

Cooperative Agreement

BETWEEN
SAN JUAN COUNTY
AND
UTAH DEPARTMENT OF NATURAL RESOURCES,
DIVISION OF WILDLIFE RESOURCES

Pursuant to Utah Code §23-22-1, this COOPERATIVE AGREEMENT is made and entered into upon the date of the last signature to this document, between the State of Utah, Department of Natural Resources, Division of Wildlife Resources (UDWR) and San Juan County for completion of the *Mill Creek (Moab) Watershed Restoration Partnership (#5260)* proposed through the Utah Partners for Conservation and Development (UPCD) Watershed Restoration Initiative (WRI).

The Parties agree as follows:

1. UDWR will:
 - a. Provide up to \$5,700 for the completion of the *Mill Creek (Moab) Watershed Restoration Partnership (#5260)*.
 - b. UDWR will assist with project entering of completion reports as needed.
2. San Juan County will:
 - a. Install and maintain a cattle guard across county road #128 (Lat. 38 25' 59.174" N, Long. 109 20'44.289" W).
 - b. Project activities will be completed by June 30, 2021. Work with the project managers to submit a completion report in the WRI online database within 3 months of completion of project or by August 31, 2021.

All provisions of Attachment A and Attachment B are incorporated into and become a part of this Cooperative Agreement. If provisions of the Cooperative Agreement conflict, the order of precedence shall be (i) Attachment A; (ii) Cooperative Agreement signature page; and (iii) Attachment B.

SIGNATURES ON FOLLOWING PAGE

Agreed to by:

San Juan County

Date

Division of Wildlife Resources/Director

Date

Division of Wildlife Resources/Financial Manager

Date

State of Utah/Division of Finance

Date

ATTACHMENT A – STANDARD TERMS AND CONDITIONS

1. **INVOICING:** The Parties agree to share records with one another detailing expenditures pursuant to the Cooperative Agreement on a quarterly basis, and to reconcile all accounts no later than June 30 annually. The Cooperative Agreement number shall be listed on all invoices, freight tickets, and correspondence.
2. **LAWS AND REGULATIONS:** Each Party shall be responsible for ensuring their individual compliance with all applicable federal and state constitutions, laws, rules, codes, orders, and regulations, including applicable licensure, certification, and permitting requirements.
3. **CONFLICT OF INTEREST:** PARTNER represents that none of its officers or employees are officers or employees of UDWR or the State of Utah, unless prior written disclosure has been made to UDWR.
4. **RECORDS ADMINISTRATION:** PARTNER shall maintain all records necessary to properly account for PARTNER's performance and the payments it receives from UDWR pursuant to this Cooperative Agreement. These records shall be retained by PARTNER for at least six (6) years after final payment, or until all audits initiated within the six (6) years have been completed, whichever is later. PARTNER agrees to allow, at no additional cost, the State of Utah, federal auditors, and UDWR staff, access to all such records.
5. **TERMINATION:** This Cooperative Agreement may be terminated with cause by UDWR in advance of the specified expiration date by providing prior written notice to PARTNER. PARTNER will be given ten (10) days after written notification to correct and cease the violations, after which this Cooperative Agreement may be terminated for cause immediately. This Cooperative Agreement may also be terminated without cause (for convenience), in advance of the specified expiration date, by either party, upon sixty (60) days written termination notice being given to the other party. UDWR and PARTNER may terminate this Cooperative Agreement, in whole or in part, at any time, by mutual agreement in writing. Upon termination of the Cooperative Agreement, PARTNER shall be compensated for eligible services properly performed up to the effective date of the notice of termination. In no circumstance shall UDWR be responsible for any costs for services unsatisfactorily performed, outside of the scope of the project proposal, performed after the effective date of the notice of termination, or for costs exceeding the reimbursable total identified herein.
6. **GOVERNING LAW AND VENUE:** This Cooperative Agreement shall be governed by the laws, rules, and regulations of the State of Utah. Any action or proceeding arising from this Cooperative Agreement shall be brought in a court of competent jurisdiction in the State of Utah. Venue shall be in Salt Lake City, in the Third Judicial District Court for Salt Lake County.

7. **DEBARMENT:** PARTNER certifies that it is not presently nor has ever been debarred, suspended, or proposed for debarment by any governmental department or agency, whether international, national, state, or local. PARTNER must notify the UDWR within thirty (30) days if debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in any contract by any governmental entity during the Cooperative Agreement term.

8. **LIABILITY:** Each Party shall be responsible for any claims, losses, suits, actions, damages, and costs of every name and description arising out of their own performance under this Cooperative Agreement. If one or more parties are found negligent, they each shall bear their proportionate share of any allocated fault or responsibility. Nothing herein shall be construed as waiving any immunity, the monetary damage limitations, or any other provision set forth in the Utah Governmental Immunity Act, Utah Code §§ 63G-7-101 through 63G-7-904.

ATTACHMENT B – PROJECT PROPOSAL



**San Juan County
Road Department**

P.O. Box 188 • 881 East Center St
Monticello, Utah 84535

435-587-3230 • Fax: 435-587-2771

**AGREEMENT FOR INSTALLATION AND MAINTENANCE
OF CATTLE GUARDS ON COUNTY ROADS**

THIS AGREEMENT, between the County of San Juan, of the State of Utah, hereinafter called "County" first party, and Manti-La Sal NF/ Utah Division of Wildlife Resources hereinafter called "Applicant", a second party.

WITNESSETH:

- 1. The County agrees to install and maintain a cattle guard of no less than 14 feet X 7-1/2 feet, across an existing County road at the following described location (*attach a map if possible*):

Pack Creek Ranch area(see attached map). I think that it may need 2 of 8 foot cattle guards in this location. We have a WRI that is paying for this and so the contract to pay needs to be with UDWR

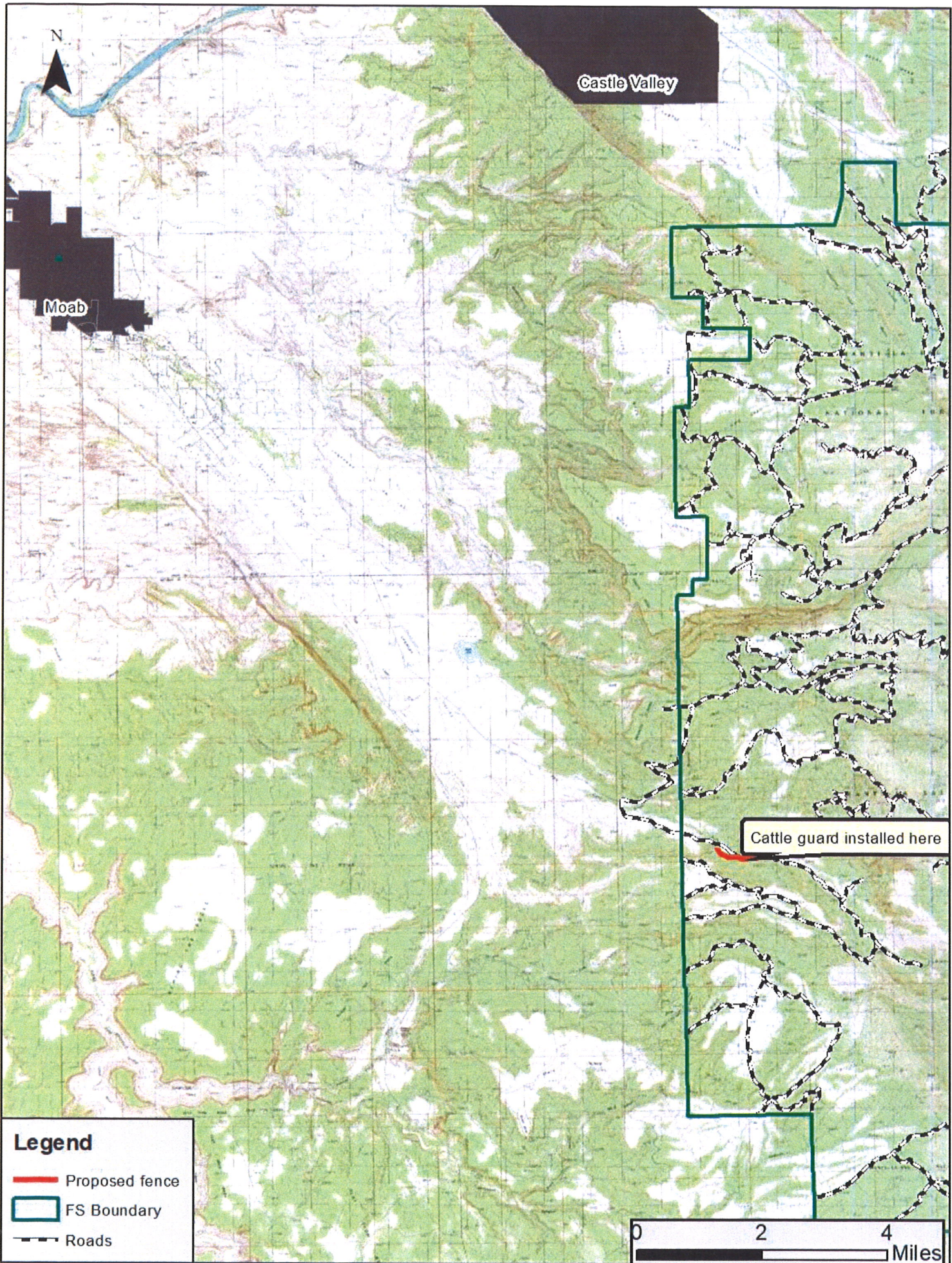
Road #: see map Longitude: _____ Latitude: _____

