Natural Resource Restoration Plan for the Bonita Peak Mining District

Draft

Source: https://www.epa.gov/bpmd/site-photos

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Prepared by:

Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, CO 80246

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1. Introduction

The State of Colorado resolved natural resource damages claims with certain potentially responsible parties under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) for hazardous substance releases in the Bonita Peak Mining District Superfund Site (BPMD, or the Site), including the August 2015 releases from Gold King Mine. Compensation (damages) under CERCLA must be used to restore natural resources that were harmed as a result of the releases.

The Governor of the State of Colorado has designated the following Trustees to act on behalf of the public in protecting the natural resources of the State: the Attorney General of the State of Colorado; the Executive Director of the Colorado Department of Public Health and Environment (CDPHE); and the Executive Director of the Colorado Department of Natural Resources (DNR). These three Trustees are responsible for bringing natural resource damage claims and subsequently funding natural resource restoration within the State of Colorado.

The Trustees received and evaluated alternatives designed to restore the resources that are likely to have been injured as a result of hazardous substance releases from the BPMD. This Draft Restoration Plan (RP) presents the restoration alternatives and describes the preferred alternatives. It also provides information to the public regarding the BPMD, the likely injuries to natural resources at the Site, and why the preferred restoration actions that the Trustees are proposing will compensate for those injuries.

