Russian Olive Removal Project.

Sincerely,

Scott McClain
Assistant Parks Director

SOUTHERN UTE INDIAN TRIBE

November 2, 2020

Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, Colorado 80203

To whom it may concern:

I am writing this letter on behalf of the Southern Ute Indian Tribe (Tribe) to express support for the Southwest Conservation Corps' (SCC) CWCB Watershed Restoration Program Grant application: *Animas River Invasive Phreatophyte Removal – Stewardship and Continued Restoration.* In partnership with Mountain Studies Institute (MSI), this project follows up on and continues important invasive phreatophyte removal and riparian enhancement that began on the Animas River in 2017.

The Tribe is committed to enhancing Animas River riparian habitat on tribal lands. The Tribe supports the goals of this project as stated in SCC's application: to improve riparian ecology and biodiversity by reducing invasive phreatophytes and seed sources; improve wildlife habitat; enhance recreation access; protect water supplies and water quality; and empower young adults to be stewards of the land. The partnership between the Tribe, SCC, and MSI provides a unique opportunity to cross boundaries and work towards a more complete restoration of the Animas River.

In 2020 the Tribe received a grant from the Bureau of Indian Affairs and has $15K remaining in the grant for 2021, to be applied to the overall effort of reducing invasive phreatophytes. Furthermore, the Tribe intends to apply for grants to support work in 2022 and 2023.

The protection of the Animas River watershed is of great importance to the Southern Ute Indian Tribe and we encourage the Colorado Water Conservation Board to fund this proposal. Please contact me if there are any questions.

Thank you,

Steve Whiteman, Acting Director
Department of Natural Resources
Southern Ute Indian Tribe
swhitema@southernute-nsn.gov
(970) 317-1249

COLORADO
Parks and Wildlife
Department of Natural Resources

Terrestrial Programs Unit
317 W. Prospect Rd.
Fort Collins, CO 80526

November 3, 2020

Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

To whom it may concern:

Colorado Parks and Wildlife (CPW) has approved funding of $64,043 to support Mountain Studies Institute's (MSI) "Animas River Phreatophyte Removal and Riparian Enhancement, Phase II". This funding is provided through CPW's Wetland Enhancement Block grant program and extends until June 2021. This funding is the second award granted to MSI to support removal and replacement efforts in the Animas River Watershed. This second award will also support efforts beyond the mainstem Animas River, expanding removal and replacement to the La Plata River drainage. The Southwest Conservation Corps (SCC) depends on MSI's coordination efforts to accomplish the goals of the projects and the funds awarded to MSI will support SCC's application.

CPW supports the goals of this project as stated in SCC's application: to improve riparian ecology and biodiversity by reducing invasive phreatophytes and seed sources; improve wildlife habitat; enhance recreation access; protect water supplies and water quality; and empower stewards and volunteers to achieve ecological restoration.

CPW values the collaborative efforts of MSI and its partners, such as SCC, to enhance wildlife habitat in southwest Colorado. We support funding the continued work of this partnership to reduce invasive phreatophytes through the Colorado Watershed Restoration grant program.

I strongly encourage you to fund this proposal. Thank you for your time and consideration of this important work. Let me know if you have any questions about CPW's support for this initiative.

Sincerely,

Brian D. Sullivan

Brian Sullivan
Wetlands Program Coordinator
970.472.4306
brian.sullivan@state.co.us

ATTACHMENT D

PHOTOS

Figure 1: SCC Crew Member standing next to a slash pile from recently cut Russian Olive, fall 2020