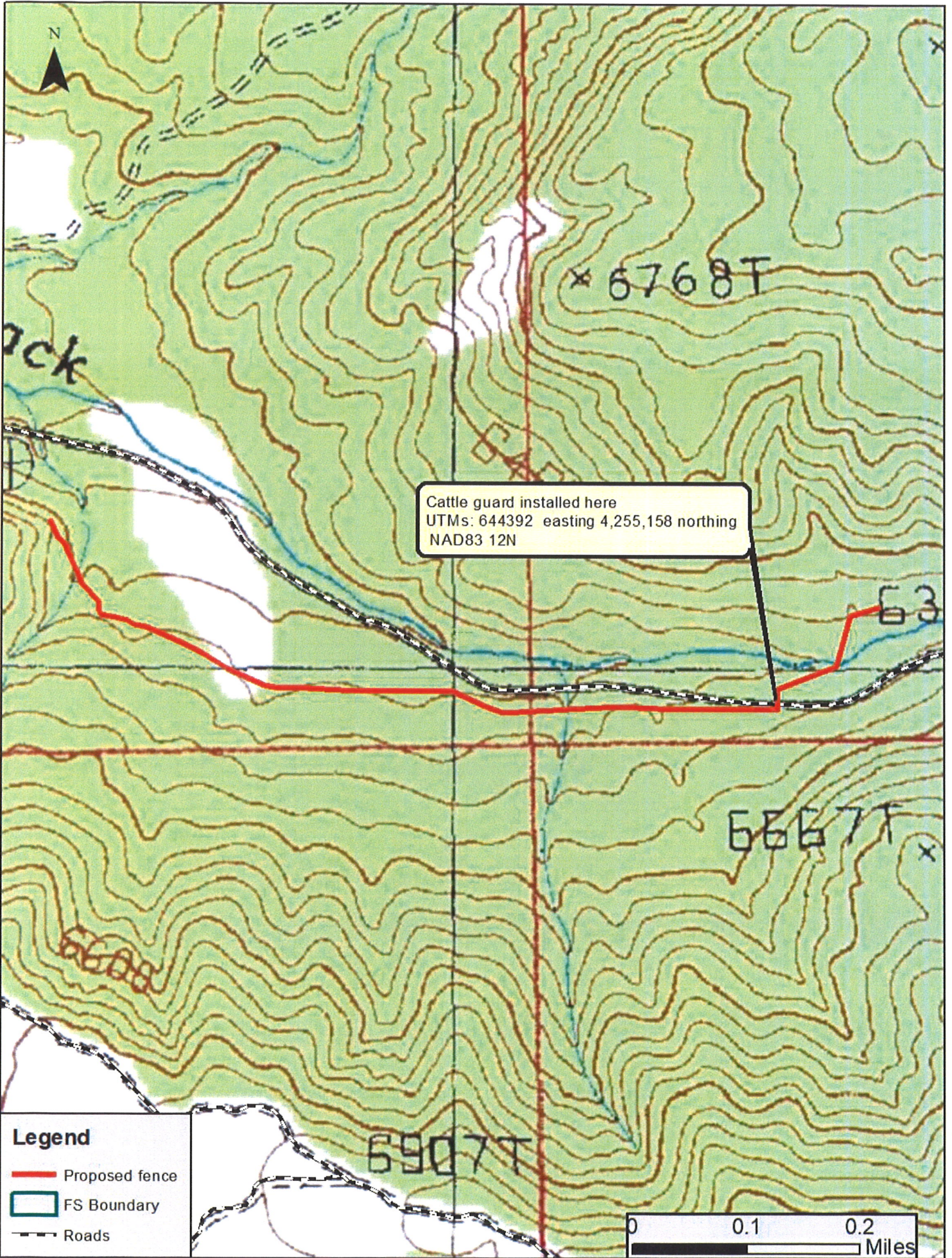
- 2. The applicant agrees to pay a minimum of **\$3,500.00** toward the cost of installation and materials of a single cattle guard. If road width requires a second cattle guard, the applicant will be responsible for the actual cost of additional materials. Due to fluctuation in prices, the additional cost will be determined and applicant notified upon approval. **Payment of the \$3,500.00 must be received before installation is scheduled. An invoice will be generated upon completion with the remaining amount due within 30 days of invoice.** This cattle guard will remain property of San Juan County until the road is no longer maintained by San Juan County. At that time, ownership will revert to the applicant of this agreement. *Additional Cost Estimate: \$2,188.00. Total Anticipated cost: \$5,688.00.*
- 3. The applicant agrees to maintain all fences or gates attached to this cattle guard.
- 4. All sites and specifications must be approved by the Road Superintendent before installation is made.

APPLICANT: Tina Marian-US Forest Service DATE: 6/30/2020

APPROVED BY ROAD SUPERINTENDENT: _____
Signature Date

We need a cattle guard to be installed at the location indicated on the maps for a new fence line that is going to be constructed. It would be preferable if the installation could occur prior to the construction of the fence, which will be contracted out.





B128 - Pack Creek Additional Material Cost - Estimate

Additional Material

	Price Per Unit	Quantity	Total
Cattle Guard - 10 Foot	\$ 1,840.00	1	\$ 1,840.00
Concrete Footers - 10 Foot	\$ 141.00	2	\$ 282.00
1 1/2" Gravel - c.y.	\$ 5.50	12	\$ 66.00
Total Additional Material			\$ 2,188.00



Mill Creek (Moab) Watershed Restoration Partnership

Project ID: 5260
Status: Current
Fiscal Year: 2021
Submitted By: N/A

Project Manager: Nicole Nielson
PM Agency: Utah Division of Wildlife Resources
PM Office: Southeastern Region
Lead: Utah Division of Wildlife Resources
WRI Region: Southeastern

Description:

Riparian and upland restoration to create watershed related restoration in the Mill Creek Watershed from the upper watershed on Forest Service lands to lower reaches in the town of Moab. Project activities will involve hand cutting, piling, herbicide treatments on invasive as well as native vegetation in need of some succession changes. Project activities cover private, BLM and USFS lands in the area.

Location:

Mill Creek Watershed within Moab, UT to the upper reaches within the La Sal Mountains. Portions of the Mill Creek and Pack Creek drainages are high-priority CFLRP watersheds.

Project Need

Need For Project:

The Mill Creek Watershed includes Mill and Pack Creeks, and is part of the domestic and irrigation water system serving areas of Grand County including the City of Moab. It is a perennial stream with its headwaters in the La Sal Mountains on USFS lands, that flows through BLM-managed areas in Mill Creek Canyon before entering the City of Moab and finally flowing into the Colorado River via the Matheson Wetlands. While the watershed crosses many jurisdictions, work in all areas focuses on reducing fire fuels, improving vegetation diversity to improve wildlife habitat, and maintaining high water quality. UPPER WATERSHED (USFS and FFSL areas) The riparian corridors in the upper watershed (USFS) are dominated by increasingly dense vegetation communities (gambel oak, big sagebrush and pinyon/juniper). These areas are in a condition that if a fire starts, on an average summer day, it would be uncharacteristically hot, difficult to control, and would be a significant threat to private land, public and firefighter safety (access and egress) and developments on the west slope of the La Sal Mountains. Based on recent experiences with wildfires in similar elevation and vegetation communities, the after effects of a severe fire in the upper watershed would likely lead to overland flow, erosion, and debris flows from storm events with negative impacts downstream in the Mill Creek drainages. Encroaching pinyon and juniper trees into sagebrush communities and previously-treated

chainings are reducing the value of these areas for wildlife, especially big game, and livestock. Treatment in these areas would increase diversity and productivity of desirable browse and herbaceous forage plants. There are several acres of salt cedar (*Tamarix ramosissima*) and Russian Olive (*Elaeagnus angustifolia*) that have invaded the side drainages of Mill Creek on Forest Service administered lands above Flat Pass. There is a need to further inventory and treat these drainages, as well as inventory Mill Creek for these invasive species and treat if found to increase native plant health and diversity. In Pack Creek, livestock grazing is impacting the riparian area on the Forest and on the private land below it. A new fence would protect the Pack Creek riparian area on 1/2 mile of stream on the Forest and the 3/4 mile of creek running through the private Pack Creek ranch area. On private lands in the upper Mill Creek watershed on the west slope of the La Sals there is incredibly thick pinyon, juniper, and oak stands around houses, cabins, and outbuildings. Many houses have no defensible space. In addition, there is often a lack of cleared ingress and egress to these properties in case of a fire. This project (FFSL) would expand on work already occurring on private lands on the west slope of the La Sals.

MIDDLE WATERSHED (BLM reaches) As the creeks leave the upper reaches of the watershed on the forest, Mill Creek has carved Mill Creek Canyon, which is primarily BLM managed land. This project addresses several ecological and social needs in the south canyon including improving overall watershed health through measures that improve water quality conditions, improve soil conditions, increase floodplain functionality, increase streambank stability, decrease fire hazards, increase native plant diversity and densities, and improve wildlife habitats.

LOWER WATERSHED (Private and City reaches) The lowest 3.5 miles of Mill Creek and 5 miles of Pack Creek run through Spanish Valley and the City of Moab, and are dominated by areas of dense woody invasive species, mostly Russian olive with some tamarisk, as well as Siberian elm and tree of heaven in select spots. In addition to dangerous levels of fire fuels, the dense woody vegetation in some areas along the creek focuses high water flows into the channel rather than allowing it to spread, and has resulted in significant downcutting and channelization. This has reduced the riparian vegetation along the creek due to a lowered water table, as well as results in loss of soil and water. In the last 5 years there has been an increase of invasive ravenna grass along both Mill and Pack Creeks. Ravenna grass can grow up to 12 feet tall, and like tamarisk and Russian olive, can act as a ladder fuel where an otherwise native ecosystem would be more open. It also tends to form dense stands along the banks which can further trap flood flows in the channel, reinforcing channelization. Ravenna has been spreading quickly throughout Mill and Pack creeks in town and upstream into the canyons above town and needs to be treated soon to prevent its establishment as a permanent new addition to the invasives in Mill and Pack Creeks. This project maintains and expands upon past efforts improving the primary wildlife links from the La Sal Mountains to the Colorado River. These corridors are an important link for larger mammals and birds, between the river and wetland areas and the mountains. The USFWS recognizes this area as potential habitat for Southwest Willow Flycatcher, Mexican Spotted Owl and Yellow Bill Cuckoo. The Moab BLM office completed section 7 consultation with USFWS who concurred that the project would benefit these species by including seasonal avoidance measures and by restoring the riparian vegetation community to greater than 85% native species composition within 90% of the riparian areas.