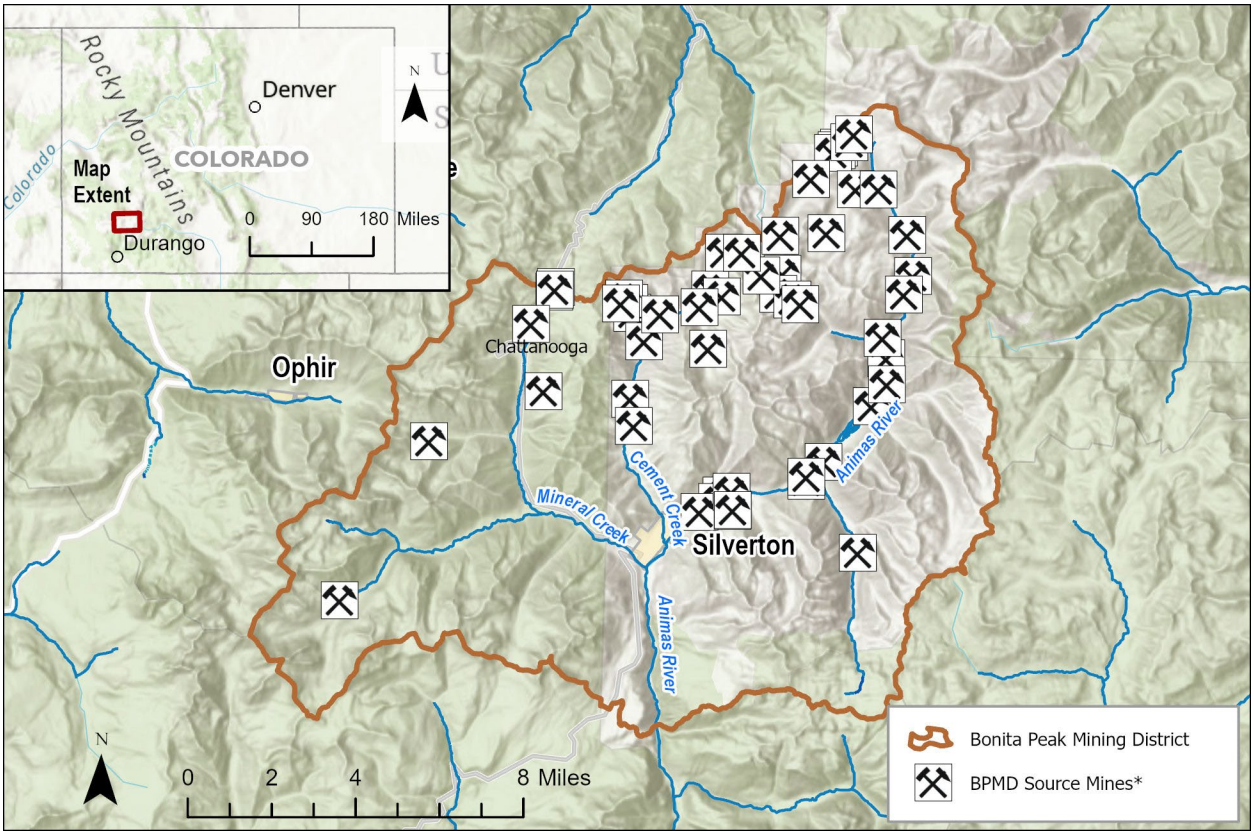
1.1 Background

The BPMD is in southwestern Colorado in San Juan County (Figure 1). Mineral Creek and Cement Creek flow through the Site and into the Animas River in Silverton, Colorado. Historic mining operations contaminated soil, groundwater and surface water with heavy metals (EPA, 2019). In April 2016, the BPMD Superfund Site was added to the National Priorities List (NPL). The BPMD Superfund Site consists of 48 historic mines or mining-related sources, including tailings, waste rock, and hard rock mines (EPA, 2019).

The historical mining, mineral milling, and natural geologic conditions at the site resulted in low pH and high concentrations of dissolved metals that have negatively impacted and degraded water quality and aquatic life in the Upper Animas River watershed (EPA, 2019). Natural resources including soils, sediment, surface water and groundwater have been impacted by the release of metals from the Site (EPA, 2019; CDPHE, 2024; EPA, 2024).

Historic releases from mine source areas have injured natural resources for over a century. In addition the Gold King Mine release on August 5, 2015, impacted recreational, agricultural and other uses of the upper Animas River for a short period of time after the release (CDPHE, 2024). The release prompted the U.S. Environmental Protection Agency (EPA) to add the entire BPMD, including the Gold King Mine, to the NPL.

Figure 1. Bonita Peak Mining District including source mines identified by EPA.



*BPMD source mine data layer from U.S. EPA, 2021.
Available: https://www.arcgis.com/home/item.html?id=4ea77c046d8b4611a25eb5939ee62cf8.

The EPA, in conjunction with the State of Colorado, implemented interim remedial actions at 23 source areas within the BPMD to quickly address contaminant issues in the area (EPA, 2024). Additionally, there is an ongoing remedial investigation to inform the development of a full cleanup plan for Site (EPA, 2024).

Acting through the Natural Resource Trustees, the State of Colorado resolved four natural resource damage claims pursuant to CERCLA. The settlements provided the State with approximately $7 million to restore natural resources and services that were injured due to the release of hazardous substances from the BPMD Superfund Site. Specifically, the State settled claims with: the Standard Metals Corporation and its insurers from 2009 - 2011 for $415,368 - half of which is allocated to BPMD; the Blue Tee Corporation in 2018 for $468,803.70; the Sunnyside Gold Corporation in 2021 for $1.6 million; and the United States, through the Department of Justice, in 2023 for $5 million (CDPHE, 2024). These funds are included in the BPMD Natural Resources Damages Trust Fund, a segregated custodial account within the state treasury that holds settlement money from lawsuits over environmental damages. The funds from these settlements will be used to restore, replace, rehabilitate, or acquire natural resources that have been injured as a result the release of hazardous substances from the BPMD (CDPHE, 2024).

This Draft RP, prepared pursuant to Section 107(f) of CERCLA, and the U.S. Department of the Interior (DOI) natural resource damage assessment (NRDA) regulations at 43 CFR Part 11, describes how the Trustees propose to allocate $3.5 million from the BPMD Natural Resource Damages Trust Fund to restore natural resources and lost services resulting from the release of hazardous substances from the BPMD. The remaining funds will be allocated at a future date after the completion of remediation at the BPMD Superfund Site (CDPHE, 2024).

1.2 Purpose and Need for Restoration

Historical mining, mineral milling, and natural geologic conditions have resulted in impacts and degradation to natural resources in the Upper Animas River watershed (U.S. EPA, 2015, 2016). The long history of mining activities and metals and other contaminant releases in the BPMD have resulted in injuries to natural resources and a loss of services provided by those natural resources. Additionally, as noted previously, the Gold King Mine release impacted recreational, agricultural and other uses of the upper Animas River for a short period of time after the release (CDPHE, 2024).