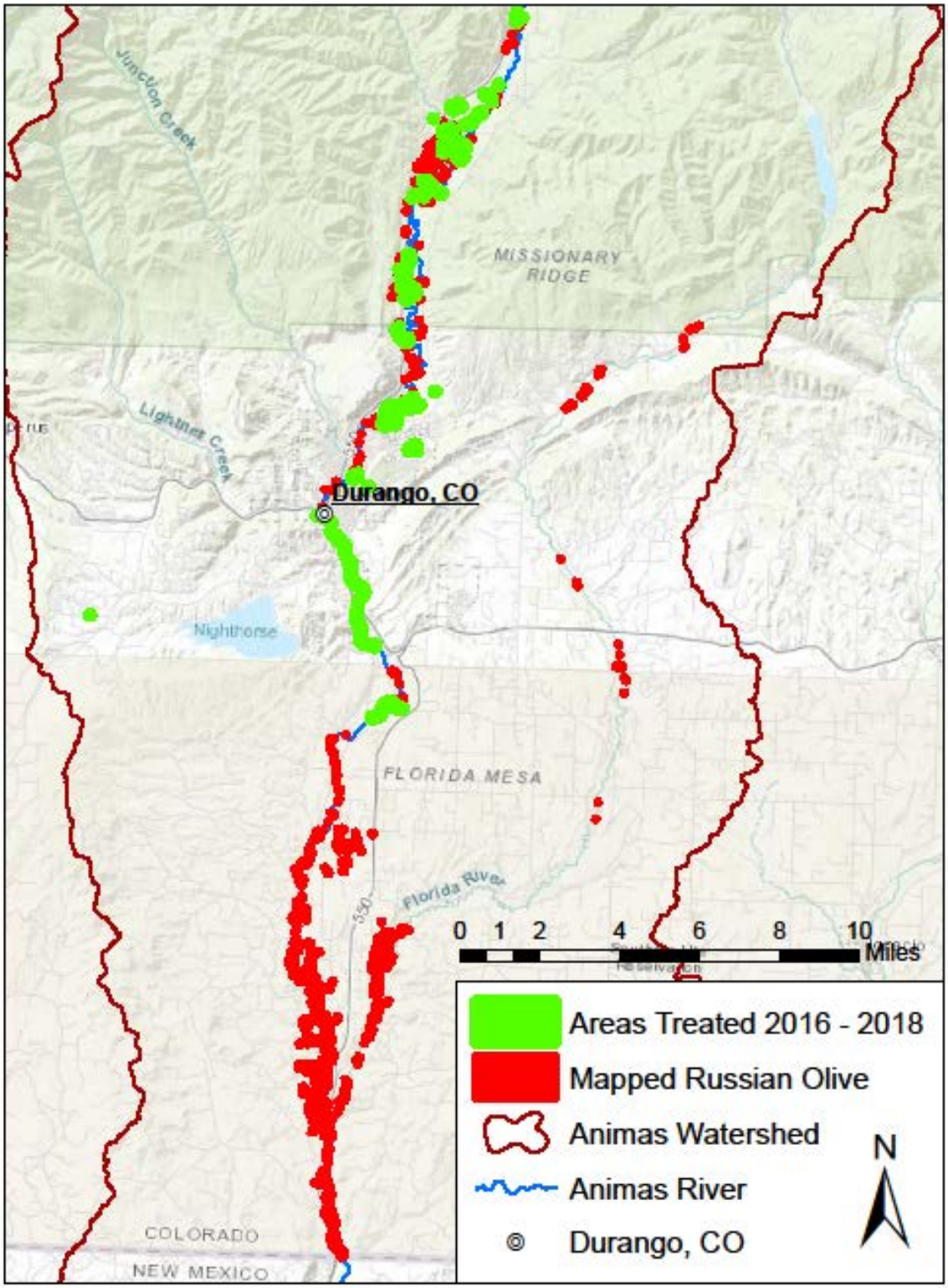
Figure 2: SCC was able to employ an all female/non-binary crew for 2020 work. This crew removed Russian olive and tamarisk on SUIT, COD, and landowner property along the La Plata and Animas Rivers.

Figure 3: An SCC crew leader from 2019 sharpening his chainsaw after a day of cutting Russian olive. SCC participants learn valuable chain sawing skills, such as maintenance and sharpening, as part of this program.