Objectives:

BLM: 1) The first project objective is to decrease the percentage of woody invasive plants to less than 5% in Mill Creek Canyon. New treatments involve removing less than 30% of total cover at any one time. Re-treatments are needed over a 3 to 5 year period to ensure fully successful conditions. These actions would increase native plant diversity and densities, improve wildlife habitats, increase the amount of overflow channels and improve floodplain functionality, improve shading of the stream

channel and improve stream bank stability as native plants dominate the streambanks again, reduce the potential for catastrophic wildfires and improve public safety. 2) A second objective of this project is to reduce redundant social trails and other disturbed areas in Mill Creek Canyon. This would occur through discouraging new social trails using brush/ rocks and by applying seed to disturbed areas. These actions would improve water quality conditions, increase infiltration rates and improve aquifer recharge rates. 3) A third objective is to construct erosion control structures made of native materials in multiple gullies adjacent to the creek. These structures would be small features to slow down flood waters and stabilize soils thus improving water quality conditions and soil conditions. 4) Finally this project has an objective of reducing the amount of trash in the watershed and therefore reducing the amount of trash washed into the stream after a rainstorm. This would improve water quality conditions and improve public safety to swimmers and recreationists.

USFS: 1) The reduction of pinyon/juniper/oak density on 870 acres of riparian corridors would reduce the risk from wildfire to life and property in the area and reduce the negative consequences of a high severity wildfire fire on the soil, vegetation and wildlife habitat resources in the area. 2) Treat approximately 15-20 acres of woody riparian invasive species (tamarisk and Russian olive) in the Mill Creek drainages. 3) Inventory 1.5 miles of riparian along Mill Creek from the Forest Service boundary and up to the east. 4) Protect Pack Creek riparian while still providing water to grazing livestock and preventing livestock from drifting onto the private land.

FFSL: 1) Reduce the threat of wildfire impacts on homes and cabins in the La Sals and along riparian areas. 2) Reduce the possibility of catastrophic fire impacts on downstream communities in Spanish Valley and Moab by decreasing fire severity via woody material removal.

RRR: Previous removal of invasive trees along Mill and Pack creek has proven to be effective with proper follow up. This project seeks to coordinate primary treatment of woody invasives along both of these creeks as well as limited follow-up work to reach a level of low intensity management that both public organizations and private landowners can manage into the future. The overall objectives are as follows: 1) Coordinate with the numerous landowners along Mill and Pack creeks to begin primary treatments of woody invasives to expand from new significant firebreaks totaling at least 20 acres. 2) Provide information and training to landowners with property along Mill and Pack creeks about the treatment of Russian olive, tamarisk, ravenna and other invasives so that they can continue management in the future. 3) Implement follow up treatments to as many previously cleared sites with saplings, resprouts or annual weeds as possible in both Mill and Pack Creeks, totaling approximately 150 acres. Ensure follow up meetings with landowners about the successes and failures of the removal and revegetation efforts. 4) Actively revegetate impacted sites where needed using container stock and seeding with locally sourced native plant materials. 5) Map, and then treat or remove ravenna grass along the creek corridors in town and link with efforts above town. 6) Continue efforts to evaluate the efficacy of various removal and revegetation treatments through monitoring the vegetation response of the areas treated.

Threats / Risks:

BLM: This project addresses multiple threats to watershed health and water quality conditions including increasing invasive species as well as increasing erosion and sedimentation from heavy recreation use. The threat from increased invasive woody and non-woody plant concentrations leads to decreased riparian diversity, decreased native plant densities, increased catastrophic wildfire hazards and increased damage from large flood events. These impacts affect both terrestrial and aquatic wildlife habitats. These threats will continue to increase in severity without these treatments. Another threat to the Mill Creek Watershed is continued degraded water quality conditions. Mill Creek is currently listed for high stream temperatures and high levels of Total Dissolved Solids, and is impacted

by surface disturbances within the riparian corridor especially in Mill Creek Canyon. By reducing erosion and revegetating disturbed areas, water quality conditions will be improved along with aquatic habitats. Without this project water quality conditions may not improve and may continue to degrade. There are no threats or risks expected from implementing this project. BLM and partners are committed to working in the Mill Creek Watershed until restoration efforts are complete and sustainable. USFS: A Forest Service Fire Regime/Condition Class Assessment identified the Mill Creek watersheds as moderately departed from historic conditions in a mixed severity fire regime. As the final phase of a 4,500 acre project, the proposed treatments in the drainage corridors will reduce the risk of uncharacteristic wildfire throughout the area. The actions provide a combination of physical, biological, social, and environmental benefits while attaining the stated objectives of reducing wildfire risk and improving vegetation conditions. The actions would reduce fuel loading, stand and crown/canopy density, and fire hazards that threaten resources, important watersheds, administrative sites, private property, and the public. Project actions also allow for restoration of important vegetative communities on the forest, using well-documented, effective vegetation treatment methods with little risk of unknown consequences. The treatments are clearly better than not taking action (doing nothing). The risk from taking no action is the potential to negatively impact a variety of resources if a catastrophic fire were to occur. Negative impacts to wildlife habitat and rangeland resources occur if pinyon-juniper continues increase in density and encroach on natural sagebrush openings, and in previously-treated (chained) areas due to the lack of disturbance. A high-severity fire would almost certainly lead to a noxious weed infestation. Taking no action would not meet Forest Plan objectives. Improper livestock grazing can be a threat and risk to riparian areas, however with correctly configured fencing much of the riparian area can be protected while still providing water access to livestock. RRR: The primary threats to Mill Creek Watershed include increased invasive woody and non-woody plant concentrations, decreased riparian diversity and native plant densities, increasing fire fuels densities and distributions, as well as loss of interest and momentum in riparian management after the Cinema Court Fire. It has been 17 months since the Cinema Court Fire that burned 8 houses and a number of other buildings. Interest in managing the growing fire hazard in the creeks was very high right after the fire. A number of meetings were organized by Rim to Rim Restoration, the City of Moab, Grand County, the Moab Valley Fire Department, FFSL, among others to coordinate landowners and figure out needs and funding. In order to keep the forward momentum and interest in riparian management larger scale removal needs to start happening to continue to capture community interest. If we lose this community push for riparian management, we risk: 1) Increasing risk of fires leading to the possible loss of large overstory cottonwoods, homes, and buildings. 2) Loss of riparian habitat and reduced native plant diversity and regeneration due to dominance of large woody invasive species. 3) Expansion of Russian olive seed sources throughout the valley, into the recently cleared areas of the Matheson Wetlands and the Colorado River corridor. 4) Expansion of ravenna grass along riparian corridors. If we do not keep its population in check now it may become very difficult to impossible to manage in a few years when its population is likely to be significantly larger.

Relation To Management Plan:

This riparian and upland restoration project would help achieve the objectives set forth in the following management plans as described below. Plans are listed from most local to more regional. The Grand County General Plan includes the vision and goal of preserving riparian habitat by improving the condition of land along the Mill Creek corridor. This project would improve riparian habitat by reducing the amount of invasive plant species and increasing native plant diversity and densities in Mill Creek Canyon. The Grand County Weed Dept has prepared an Invasive Species Control Plan which

identifies an objective of controlling noxious exotic plant species in Grand County. Russian Olive trees are included on the Grand County Noxious Weed List. This project would reduce the amount of Russian Olive in Mill Creek Canyon. The Grand County Resource Management Plan encourages public land managers to enhance and restore watersheds in the Moab and Spanish Valleys and encourages FFSL to reduce wildfire hazards in the wildland-urban interface. The plan also identifies that invasive weeds should be reduced in order to allow native species to thrive with wildlife corridors that connect natural areas. The plan specifically mentions that riparian habitat should be preserved and restored. This project would reduce the risk of fire, particularly in the wildland-urban interface while reducing invasive weeds such as Tamarisk, Russian Olive, and Ravenna grass. Restoring the riparian area will create more continuous native habitat and improve the watershed by reducing erosion in the creek. The Utah Division of Water Quality (UDWQ) identified Mill Creek as impaired and not meeting state water quality standards in 1998. In 2002 UDWQ completed a Total Maximum Daily Load (TMDL) report with recommendations to improve water quality conditions. These recommendations include improving riparian conditions and decreasing erosion within the watershed. This project would improve riparian conditions by reducing the amount of invasive plant species (Russian Olive and Ravenna Grass) and increasing native plant diversity and densities, by reducing the threat of catastrophic wildfire, and increasing overflow channels therefore reducing damage from large flood events. This project would also decrease erosion by constructing several small gully control structures directly adjacent to Mill Creek in Mill Creek Canyon. The Grand Conservation District Resource Assessment identifies natural and social resources present in Grand County and details specific areas of concern, including soil erosion and noxious weeds. The assessment cites a need to improve stream banks and riparian areas by removing invasive species and improving native plant communities. This project would reduce the amount of noxious weeds in Mill Creek Canyon, improving riparian conditions and increasing native plant diversity and densities. The Southeast Utah Riparian Partnership (SURP) prepared the Colorado River Woody Invasive Species Management Plan through collaboration with 29 local partners including the Tamarisk Coalition, Grand County Council and the Utah Division of Wildlife Resources. The plan's main objective is to reduce non-native plant species within 80% of high priority streams by 2020. The Mill Creek Watershed is listed as a high-priority area in this plan. This project would reduce the amount of non-native invasive plant species in Mill Creek Canyon. The BLM Moab Field Office 2008 Resource Management Plan (RMP) identifies two objectives that would be accomplished by implementing this plan. Goal/ objective #VEG-9 states "reduce Tamarisk and Russian Olive where appropriate ... and restore riparian habitat to native willow and cottonwood communities". Goal/ objective #WL-8 states "prevent the spread of invasive and non-native plants especially cheatgrass, Tamarisk and Russian Olive. Strive for a dense understory of native species in riparian areas with a reduction in Tamarisk and improvement of cottonwood and willow regeneration." This project would reduce the amount of invasive and non-native plants including Russian Olive and Ravenna Grass in the riparian areas in Mill Creek Canyon, allowing native species such as cottonwoods and willows and native understory species to flourish and regenerate. The 2005 BLM Utah Riparian Policy states riparian areas are to be improved at every opportunity. This project would improve the riparian area by reducing the non-native invasive plant species and increasing native plant species diversity and densities in Mill Creek Canyon. The Utah Wildlife Action Plan, Utah Division of Wildlife Resources, identifies actions needed to protect lowland riparian habitats including restoring degraded habitats. This project would protect lowland riparian habitats by reducing the potential for catastrophic wildfires, reducing the potential for damage from large flood events by increased overflow channels in Mill Creek Canyon, and decreasing sediment loading from gullies adjacent to Mill Creek. The WAP also identifies Western Yellow-billed Cuckoo and Southwestern Willow Flycatcher as species