Elevated concentrations of metals have been found in soils, surface water, groundwater, sediment, vegetation, and biota at the Site (U.S. EPA, 2015, 2016). Hazardous substances found in Site sediments were at levels that cause adverse effects to benthic macroinvertebrates; benthic macroinvertebrate communities are impaired in most sections of the Animas River, Cement Creek and Mineral Creek (U.S. EPA, 2015, 2016). Concentrations of hazardous substances in the surface water of the Animas River are at levels that are toxic to trout (U.S. EPA, 2015, 2016). Additionally, periodic water restrictions and river closures from hazardous substance releases (CDPHE, 2016) have resulted in recreational losses.

After the State of Colorado resolved the natural resource damages claims for $7 million, representatives from the State's three Trustee agencies (Attorney General's Office, CDPHE, and DNR) evaluated multiple proposed alternatives to compensate for injuries resulting from the release of hazardous substances from the BPMD. The projects were evaluated using criteria in the U.S. Department of the Interior's NRDA regulations, 43 CFR Part 11, and the State's guidance published in *NRD Guidance - Colorado Natural Resource Damages Restoration Project Selection Process and Administration of the Colorado Recovery Fund* (CO Attorney General, 2022). Guidance for restoration planning was included in the *Bonita Peak Mining District Superfund Site Natural Resource Damages Assessment and Restoration Solicitation for Project Proposals (Rev 1)* (CDPHE, 2024). This Draft RP presents the Trustees' evaluation and identifies the Trustees' proposed preferred restoration alternatives to compensate the public for injuries and service losses resulting from releases of hazardous substances from the BPMD.

1.3 Restoration Goals

The Trustees are seeking restoration projects that restore, rehabilitate, protect, or enhance areas that are related to, proximal to, or have an ecological nexus to the natural resources and related

services injured as a result of hazardous substance releases from the BPMD. The restoration alternatives presented in this Draft RP all meet this initial goal. In addition, the Trustees have given preference to alternatives that included restoration, rehabilitation, protection or enhancement of aquatic or riparian habitat, upland terrestrial habitat, or water quality, as well as to alternatives that include enhancement of ecosystem services such as recreational uses (hiking, fishing, bird watching), consumptive uses (irrigation or municipal use), or non-active uses such as preservation for future generations (CDPHE, 2024).

1.4 Trustee Responsibility and Authority

As noted previously, the Trustees are the Attorney General of the State of Colorado, the Executive Director of the CDPHE, and the Executive Director of the Colorado DNR. The CDPHE Trustee representative is charged with and performs the administrative and expenditure responsibilities on behalf of the Trustees. The Trustees prepared this Draft RP pursuant to Section 107(f) of CERCLA and the DOI NRDA regulations at 43 CFR Part 11. Consistent with these laws, regulations, and guidance, this Draft RP describes how the Trustees intend to use the funds obtained through the resolution of claims for the natural resource damages for the restoration of natural resources and services injured by the release of hazardous substances.

1.5 Public Participation

The restoration planning process provides the public with an opportunity to comment on the restoration projects before the Trustees approve or award any funds. This Section describes the public involvement in the BPMD Natural Resource Damages (NRD) claims restoration planning process.

1.5.1 Summary of Public Involvement

On March 18, 2024, CDPHE announced the restoration planning process to the public by releasing a solicitation for project proposals (SPP) which was then updated on August 19, 2024 (CDPHE, 2024). The SPP was posted on CDPHE's BPMD restoration webpage: https://cdphe.colorado.gov/hm/bonita-peak-mining-district-restoration.

The SPP announced the availability of funds from the BPMD NRD Trust Fund, invited the public to submit restoration project proposals, discussed eligibility requirements, and described the evaluation process and criteria that the Trustees would be using to evaluate the proposals that were submitted. The SPP also noted that funds obtained through this process cannot be used for planning and administrative purposes or for responsibilities assumed under other regulatory programs, such as reimbursements or repayments of pre-existing obligations.