Figure 4: 2020 SCC Saw crew members spraying the low stumps of Russian olive trees they just cut

ATTACHMENT E

MAP



ATTACHMENT F

UNIT COST BUDGET

Task 1 Removal and Retreatment

	Personnel	Total Weekly cost	Number of Weeks	CWCB funds	Other Cash Match	Other In-Kind Match	Total	Notes
	Saw Crew Year 1	$ 10,667.00	10	$ 65,000.00	$ 15,000.00	$ 26,670.00	$ 106,670.00	SUIT. = 15K Cash match. Conservation Legacy = In-Kind Match
	Saw Crew Year 2	$ 10,933.00	10	$ 65,600.00	$ 16,400.00	$ 27,330.00	$ 109,330.00	SUIT. = $16,400 Cash match. Conservation Legacy = In-Kind Match
	Saw Crew Year 3	$ 11,200.00	10	$ 67,200.00	$ 16,800.00	$ 28,000.00	$ 112,000.00	So. Ute. = $16800 Cash match. Conservation Legacy = In-Kind Match
	Landowner chipper rental and labor	$ 250.00	30		$ 7,500.00		$ 7,500.00	Cash match for landowner contribution
	City of Durango chipper/burning				$ 5,000.00		$ 5,000.00	
	Expenses	**Unit Cost**	**# Units**	**CWCB funds**	**Other Cash Match**	**Other In-Kind Match**	**Total**	**Notes**
	Herbicide - Rodeo	$ 75.00	15	$ 562.50	$ 562.50		$ 1,125.00	Other Cash Match = La Plata county herbicide cost share program, matching for half of the herbicide
	Herbicide - indicator dye	$ 30.00	6	$ 90.00	$ 90.00		$ 180.00	
	Herbicide - Pathfinder (SUIT)	$ 170.00	9		$ 1,530.00		$ 1,530.00	Cash match is herbicide bought by SUIT
	Task 1 Totals			**$ 197,452.50**	**$ 62,882.50**	**$ 82,000.00**	**$ 343,335.00**	

Task 2 Monitoring

	Personnel	Hourly Rate	# Hours	CWCB funds	Other Cash Match	Other In-Kind Match	Total	Notes
	Landowner monitoring	$ 27.20	300			$8,160.00	$8,160.00	Landowner hourly rate at independent sector rate
	SCC GIS license					$3,000.00	$3,000.00	SCC GIS license from ESRI valued at $1,000 per year
	Task 2 Totals			**$0.00**	**$0.00**	**$11,160.00**	**$11,160.00**	

Task 3 Tree Replacement								
	Personnel	**Hourly Rate**	**# Hours**	**CWCB funds**	**Other Cash Match**	**Other In-Kind Match**	**Total**	**Notes**
	City of Durango labor	$ 55.00	120			$ 6600.00	$ 6600.00	
	Expenses	**Unit Cost**	**# Units**	**CWCB funds**	**Other Cash Match**	**Other In-Kind Match**	**Total**	**Notes**
	Revegetation Materials - Landowner	$ 27.20	120		$5000.00	$3264.00	$ 8264.00	Cash match is from landowners hiring landscape contractors and buying trees; in-kind is from landowner labor at independent sector rate for replanting
	Revegetation Materials - City of Durango	$ 400.00	14		$ 5600.00		$ 5600.00	$400 per tree
	Task 3 Totals			**$0.00**	**$10,600.00**	**$9,864.00**	**$20,464.00**	
Task 4 Outreach/Coordination								
	Personnel	**Hourly Rate**	**# Hours**	**CWCB funds**	**Other Cash Match**	**Other In-Kind Match**	**Total**	**Notes**
	MSI Project Coordinator – Community Science Durector	$ 65.00	561.5	$ 6500.00	$30,000.00		$36,500.00	MIS's Community Science Director's time will come from these grants: CPW $13,500; CWCB CWP 2018 $9,950; CWCB CWP 2020 $4,000; CWCB WRP 2020 $2,550
	Expenses	**Unit Cost**	**# Units**	**CWCB funds**	**Other Cash Match**	**Other In-Kind Match**	**Total**	**Notes**
	MSI Project Coordinator Travel	$ 0.575	100		$ 57.50		$ 57.50	Cash Match from MSI's CWCB WRP 2020 grant
	Task 4 Totals			**$6,500.00**	**$30,057.50**	**$0.00**	**$36,557.50**	

ATTACHMENT G

WATERSHED PLAN

The watershed plan for the Animas River can be found at this link:
http://animaswatershedpartnership.org/wp-content/uploads/2017/04/Final-Animas-Watershed-Management-Plan-12-22-11.pdf