of greatest conservation need. The removal of non-native vegetation followed by revegetation of native species such as cottonwood and willow may create stopover and foraging areas for these species. As willow patches become more dense through time, willow flycatchers may find nesting opportunities within the project area. The Big Free-tailed Bat is also benefited by improvements to the watershed. Threats to this species may be riparian management and disturbance near roost sites. This project will improve the riparian area and also aims to reduce disturbance from recreation by eliminating trails. The Conservation and Management Plan for Three Species in Utah (2006) describes the importance of maintaining populations of roundtail chub, flannelmouth sucker, and bluehead sucker throughout their ranges. One method for maintaining populations is to enhance and maintain habitat by restoring habitat features and altered channels. Increases in water temperature and declines in water quality negatively impact the fish and are only exacerbated by invasive riparian species such as tamarisk. Although these fish are more often found in large rivers, tributary streams are often important for their life cycle. Removal of invasive species and allowing the re-establishment of native vegetation can increase stream complexity as well as reduce temperature. The State Resource Management Plan identifies the importance of the Watershed Restoration Initiative. It specifically mentions support for efforts to reduce wildfire and the associated soil loss from erosion and sedimentation. It talks specifically about improving wildlife populations and reducing the risk of additional listing of species under the Endangered Species Act. Additionally, the plan identifies the importance of improving resistance to invasive plant species specifically mentioning that healthy ecosystems are the most effective way of preventing the spread of noxious weeds. The state supports the proposals proactive management of noxious weeds. This project will reduce the risk of fire by removing flammable, invasive vegetation from the riparian area and allowing for the establishment of native species which provide better habitat for sensitive wildlife species. The Southwestern Willow Flycatcher Recovery Plan identifies the removal of exotic plants as important for the recovery of this species. This project would reduce the amount of exotic plants such as Russian Olive and Ravenna Grass in Mill Creek Canyon. The Tamarisk Coalition's Riparian Restoration Plan identifies the need to restore priority riparian areas to reduce woody invasive plants and to increase the diversity and density of native plant species. This project would reduce the amount of Russian Olive in the riparian areas along Mill Creek in Mill Creek Canyon, leading to increased diversity and density of native plant species. The project is consistent with the Goals and Desired Future Conditions in the Manti-La Sal Forest Land and Resource Management Plan of 1986, as amended. It will: * Minimize hazards from wildfire and reduce fuel loading, stand and crown/canopy density, and resultant fire hazard to vegetation, the public, private property, and firefighters (LRMP III-5). * Maintain a healthy forest by applying appropriate silvicultural treatments (LRMP III-3). * Maintain/improve habitat capability through direct treatment of vegetation (LRMP III-23). * Provide habitat needs for deer and elk (LRMP III-19), especially improving the cover:forage ratio. * Control noxious weeds and poisonous plants in cooperation with Forest users and State and local agencies. (LRMP III-3) * Control and reduce noxious weeds and poisonous plants, using integrated pest management techniques and strategies; including the use of herbicides, biological control agents, and/or mechanical or hand treatments.(LRMP III-25) * Invest in range improvements where they will provide the greatest benefit.(LRMP III-3) * Give preferential consideration to riparian area dependent resources in cases of unresolvable resource conflicts. (LRMP III-31) The Utah Fire Amendment has a goal to reduce hazard fuels. The full range of fuel reduction methods is authorized, consistent with forest and management area emphasis and direction. * Certain vegetative types are to be managed such that varying successional stages will be present to provide for a high level of vegetative diversity and productivity (III-2). * Pinyon-juniper stands on gentle slopes and on lands with good soils will be treated periodically to maintain early successional stages (III-8). *

Intensive management practices would maintain structural diversity within the woody species in at least 25 percent of the area covered by the Gambel oak and mountain shrub type. In some cases, the Gambel oak would be encouraged to successionally develop as an open savannah or in a high seral stage (III-9). Designated as a Healthy Forest Restoration Act (2003) project, the treatments meet the mandate for the Forest Service to restore fire dependent ecosystems and reduce fire risk to people and property. Project actions are consistent with proposed management in the Moab/Spanish Valley Wildfire Protection Plan and the Southeastern Utah Regional Wildfire Protection Plan. The Statewide Mule Deer Plan specifies management actions for important ranges: convert habitats back to young, vigorous shrub-dominated communities; manage portions of pinyon-juniper ranges in early successional stages. The La Sal Deer Unit Management Plan has an objective of improving deer habitat and carrying capacity, and pursuing cooperative projects to improve the quality and quantity of deer habitat. The project meets several objectives in the Statewide Elk Herd plan: support habitat improvement projects that increase forage for big game and livestock, initiate vegetative treatment projects to improve elk habitat on winter ranges, improve upper elevation winter ranges to encourage elk to winter at higher elevation than mule deer. The project is specified in the 2012 La Sal Elk Herd Management Plan as a habitat improvement project. There are 3 Key Terrestrial Habitat types from the Utah Wildlife Action Plan in the project area. The West Slope project treatments follow the management strategies for these types: restoration in the Gambel oak type by cutting/mulching invading pinyon-juniper, single tree mulching/cutting invading conifer in the mountain sagebrush type, reducing fire risk (uncharacteristic fire could increase the spread and dominance of invasive weeds) in the mountain shrub type through appropriate treatment methods. The Golden Eagle, a species of greatest conservation need in the WAP, may also benefit from this project by increasing habitat for prey species thus improving foraging opportunities for eagles. The Utah Wild Turkey Management Plan has a goal of maintaining and improving wild turkey populations by stabilizing populations. Suggested methods include reducing the risk of catastrophic events such as fire as well as conducting habitat projects to address limiting factors. The plan has an objective of increasing habitat quality and quantity through habitat improvement projects. This project will reduce the risk of a catastrophic fire impacts to turkey habitat in the Mill Creek area. It will also enhance native plants available for diverse foraging opportunities by turkey while retaining mature acorn-producing trees and adequate cover. The Grand County CWPP currently being developed identifies the La Sals and the Mill Creek Watershed as one of three priority areas due to private holdings within the BLM and National Forest. Fuel Reduction on private land is considered a high impact high priority activity on the La Sals and Mill Creek Watershed as the plan is currently written. The Southeast Utah Catastrophic Fire working group designated the Moab/Spanish Valley watershed area (including Mill Creek) as a High Priority Focus Area.

Fire / Fuels:

BLM: The proposed project would significantly reduce the risk of wildfire and reduce the continuity of hazardous fuels, particularly ladder fuels that build up under Russian olives and are created by decadent Ravenna grass. The entire Mill Creek riparian corridor is connected by fairly dense riparian vegetation and if a fire were to start in this corridor, it has the potential to be a large scale catastrophic burn. The potential for a wildfire caused by human ignition is high in the heavier use areas on BLM managed lands. Removing Russian olives and Ravenna Grass not only reduces fuel loads but also isolates smaller fuel load areas. If a fire were to start, the chance of a large scale catastrophic fire would be greatly minimized as the fire would be more accessible and suppressed more easily, and may not spread as rapidly. The relatively intact habitat corridor from the La Sal Mountains to the Colorado River would also be protected. Continuing this work is more important now with increased recreation

uses in Mill Creek Canyon raising the potential for human caused fires, and with more frequent drought years making fuels drier for longer portion of the year. USFS: The project is bordered on the west by BLM and private lands and Forest Service lands on the south, east, and north sides. There are private inholdings within the project area, and the 3700 acres already treated by the Forest Service are immediately adjacent to the inholdings with homes and other structures. All proposed treatment locations are within 1.5 miles of private inholdings/Forest boundary. This is an authorized hazardous fuel project as defined by The Healthy Forest Restoration Act of 2003 (HFRA), designed to reduce vegetation density and ladder fuels to reduce the probability of a high severity wildfire in the 8300 acre project area that encompasses five private inholdings with residences, outbuildings, and infrastructure, as well as key public communication systems (Bald Mesa communication site/radio towers), utility lines and Moab's Mill Creek municipal watershed. This proposal will reduce live and dead fuels within the riparian corridors in the treatment area. The reduced fire risk will benefit National Forest lands and improvements by aiding in protection from fires (natural and man-caused) which spread from private lands, developed recreation sites, dispersed recreation areas, and other areas of the National Forest. It will also aid in the protection of private infrastructure from fires that initiate on and spread from the National Forest. FFSL: FFSL has been working with other funding sources to do defensible space clearing on the private lands surrounded by National Forest on the west slope of the La Sals. We plan to create clearings via lop and scatter and chipping as well as create shaded fuel breaks directly adjacent to these cabins. Some of the properties we are currently working on are directly adjacent to work proposed by the Forest Service in this proposal. RRR: This proposal seeks to abate the threat of fire and level of intensity by creating and expanding several fire breaks on private lands along vulnerable stretches of Mill and Pack Creeks in the lower reaches of the creeks. These fire breaks are designed to break up contiguous fuel loading and protect ecological and human values along these riparian corridors. According to UWRAP (Utah Wildfire Risk Assessment Portal), there are high and very high levels of fire risk along a large portion of these riparian corridors, which means there is a high likelihood of loss or harm in the event of a fire. This was proven to be true in the 2018 Cinema Court fire, in which 8 homes were lost in mere hours along Pack Creek. The community has since voiced desire for fire protection going forward, and Pack Creek will be prioritized for fire resiliency. In Mill and Pack Creeks in the Moab valley, nonnative woody species (Russian olive and tamarisk) have largely replaced fire-resilient natives such as willows, squawbush/sumac, and cottonwoods. Ravenna grass, a nonnative and fast growing ornamental bunch-grass, has also been outcompeting natives along these creeks. Contiguous loading of these species serves as a serious wildfire threat for the riparian area. Russian olive, tamarisk and Ravenna have created a dense understory of growth below native cottonwood trees. They all produce large quantities of volatile fuels that allow fire to spread vertically and reach native canopy cover, creating devastating crown fires in the cottonwoods. The current fuel loading also exacerbates the speed and intensity with which fire moves horizontally. Furthermore, fire spread and intensity are more extreme when there is an extended drought in the area or a buildup of dead and senescent material in the tamarisk crowns, as is currently the case. Removal efforts are expected to reduce the risk of catastrophic fire as volatile fuel loads are reduced in some of the more choked sections of the creeks. It will also allow better creek access for fire personnel in the event of a fire. This will not only improve firefighter safety, it will also assist in further protection of the homes and structures built adjacent to the creek. Additionally, removing the invasive vegetation will promote the establishment of under-story native vegetation and will reduce soil erosion, which is critical to maintaining riparian ecosystem resilience. Work in 2019/2020 will kick off a longer process engaging land owners along the creeks in Moab to work towards a fire defensible healthy riparian habitat by 2028.