CDPHE hosted a virtual webinar for the public on March 20, 2024. During this webinar, CDPHE provided an overview of the BPMD NRD restoration planning process including a description of the settlement funds, general background on the NRD claims process, specific requirements and

the process required to obtain the funding described in the SPP, and general timelines associated with solicitation. A recording of the meeting can be found here: March 20, 2024 meeting.

Project proposals were due via email by May 31, 2025. The Trustees received five project proposals in response to the SPP. To determine if the five projects were eligible for funding and thus eligible to move forward though the evaluation process, the Trustees evaluated each of the five proposals against the Screening Criteria described in the SPP. All five projects passed the screening and were further evaluated in this Draft RP (see Section 3).

In July 2025, CDPHE posted the five proposals for public review on CDPHE's BPMD restoration webpage (see following section). Summaries of all comments received by the Trustees and the Trustees' responses to comments are included in Section 6.

1.5.2 Public Notification

Under CERCLA, the Trustees must notify the public of the availability of the Draft RP. The Trustees published a notice of the availability of the Draft Restoration Plan on CDPHE's BPMD restoration webpage: https://cdphe.colorado.gov/hm/bonita-peak-mining-district-restoration.

The 30-day public comment period on this Draft RP commences on January 7, 2026 and ends on February 6, 2026. The Trustees will review and consider all comments received on the Draft RP prior to issuing the Final RP.

2. Restoration Evaluation Factors

The Trustees determined the number of projects and the proposed level of funding for the preferred alternatives based on how well the proposals met the evaluation criteria presented in the SPP and in this section. The criteria were split into Screening Criteria (Section 2.1) and Ranking Criteria (Section 2.2). The Screening and Ranking Criteria are consistent with CERCLA NRDA regulations presented in 43 CFR § 11.82, "factors to consider when selecting the alternative to pursue."

2.1 Screening Criteria

The Trustees relied on the following Screening Criteria to ensure that proposed projects were eligible for NRD funding. Proposed projects that passed all the Screening Criteria were further evaluated for selection using the Ranking Criteria. The Screening Criteria were provided in the SPP (CDPHE, 2024) and are listed here:

- **Compliance with the SPP requirements**: The project proposal must comply with the requirements of the SPP (CDPHE, 2024).
- **Compliance with laws**: The project must comply with all applicable federal, state, and local laws, rules, regulations, and permits.

- **Public health and safety**: The project cannot pose a threat to the health and safety of the public.
- **Eligibility for NRD Funding**: The Trustees will focus on the connection or "nexus" between the natural resources that the proposed project(s) would restore, replace, or acquire the equivalent of the natural resources and/or services injured by the historical releases from the Site.

2.2 Evaluation Criteria Utilized by the Trustees to Select the Preferred Alternatives

The Trustees developed the following eleven Ranking Criteria to evaluate the proposed projects that passed all the Screening Criteria. Projects received a rank between low to high for each criterion depending on how well the proposal addressed the criterion. Projects submitted met all Screening Criteria and received a medium-low rank or higher for at least nine criteria of the Ranking Criteria. The Ranking Criteria were provided in the SPP (CDPHE, 2024) and are listed here:

- **Likelihood of Success:** The level of expected return of natural resources and natural resource services. Proposed project restoration goals should be clear and measurable. The proposal should describe the capability of individuals or organizations expected to implement the project, and their ability to correct any problems that arise during the course of the proposed project. The project must also be technically feasible and procedurally sound.
- **Multiple Natural Resource Benefits:** The extent to which a proposed project benefits more than one natural resource or natural resource service.
- **Project Utilizes Multiple Approaches:** Considers how many restoration approaches are utilized by the project – i.e. restoration, rehabilitation, replacement, and acquisition.
- **Long-term Project Benefits:** The expected sustainability and duration of benefits from the proposed project. Long-term benefits are the objective. Proposed projects are expected to provide long-term sustainable benefits.
- **Project Alignment with Regional Planning:** Proposals should be aligned with existing land and resource management plans such that they can be incorporated into a holistic land and natural resource management plan.
- **Protection of Implemented Project:** Considers the opportunities to protect the implemented project and the resulting benefits over time. Project proposals involving fee title acquisition of property for open space should identify the fee title owner and include a commitment to grant a conservation easement or other mechanism allowing the Trustees to ensure that the acquisition provides continued natural resource benefits. If a

conservation easement is proposed, the project proponent must identify the easement holder and provide a draft of the conservation easement prior to closing on the easement. Project proposals that afford long-term protection will be given preference.