Water Quality/Quantity:

Mill Creek and Pack Creek are the main perennial streams that drain the Mill Creek Watershed and are listed by the State of Utah Division of Water Quality (UDWQ) as not meeting the state standards associated with its assigned beneficial uses. Parameters of concern include high stream temperatures, high readings of E.coli bacteria and high levels of Total Dissolved Solids (TDS). In 2002, UDWQ prepared a TMDL report recommending actions to protect and improve water quality conditions such as improving riparian and streambank conditions. The Mill Creek Watershed has been designated as a "Sole Source Aquifer" by the EPA to protect the shallow unconfined aquifer that provides drinking water to the residents of Moab and Spanish Valley. This designation is recognized by both the BLM and USFS in their respective management plans, and certain surface disturbing activities are not allowed on federal lands in the Mill Creek Watershed. This project has the potential to improve and protect water quality conditions over both the short term and the long term by increasing the functional integrity of the riparian areas, by improving soil and vegetation conditions in the uplands, and by reducing the risk of severe, large scale wildfires. Invasive plants such as Russian olive and tamarisk constrain the channel, clog overflow channels, increase streambank erosion while reducing native tree and shrub regeneration. Reducing the density of invasive plant species in the riparian corridor would increase the functional integrity of the riparian corridor by improving floodplain connectivity, increase streambank stability which reduces erosion during larger flood events, and increase bank storage in times of high runoff allowing higher releases of shallow groundwater during periods of low stream flows. These actions would improve stream temperatures and reduce sediment loads in the perennial streams. This project would improve upland soil and vegetation conditions by managing high use recreation areas and trails, re-seeding disturbed areas and by constructing small gully control structures. Better upland conditions lead to improved infiltration rates, reducing overland flow and associated erosion and sediment loading to Mill Creek during larger rain events. This project would reduce the risk of severe large scale wildfires by clearing fuels from riparian areas and drainages. By reducing the risk of catastrophic wildfires in the watershed, the potential for associated damage including reduced soil infiltration, increased erosion and loss of top soil, long term loss of soil productivity, and accelerated sediment loading to the system would be greatly reduced. Treatment of drainages that could act as funnels during a wildfire would further protect and enhance riparian areas. This project has the potential to improve and protect water quantity over both the short term and the long term. By removing denser stands of invasive plant species from the riparian corridor, more water would be available to native plants. Protecting a portion of Pack Creek from livestock grazing should improve or maintain riparian health. By improving floodplain connectivity and functionality, natural hydrologic streambank storage processes would improve. This would allow water during high runoff periods to recharge small banks and point bars. This stored water would be released during periods of low stream flows, enhancing instream flows and water quantity conditions in times of low flows by need. By improving soil and vegetation conditions in the upland areas, with increased infiltration rates and decreased runoff rates, overall available water would increase in the watershed.

Compliance:

The proposed project is ready for implementation on BLM lands. An environmental assessment has been completed and approved. This NEPA work included consultation with US Fish and Wildlife Service regarding the Endangered Species Act. All Pesticide Use Approvals and archaeological clearances have been completed. The Forest Service lands have an Environmental Assessment and Decision Notice/FONSI completed May 8, 2015. The Decision complies with all applicable laws and regulations, including the ESA, MBTA, ARPA and NHPA and the Healthy Forests Restoration Act

(HFRA). The Forest Service completed an Environmental Assessment and Decision Notice/FONSI in 1993 regarding the control of noxious weeds on the La Sal Division. In 2000, a supplemental report updated the 1993 EA and found that the environmental effects disclosed were still relevant, that no additional analysis was required and that the decision could continue to be implemented. The Forest treats 1000-1500 acres of noxious weeds/year under this decision. A CE for the fence in Pack Creek is scheduled to be completed by May 2020. Project related work on private lands is ready for implementation. Archeological clearance has been completed on areas to be masticated and plans have been adjusted to lop and scatter due to the report. Project work on private lands and in the City of Moab would be coordinated with the Grand County Weed Dept, and would not need any compliance approvals, however work done between 2015 and 2018 through EPA 319 funding required archeological clearance, which has been completed for the entire Mill and Pack Creek areas in the Moab Valley where work may occur on this project. This project has been designed to minimize impacts to the Southwestern Willow Flycatcher, native fish populations and their habitats.

Methods:

BLM: 1) Russian Olive trees over 6" in diameter will be girdled or hack-n-squirt treated, and left standing. 2) Russian Olive trees less than 6" in diameter will be high stumped, and the stumps will be treated with approved herbicides within 15 minutes of chainsaw work. No more than 30% of canopy would be removed at any one time. 3) Slash will be cut into 1-2' long pieces and scattered if there is room. Slash may be carried out of heavier used recreation areas to reduce safety hazards to the public. Slash may be piled in 4' x 5' piles. 4) Native plants may be planted or native seed spread in heavily disturbed areas. 5) Small erosion control structures will be constructed in small gullies to reduce erosion and associated sediment loading to Mill Creek. 6) Trash pickup and trail management will be conducted frequently, with volunteer groups helping whenever possible. 7) Youth crews and the Grand County Weed Dept will treat Ravenna grass with herbicides. Ravenna grass plants may be dug up by hand, and the entire root ball removed from the stream bank or may be treated with herbicides to keep root systems intact. 8) Seedheads on Ravenna grass will be cut, bagged and removed to reduce spread by seed. 9) Native plants will be planted where Ravenna Grass plants are removed from the stream banks. USFS Fuels: Hand-cutting and piling to reduce stand density and enhance small openings. A mosaic of openings of 1 to 3 acres would be created using hand treatment of oak and pinyon/juniper. Gambel oak with diameters less than 6 inches will be targeted. Within the channel buffer zone, trees may be cut by hand and moved out of the buffer zone to be burned (pile burning will be >100 feet from drainage) or some material may be lopped and scattered. Tree removal must not adversely affect intermittent channel bank stability. USFS Invasives: See BLM and RRR methods. However, FS inventory shows that we have no trees over 6 inch diameter, and likely all individuals found will be treated rather than leaving 30% as we do not have the high density of invasives as the areas further downstream in Mill Creek. FS Pack Creek fence: About 3/4 mile of four strand, barbed wire fence and cattle guard installed to prevent cows from accessing the 1/2 mile of creek on FS and 3/4 mile of Pack Creek on private land. FFSL: South Mesa: Designated areas west and north of the cabin will have all pinyon and juniper removed by lop and scatter. Where tree density is high enough we will chip material in this area and spread chips. Directly around the cabin we will create a shaded fuel break where tree crowns are separated by a minimum of 10'. Material around the cabin will be chipped. On the removal area on the hillside East of the cabin we will cut pile and burn. Pack Creek Ranch: Dead cottonwoods will be felled and piled and burned. Directly adjacent to houses we will create shaded fuel breaks and remove all dead material. This material will be chipped and spread. Along the creek corridor we plan to create 15' fuel breaks perpendicular to the creek. There is a lot of

material in these potential fuel break areas so we will cut, chip, and spread the chips, we may also need to haul chips away. We are working with the landowners in this area to mow these fuel breaks once they are accomplished so that this work will exist in perpetuity. Mill and Pack creeks: We will work under the direction of RRR to assist how we can for Team Rubicon deployment as well as assisting in general fire fuels removal in the creeks. RRR: Despite the high density of Russian olive and other invasive trees present along most of Mill Creek, gradual removal of olive, tamarisk and elm has resulted natural regeneration of native plants including golden currant, willow, woods rose, lemonade berry, cottonwood, grasses and forbs in large areas. This is also proving true along Pack Creek. The primary guiding principal for this project is pacing removal of invasive plants at a rate that allows native plant regeneration to naturally occur. In areas where natural regeneration is not occurring, or the area is sensitive enough to require more rapid revegetation, active planting using poles and potted plants is being done. Treatment methods fall into three broad categories as outlined below, and as noted on the proposal map. 1. Large Scale Removal: In areas where removal has not yet begun, larger trees in densely infested areas will be hand cut, piled and mulched. Areas of clearing will be focused first around native trees and shrubs, and next on areas linking existing native plant stands. (2. Follow up treatments (weed wrenching and/or resprout and sapling cutting with herbicide, or basal bark treatments): New saplings will be pulled with weed wrenches and resprouts cut and treated with Garlon 4 (or other approved herbicides). In these areas other weed species are addressed using mechanical or chemical means as is deemed most effective. 3. In areas where revegetation is needed to help stabilize banks, or natural native plant regeneration needs assistance willow wattles, pole plantings, or potted plants will be installed. Most areas will not be seeded due to the readily available seed source surrounding most treatment areas. Methods used in this project vary by location and by the goals and targets within each area. Russian olive removal will involve youth corps chainsaw crews cutting trees and applying herbicide to the cut stumps. In town slash is mulched and spread to reduce annual non native plant establishment. In more remote areas of BLM lands slash materials will be cut into smaller pieces, then scattered or piled or hauled away from treatment sites as site conditions require. Youth corps crews will also treat Ravenna grass. Ravenna grass plants may be dug up by hand, and the entire root ball removed from the stream bank or may be treated with herbicides to keep root systems intact. Seedheads on Ravenna grass will be removed to reduce seed heads Moab Solutions will continue the daily trail work and trash pickup at the heavily used Powerdam area of Mill Creek Canyon, as well as organize volunteer clean-up days. Primary work in the lower watershed through this proposal will be replanting and seeding using longstem techniques, pole planting and seeding.

Monitoring:

Each participating collaborator is performing monitoring in their areas. By including work from the top of the watershed to the river, mapping of exotic plant presence will be better connected, which is particularly important with new invaders like ravenna grass. In the upper watershed the USFS is performing the following monitoring: * Day-to-day monitoring of operations will be completed during implementation by a designated Contractor Officer's Representative (C.O.R.) or a qualified Forestry Technician. * Prescribed (pile) burning will be supervised by a qualified Burn Boss to ensure that implementation is completed in accordance with NEPA, Silvicultural Prescription and Burn Plan. * Existing or new weed populations will be treated in accordance with existing noxious weed management decisions. * An interdisciplinary review will be conducted following implementation (within two years) to determine if project objectives have been met and to determine whether implementation of SWCPs has been effective. * Photo points will be established in each treatment type (mastication, hand-thinning) to identify pre and post-treatment conditions, as well as long-term monitoring points for

future reference. Post-treatment photos will be taken within one season of completion. * Three migratory bird point-count transects were established in the project area in 2007, and each has been sampled at least 5 times. Post-treatment surveys will be conducted. * Monitoring nests of raptors in the project area (peregrine falcon and golden eagle) will be continued annually. Invasives: Invasive treatments sites are inventoried and monitored annually to document effectiveness and continue with treatments as needed. Fence: Implementation monitoring to ensure correct construction of fence. Pack Creek Water Company and private residents to monitor and maintain the fence. In the upper watershed, FFSL will be establishing photo points on each private property for short term monitoring of site conditions. Day to day monitoring of contract crews on site will be performed by seasonal FFSL technicians to ensure that the scope of work is being completed. In the Middle Watershed, BLM monitoring will evaluate the success of this treatment and to determine what other work is needed to achieve project objectives. This monitoring work will involve long term photo points, vegetation monitoring, multiple indicator monitoring (MIM) and water quality sampling. Water quality investigations will be conducted in cooperation with the Moab Area Watershed Partnership and the local UDWQ watershed coordinator, as part of a watershed wide water quality study. A comprehensive monitoring report will be completed after project implementation is completed. In the Lower Watershed, monitoring will be conducted to evaluate the success of this treatment, and to determine what other work is needed to achieve project objectives. Rim to Rim has been running vegetation transects at 14 locations on Mill and Pack Creeks since 2007, with the most recent data collected in 2016. A comprehensive report produced in 2018 shows the results of over 10 years of invasive removal work and follow up active regeneration in areas where passive native plant regeneration has not occurred. Rim to Rim will collect data at these 14 transect locations in 2020 to further document the successes of large scale vegetation manipulations in the watershed. This monitoring will inform future projects through documenting changes in the vegetation response in the treated riparian areas. In addition, Rim to Rim will include photo points on all new project sites and will perform site assessments with the protocol established for the SE Utah Riparian Partnership for all areas of Mill Creek where work has been done over the past 15 years.

Partners:

The Moab Area Watershed Partnership is a local group of water users, water and land managers that work together to resolve water related issues in the Mill Creek Watershed. This group supports this project proposal and has helped with related monitoring efforts. Moab Solutions is a local non-profit organization that works closely with BLM on resource protection efforts in Mill Creek Canyon, especially working on trail management and trash pickup. The Grand County Weed Dept is supportive of this project and would be an active partner with implementation on BLM and private lands. They would lead the Ravenna Grass treatments, with BLM support. The Bureau of Land Management is the land manager for this project area and is working to mitigate impacts from increased recreation and from increased invasive plant species impacts in this watershed system. The BLM works closely with project partners on this project including the Grand County Weed Dept, the Utah Division of Water Quality and several local contractors. This project is identified on the Manti-La Sal National Forest Five-Year Integrated Vegetation Management Plan (USDA Forest Service 2005-2014), which has been coordinated with other Federal, State, and local agencies as part of our collaborative fuels management program. The State of Utah and Grand and San Juan County, Utah officials have been contacted and support implementation of this project. It is consistent with proposed management in the Moab/Spanish Valley Wildfire Protection Plan and the Southeastern Utah Regional Wildfire Protection Plan (Utah Division of Forestry, Fire, and State Lands 2007). Another beneficial effect of the extensive

public participation in the planning process was that it continued to elevate the need to have private landowners take responsibility for providing fire safe fuel conditions and structures on their own properties. The Forest Service also partners with the San Juan Cooperative Weed management area in the control of noxious weeds throughout San Juan County. Moab Valley Fire Department (MVFD): We have been working closely with the Moab Valley Fire Department to begin to coordinate efforts between agencies and landowners to remove invasives from Mill and Pack creeks. They have helped identify areas to remove as well as providing maps and other tools to identify important areas to remove. Utah Conservation Corps (UCC): Utah Conservation Corps has long been a partner in invasive species removal in this area. UCC has worked closely with land managers in this area and is uniquely qualified to provide consistent and efficient logistical support and project implementation on projects in the Moab area. The regional coordinator is intimately familiar with these project sites and what treatments work best in our region. Forestry, Fire and State Lands: FFSL as well as the Moab Valley Fire Department have been a part of the working group that has begun to coordinate the gathering of landowner needs for clearing of Mill and Pack creeks. The City of Moab: The City of Moab has been key in working with MVFD and Grand County to identify important removal areas for fire safety along the creek. Team Rubicon: Team Rubicon helped with the initial removal of burned material from the Cinema Court Fire along Pack Creek and is planning to send a large volunteer crew to Moab to help with removing more woody material from Pack Creek. Private Landowners: In addition to the above-mentioned partners open meetings have been held to gather landowners that are adjacent to either Mill or Pack creeks. These are ongoing to gauge what needs these landowners have for removal efforts and to help them reach their own neighbors to work towards removal of invasive woody biomass. Most of the creek bottom land in Moab and Spanish Valley are privately owned so these individual landowners are key to organize removal efforts. The Utah Division of Wildlife Resources has been involved with project related activities for many years now. We have provided input to reduce impacts to birds and have helped acquire services to accomplish project related activities. Pack Creek Water Company and private residents of Pack Creek private in holding.

Future Management:

BLM: Future management of the Mill Creek Watershed will continue to support the goals of this project. BLM has designated this watershed as a municipal watershed, with no new surface disturbing activities allowed. Most of the BLM lands in the Mill Creek Watershed are within the Mill Creek Area of Critical Environmental Concern (ACEC) based on important ecological resources as well as within a Wilderness Study Area (WSA).

Domestic Livestock Benefit:

BLM: There are no domestic livestock benefits from this project, as there is no grazing currently authorized on BLM lands within Mill Creek Canyon. USFS: The project area is part of three allotments. As part of a larger project, the treatments have decreased the amount of woody vegetation (especially pinyon-juniper and oak) within much of the grazed areas in these allotments. This would likely lead to an increased production of herbaceous vegetation (grass and forb species) on all 4500 treated acres. Noxious weeds are not expected to increase or spread as a result of the treatments as best management practices will be implemented. Range trend studies showed little cheatgrass in the areas to be treated and the risk of cheatgrass being established as a result of the project is very low, due to the existing diversity and healthy grass production of most of the understory layers and because of the elevation. Any other noxious weeds in the area would continue to be treated. In the short-term there could be some interruption of grazing operations; however the long-term benefits to the range resource

outweigh the short-term negative impacts that may have to occur to individual permit holders such as resting pastures or exclusion of livestock from areas. Livestock will still be able to continue to grazing in the area above the private in-holding in Pack Creek and have access to a small part of Pack Creek for water. In the future, off-site water developments will decrease livestock need of accessing the creek for water. FFSL: Treatments on private land will decrease the amount of woody vegetation and will likely increase the amount of herbaceous vegetation. This will likely increase forage for wild game species. It is possible that these private landowners may implement livestock grazing in the future, but no plans are known at this time. Residents of Pack Creek Ranch have expressed interest in wood chips and firewood so material removed from the creek bottom will be available to private landowners in the area. RRR: This project has the potential to increase water in both Mill and Pack creeks with the removal of dense stands of Russian olive and Tamarisk. The Pack Creek waterflow is especially important because it is likely connected to the valley fill aquifer which is a major source of culinary and irrigation water for Moab and Spanish Valley. Work done along Mill and Pack creeks over the past 15 years has opened up areas that have not been visible for over 25 years -- allowing consideration of water harvesting and infiltration projects that will also improve the flood capacity of the riparian area by allowing water to spread out and soak in during large events rather than simply rush down a tight channel, downcutting and eroding as it flows. The project also has the potential to both improve and increase forage along both creeks with the removal of dense and dead stands of woody invasives. The removal of these invasives will open up the understory and will allow for increases in native grasses and forbs which are more desirable for grazing and for many native species. Invasives removal will also allow for greater access to the creek for livestock and for wildlife. There is currently no grazing along this part of the project area. Some of the project area is located on public land owned by the City of Moab. This project has the opportunity to improve recreation areas along Mill and Pack creeks by opening more vegetation choked land to use as well as improving barren areas by planting native species through the NPS 319 funds for this project.

Budget	WRI/DWR	Other	Budget Total	In-Kind	Grand Total
	\$904,477.50	\$120,200.00	\$1,024,677.50	\$191,000.00	\$1,215,677.50

Item	Description	WRI	Other	In-Kind	Year
Equipment Rental/Use	FFSL chipper used on projects in the Pack Creek Ranch area as well as on private land on South Mesa. Chipper rate calculated for 4 weeks at \$1500/week.	\$0.00	\$0.00	\$6,000.00	2021

Item	Description	WRI	Other	In-Kind	Year
Personal Services (permanent employee)	Administration for projects in Pack Creek Ranch and South Mesa. \$10,000 requested is for FFSL staff assisting in UCC projects along Mill and Pack Creeks in Moab as well as for coordinating a 2021 Team Rubicon operation.	\$10,000.00	\$5,000.00	\$0.00	2021
Personal Services (seasonal employee)	Labor for FFSL seasonal fuels crew coordination and assistance with a 2021 Team Rubicon operation. Money also includes time for herbicide treatment and cleanup associated with operation. Matching funds are for work on Pack Creek Ranch and South Mesa.	\$12,000.00	\$10,000.00	\$0.00	2021
Contractual Services	Hand crew contracting for West Slope Phase 2 Catfire proposal.	\$0.00	\$60,000.00	\$0.00	2021
Materials and Supplies	RRR: Plant materials - at least 625 longstem willow, cottonwood, three leaf sumac, new mexico privet and oak and at least 7500 tubes procured by Rim to Rim for this project	\$12,500.00	\$0.00	\$0.00	2021
Personal Services (seasonal employee)	USFS: Treatment and monitoring of noxious weeds in the reaches and side drainage of Mill Creek on FS administered lands	\$3,000.00	\$2,200.00	\$0.00	2021
Motor Pool	USFS: Use of agency fleet in administration of field work (Pre and Post), and oversight of contract.	\$0.00	\$0.00	\$3,000.00	2021

Item	Description	WRI	Other	In-Kind	Year
Personal Services (permanent employee)	USFS: Unit layout and design, preparation, monitoring (pre and post), reporting and travel to and from project. May cover needed overtime as necessary.	\$2,500.00	\$0.00	\$10,000.00	2021
Personal Services (seasonal employee)	USFS: Unit layout, preparation, monitoring (pre and post) and travel to and from project. May cover needed overtime as necessary.	\$2,500.00	\$10,000.00	\$0.00	2021
Contractual Services	RRR: Youth Corps in Lower Watershed, coordinated with landowners by Rim to Rim. Anticipate 12 weeks of a crew of 5, some technical and some non technical work. Matching funds are anticipated from Team Rubicon assistance and private land owner work	\$55,250.00	\$0.00	\$100,000.00	2021
Equipment Rental/Use	RRR: Equipment and operator - mini ex with an 8' auger for longstem planting at 7 sites (anticipate a week of equipment work total). In kind is landowner owned and operated equipment used to help with work	\$4,690.00	\$0.00	\$4,000.00	2021
Contractual Services	BLM: youth crew (2 weeks in fall 2020) to conduct manual removal and treatment of Russian Olive in riparian areas on BLM lands	\$13,000.00	\$0.00	\$3,000.00	2021

Item	Description	WRI	Other	In-Kind	Year
Contractual Services	BLM: youth crew (2 weeks in fall 2020, 2 weeks in spring 2021) to conduct re-treatment of Russian Olive in riparian areas on BLM lands	\$26,000.00	\$0.00	\$6,000.00	2021
Contractual Services	BLM: youth crew (1 week in fall 2020, 1 week in spring 2021) to assist with gully treatments on BLM lands	\$13,000.00	\$0.00	\$3,000.00	2021
Contractual Services	BLM: Certified contractor to construct gully control structures, assisted by youth crews (1 week in fall 2020, 1 week in spring 2021) on BLM lands	\$20,000.00	\$0.00	\$3,000.00	2021
Personal Services (seasonal employee)	BLM: intern to support project implementation, monitoring, etc on BLM lands	\$10,000.00	\$0.00	\$10,000.00	2021
Seed (GBRC)	BLM: seed to be used on BLM lands	\$3,000.00	\$0.00	\$1,000.00	2021
Contractual Services	BLM: year round watershed improvement work in high use areas (seeding disturbed lands, picking up trash, planting, etc) on BLM lands	\$5,000.00	\$0.00	\$2,500.00	2021
Contractual Services	BLM: Grand County Weed Dept to conduct manual removal and herbicide treatments on invasive Ravenna Grass on BLM lands year-round	\$10,000.00	\$0.00	\$10,000.00	2021

Item	Description	WRI	Other	In-Kind	Year
Contractual Services	RRR: Coordination between land owners (50), Moab Valley Fire Department, FFSL, and Team Rubicon as well as youth corps workers to ensure the right work is done in the right locations. In kind from MVFD, Rim to Rim, Team Rubicon and private owners	\$35,537.50	\$30,000.00	\$15,000.00	2021
Equipment Rental/Use	Use of MVFD chipper - nominal fee per use hour to assist with maintenance and upkeep. MVFD or other will provide operator for chipper	\$1,500.00	\$3,000.00	\$0.00	2021
Contractual Services	USFS: cutting/removal (hand/chainsaw) and piling of Pinyon/Juniper and oak in the upper parts of Mill Creek and the North Fork of Mill Creek drainage's.	\$650,000.00	\$0.00	\$0.00	2021
Materials and Supplies	Fencing materials for 3/4 mile of barbed wire fence and cattle guard installation. \$5,700 San Juan County cattle guard and \$1,800 for fence installation. FS will provide materials.	\$7,500.00	\$0.00	\$8,000.00	2021
NEPA	Forest Service completing CE for fence construction	\$0.00	\$0.00	\$6,500.00	2021
Seed (GBRC)	Seed mix as noted for Lower Watershed. Some areas will be seeded more heavily than others depending on cover	\$7,500.00	\$0.00	\$0.00	2021

Funding	WRI/DWR	Other	Funding Total	In-Kind	Grand Total
	\$232,000.00	\$120,200.00	\$352,200.00	\$191,000.00	\$543,200.00

Source	Phase	Description	Amount	Other	In-Kind	Year
Moab City		Lower Watershed Request put in to City of Moab to assist with coordination efforts via Rim to Rim	\$0.00	\$10,000.00	\$0.00	2021
Grand County		Lower Watershed Request in to Grand County for funds to support coordination between land owners and agencies	\$0.00	\$20,000.00	\$0.00	2021
Rim to Rim Restoration		Lower Watershed In kind work coordinated by RRR but coming from Team Rubicon, Moab Valley Fire Department, private land owners and other local sources as possible.	\$0.00	\$0.00	\$119,000.00	2021

Source	Phase	Description	Amount	Other	In-Kind	Year
Rim to Rim Restoration		Lower Watershed Chipper operation - by MVFD, RRR staff or other trained approved personnel to assist with site prep for planting	\$0.00	\$3,000.00	\$0.00	2021
Utah Division of Forestry, Fire & State Lands (FFSL)		Matching funds are from CatFire project West Slope Phase II, this is funding work done at Pack Creek Ranch on private land as well as work done on private land on South Mesa. In-kind is for the FFSL chipper for 4 weeks at a rate of \$1500/week.	\$0.00	\$75,000.00	\$20,500.00	2021
United States Forest Service (USFS)			\$0.00	\$12,200.00	\$13,000.00	2021
Bureau of Land Management (BLM)			\$0.00	\$0.00	\$38,500.00	2021
BLM Fuels (Canyon Country)	A089	Mod 3	\$200,000.00	\$0.00	\$0.00	2021

Source	Phase	Description	Amount	Other	In-Kind	Year
National Wild Turkey Federation (NWTF)	S024		\$2,000.00	\$0.00	\$0.00	2021
Safari Club International	S026		\$5,000.00	\$0.00	\$0.00	2021
RMEF banquet funds	S055		\$5,000.00	\$0.00	\$0.00	2021
Habitat Council Account	QHCR		\$20,000.00	\$0.00	\$0.00	2021

Species

Species	"N" Rank	HIG/F Rank
---------	----------	------------

Big Free-tailed Bat N3

Threat	Impact
--------	--------

Inappropriate Fire Frequency and Intensity Low

Big Free-tailed Bat N3

Threat	Impact
--------	--------

Invasive Plant Species – Non-native Medium

Bluehead Sucker N4

Species	"N" Rank	HIG/F Rank
---------	----------	------------

Threat	Impact
--------	--------

Channel Downcutting (indirect, unintentional)

Low

Bluehead Sucker

N4

Threat	Impact
--------	--------

Channelization / Bank Alteration (direct, intentional)

High

Bluehead Sucker

N4

Threat	Impact
--------	--------

Inappropriate Fire Frequency and Intensity

High

Bluehead Sucker

N4

Threat	Impact
--------	--------

Invasive Plant Species – Non-native

Medium

Brown Trout

2

Threat	Impact
--------	--------

Channelization / Bank Alteration (Direct, Intentional)

Low

Elk

2

Species	"N" Rank	HIG/F Rank
---------	----------	------------

Threat	Impact
--------	--------

Inappropriate Fire Frequency and Intensity

High

Elk

2

Threat	Impact
--------	--------

Invasive Plant Species – Non-native

Low

Flannelmouth Sucker

N3

Threat	Impact
--------	--------

Channel Downcutting (indirect, unintentional)

Low

Flannelmouth Sucker

N3

Threat	Impact
--------	--------

Channelization / Bank Alteration (direct, intentional)

High

Flannelmouth Sucker

N3

Threat	Impact
--------	--------

Inappropriate Fire Frequency and Intensity

High

Flannelmouth Sucker

N3

Species	"N" Rank	HIG/F Rank
---------	----------	------------

Threat	Impact
--------	--------

Invasive Plant Species – Non-native

Medium

Golden Eagle

N5

Threat	Impact
--------	--------

Inappropriate Fire Frequency and Intensity

Medium

Golden Eagle

N5

Threat	Impact
--------	--------

Invasive Plant Species – Non-native

Medium

Wild Turkey

1

Threat	Impact
--------	--------

Inappropriate Fire Frequency and Intensity

Medium

Mule Deer

1

Threat	Impact
--------	--------

Inappropriate Fire Frequency and Intensity

High

Mule Deer

1

Species	"N" Rank	HIG/F Rank
---------	----------	------------

Threat	Impact
--------	--------

Invasive Plant Species – Non-native

High

Roundtail Chub N3

Threat	Impact
--------	--------

Channel Downcutting (indirect, unintentional)

Low

Roundtail Chub N3

Threat	Impact
--------	--------

Channelization / Bank Alteration (direct, intentional)

High

Roundtail Chub N3

Threat	Impact
--------	--------

Inappropriate Fire Frequency and Intensity

High

Roundtail Chub N3

Threat	Impact
--------	--------

Invasive Plant Species – Non-native

Medium

Southwestern Willow Flycatcher N1

Species	"N" Rank	HIG/F Rank
---------	----------	------------

Threat	Impact
--------	--------

Channelization / Bank Alteration (direct, intentional)

Medium

Southwestern Willow Flycatcher

N1

Threat	Impact
--------	--------

Inappropriate Fire Frequency and Intensity

Medium

Southwestern Willow Flycatcher

N1

Threat	Impact
--------	--------

Invasive Plant Species – Non-native

High

Townsend's Big-eared Bat

N3

Threat	Impact
--------	--------

Not Listed

NA

Yellow-billed Cuckoo

N3

Threat	Impact
--------	--------

Channel Downcutting (indirect, unintentional)

High

Yellow-billed Cuckoo

N3

Species	"N" Rank	HIG/F Rank
---------	----------	------------

Threat	Impact
--------	--------

Habitat Shifting and Alteration

Medium

Yellow-billed Cuckoo

N3

Threat	Impact
--------	--------

Inappropriate Fire Frequency and Intensity

Medium

Habitats

Habitat

Aquatic-Forested

Threat	Impact
--------	--------

Channel Downcutting (indirect, unintentional)

High

Aquatic-Forested

Threat	Impact
--------	--------

Invasive Plant Species – Non-native

Medium

Aquatic-Scrub/Shrub

Threat	Impact
--------	--------

Channel Downcutting (indirect, unintentional)

High

Habitat

Aquatic-Scrub/Shrub

Threat	Impact
--------	--------

Fire and Fire Suppression

Medium

Gambel Oak

Threat	Impact
--------	--------

Inappropriate Fire Frequency and Intensity

High

Mountain Sagebrush

Threat	Impact
--------	--------

Inappropriate Fire Frequency and Intensity

Medium

Mountain Sagebrush

Threat	Impact
--------	--------

Problematic Plant Species – Native Upland

Very High

Riverine

Threat	Impact
--------	--------

Channel Downcutting (indirect, unintentional)

High

Riverine

Habitat

Threat	Impact
--------	--------

Channelization / Bank Alteration (direct, intentional)	High
--	------

Project Comments

Comment 01/14/2020 Type: 1 Commenter: Jimi Gragg

Wow. Go big or go home, huh? Ha ha. Love it. Anyway, I thought you could add to the Mtn Sage threats list, Problematic Species - Native Plants (i.e. juniper). I think it's got a H or VH rating.

Comment 01/14/2020 Type: 1 Commenter: Nicole Nielson

Good catch thanks Jimi.

Comment 01/21/2020 Type: 1 Commenter: Clint Wirick

Nice big collaboration. Thanks for the photos in the database. Good looking seed mixes. Thanks for adding language and plans about most of the species in the species list. I think that is important.

Comment 01/21/2020 Type: 1 Commenter: Charles Fischer

Thanks Clint!

Comment 01/22/2020 Type: 1 Commenter: Danny Summers

Seed mixes look good, but sand dropseed rates could be lowered to 0.1 lbs/ac. See the number of seed/sq ft.

Comment 01/23/2020 Type: 1 Commenter: Ann Marie Aubry

BLM seed mix is adjusted as recommended. Thanks!

Comment 01/27/2020 Type: 1 Commenter: Kara Dohrenwend

Danny, thanks for your comments. As with the Colorado River project we have some areas in lower Mill Creek with very high kochia and cheatgrass pressure. I have found that often seeding hard to get established in these areas. The high SPCR seeds/sq ft is an effort to get more seeds per square foot on the ground of natives that kochia. Do you have a suggestion for sites with a high kochia pressure? I can amend the #/acre but I am concerned that we may get nothing coming up unless we can get some patches of even just sand dropseed established. I definitely welcome suggestions

Comment 01/27/2020 Type: 1 Commenter: Danny Summers

It is understandable to increase the rates for that reason. I don't have any great answers on beating the kochia.

Comment 02/11/2020 Type: 1 Commenter: Robbie Wood

the project refers to The Grand County Weed Dept having something known as a prepared Invasive Species Control Plan. i've worked for the weed dept for 1.5 years and have not seen such a plan.

Completion

Start Date:

End Date:

FY Implemented:

Final Methods:

Project Narrative:

Future Management:

Map Features

ID	Feature Category	Action	Treatment/Type
870	Fence	Construction	Barbed wire
8726	Terrestrial Treatment Area	Vegetation removal / hand crew	Lop-pile-burn

ID	Feature Category	Action	Treatment/Type
8835	Terrestrial Treatment Area	Vegetation removal / hand crew	Lop and chip
8836	Terrestrial Treatment Area	Vegetation removal / hand crew	Lop-pile-burn
8837	Terrestrial Treatment Area	Vegetation removal / hand crew	Lop and scatter
8838	Terrestrial Treatment Area	Vegetation removal / hand crew	Lop and chip
8880	Aquatic/Riparian Treatment Area	Herbicide application	Spot treatment
8881	Aquatic/Riparian Treatment Area	Herbicide application	Spot treatment
8882	Aquatic/Riparian Treatment Area	Herbicide application	Spot treatment
8883	Aquatic/Riparian Treatment Area	Herbicide application	Spot treatment
8884	Aquatic/Riparian Treatment Area	Herbicide application	Spot treatment
8885	Aquatic/Riparian Treatment Area	Herbicide application	Spot treatment
8887	Terrestrial Treatment Area	Road decommissioning	Road decommissioning
8908	Terrestrial Treatment Area	Herbicide application	Spot treatment
8908	Terrestrial Treatment Area	Vegetation removal / hand crew	Cut Stump
8911	Aquatic/Riparian Treatment Area	Herbicide application	Spot treatment

ID	Feature Category	Action	Treatment/Type
8911	Aquatic/Riparian Treatment Area	Vegetation Improvements	Manual removal / hand crew
8911	Aquatic/Riparian Treatment Area	Vegetation Improvements	Seeding
8911	Aquatic/Riparian Treatment Area	Vegetation Improvements	Seedlings
8911	Aquatic/Riparian Treatment Area	Vegetation Improvements	Water stinger
8912	Aquatic/Riparian Treatment Area	Herbicide application	Spot treatment
8912	Aquatic/Riparian Treatment Area	Vegetation Improvements	Mechanical removal
8912	Aquatic/Riparian Treatment Area	Vegetation Improvements	Seeding
8912	Aquatic/Riparian Treatment Area	Vegetation Improvements	Seedlings
8912	Aquatic/Riparian Treatment Area	Vegetation Improvements	Water stinger
8913	Aquatic/Riparian Treatment Area	Herbicide application	Spot treatment
8913	Aquatic/Riparian Treatment Area	Vegetation Improvements	Mechanical removal
8913	Aquatic/Riparian Treatment Area	Vegetation Improvements	Seeding
8913	Aquatic/Riparian Treatment Area	Vegetation Improvements	Seedlings
8913	Aquatic/Riparian Treatment Area	Vegetation Improvements	Water stinger

ID	Feature Category	Action	Treatment/Type
8914	Aquatic/Riparian Treatment Area	Herbicide application	Spot treatment
8914	Aquatic/Riparian Treatment Area	Vegetation Improvements	Manual removal / hand crew
8914	Aquatic/Riparian Treatment Area	Vegetation Improvements	Seeding
8914	Aquatic/Riparian Treatment Area	Vegetation Improvements	Seedlings
8914	Aquatic/Riparian Treatment Area	Vegetation Improvements	Water stinger
8915	Aquatic/Riparian Treatment Area	Herbicide application	Spot treatment
8915	Aquatic/Riparian Treatment Area	Vegetation Improvements	Manual removal / hand crew
8915	Aquatic/Riparian Treatment Area	Vegetation Improvements	Seeding
8915	Aquatic/Riparian Treatment Area	Vegetation Improvements	Seedlings
8915	Aquatic/Riparian Treatment Area	Vegetation Improvements	Water stinger
8916	Aquatic/Riparian Treatment Area	Herbicide application	Spot treatment
8916	Aquatic/Riparian Treatment Area	Vegetation Improvements	Seedlings
8916	Aquatic/Riparian Treatment Area	Vegetation Improvements	Water stinger
8917	Aquatic/Riparian Treatment Area	Herbicide application	Spot treatment

ID	Feature Category	Action	Treatment/Type
8917	Aquatic/Riparian Treatment Area	Vegetation Improvements	Manual removal / hand crew
8917	Aquatic/Riparian Treatment Area	Vegetation Improvements	Seedlings
8917	Aquatic/Riparian Treatment Area	Vegetation Improvements	Water stinger
8918	Aquatic/Riparian Treatment Area	Herbicide application	Spot treatment
8918	Aquatic/Riparian Treatment Area	Vegetation Improvements	Manual removal / hand crew
8918	Aquatic/Riparian Treatment Area	Vegetation Improvements	Seeding
8918	Aquatic/Riparian Treatment Area	Vegetation Improvements	Seedlings
8918	Aquatic/Riparian Treatment Area	Vegetation Improvements	Water stinger
8919	Aquatic/Riparian Treatment Area	Herbicide application	Spot treatment
8919	Aquatic/Riparian Treatment Area	Vegetation Improvements	Manual removal / hand crew
8919	Aquatic/Riparian Treatment Area	Vegetation Improvements	Seedlings
8919	Aquatic/Riparian Treatment Area	Vegetation Improvements	Water stinger
8920	Aquatic/Riparian Treatment Area	Herbicide application	Spot treatment
8920	Aquatic/Riparian Treatment Area	Vegetation Improvements	Manual removal / hand crew

ID	Feature Category	Action	Treatment/Type
8920	Aquatic/Riparian Treatment Area	Vegetation Improvements	Seeding
8920	Aquatic/Riparian Treatment Area	Vegetation Improvements	Seedlings
8920	Aquatic/Riparian Treatment Area	Vegetation Improvements	Water stinger
8921	Aquatic/Riparian Treatment Area	Herbicide application	Spot treatment
8921	Aquatic/Riparian Treatment Area	Vegetation Improvements	Manual removal / hand crew
8979	Aquatic/Riparian Treatment Area	Vegetation Improvements	Manual removal / hand crew
8980	Aquatic/Riparian Treatment Area	Vegetation Improvements	Manual removal / hand crew

Project Map

 Project Map