- **Project Benefit Versus Expected Cost:** Considers the time it takes for benefits to be provided to the target ecosystem or public, versus the expected costs of the project.
- **Non-NRDs Match:** A minimum of 50% match of the total amount of requested NRD funds is preferred. Match may consist of cash from non-NRD sources or in-kind services. Some degree of cash match is preferable. Points will be awarded based on the percentage of the cash match. For example, if a proponent asks the Trustees for $1,000,000 for a project, it should provide a match of $500,000. The match must be described in the proponent's proposal. At least half of the match should be for NRD-related work (e.g., construction type work that directly supports the project and is the same type of work that was funded by the Trustees) and the other half may be "non-NRD match" (e.g., work that complements the project, such as project planning or design). Matching funds do not need to be secured prior to the Trustees' award.
- **Multiple Partners:** Considers the number of partners contributing funds or services, as well as the degree to which these partners collaborate with the project proponents on planning and implementing the project.
- **Monitoring:** Considers the ability to monitor and evaluate the success of the project and to correct any problems that arise during the course of the project.
- **Disproportionally Impacted Community:** Some communities in Colorado have an increased risk of exposure to human health and environmental harms. This criterion evaluates the level of burden in communities affected by the proposed project, using CDPHE's online EnviroScreen tool. The EnviroScreen tool provides a burden score ranging from 0 (no disproportionately affected community members) to 100 (entirely disproportionately affected community members). The higher the burden numbers, the higher the scoring on this criterion. See https://cdphe.colorado.gov/enviroscreen.

3. Restoration Alternatives

The Trustees evaluated all the restoration alternatives submitted in response to the SPP as well as a no-action alternative. The alternatives consist of a group of five restoration projects intended to compensate for injuries to natural resources and associated service losses resulting from mining activities in the BPMD. This section presents a summary of the preferred alternatives, a description and evaluation of the no-action alternative, and a description and evaluation of the preferred alternatives.

A summary of the five preferred alternatives is presented in Table 1. All of these preferred alternatives are located in the Animas River watershed (Figure 2), meet all the Screening Criteria described in Section 2.1, and were further considered and evaluated by the Trustees using the Evaluation Criteria described in Section 2.2. In subsequent sections, we provide a detailed evaluation of each alternative.

Table 1. Proposed preferred restoration alternatives and requested funding for the BPMD.

Alternative	Submittal Agency	Title	Amount
A	Colorado Parks and Wildlife	Fish Hatchery Water Treatment	$350,000
B	Mountain Studies Institute	Upper Aminas Wetland and Stream Restoration	$364,210
C	San Juan County	San Juan County & Town of Silverton Animas River Preservation and Access Project	$150,000
D	San Juan Resource Conservation and Development Council	Animas River Valley Bank Stabilization	$900,000
E	Town of Silverton	Animas River Corridor Project Proposal	$1,720,000
		Total Requested for 2025 Project Submittal	**$3,484,210**

3.1 No Action – Natural Recovery Alternative

The Trustees considered a No Action – Natural Recovery Alternative which is required to be considered under CERCLA NRDA regulations (43 CFR § 11.82(c)(2)). The selection of this alternative means that the Trustees would take no action to restore injured natural resources and the services they provide. Taking no action would mean that natural resource losses would continue to occur, and any further restoration of natural resources and services injured by releases from the BPMD would only occur though natural recovery. While some natural resources and services may improve to baseline conditions over time, the public would not be compensated for losses that occurred in time between the release of hazardous substances and the return to baseline conditions.

The No Action – Natural Recovery Alternative would not use the available NRD settlement funds for restoration mandated under CERCLA and therefore does not meet the minimum standards for acceptability in the Screening Criteria (Section 2.1; Table 2). It is not a preferred alternative by the Trustees. The No Action – Natural Recovery Alternative is not further evaluated in this Draft RP.

Figure 2. Location of preferred alternatives. Alternative C is not included on the map but is located within the river corridors in San Juan County.

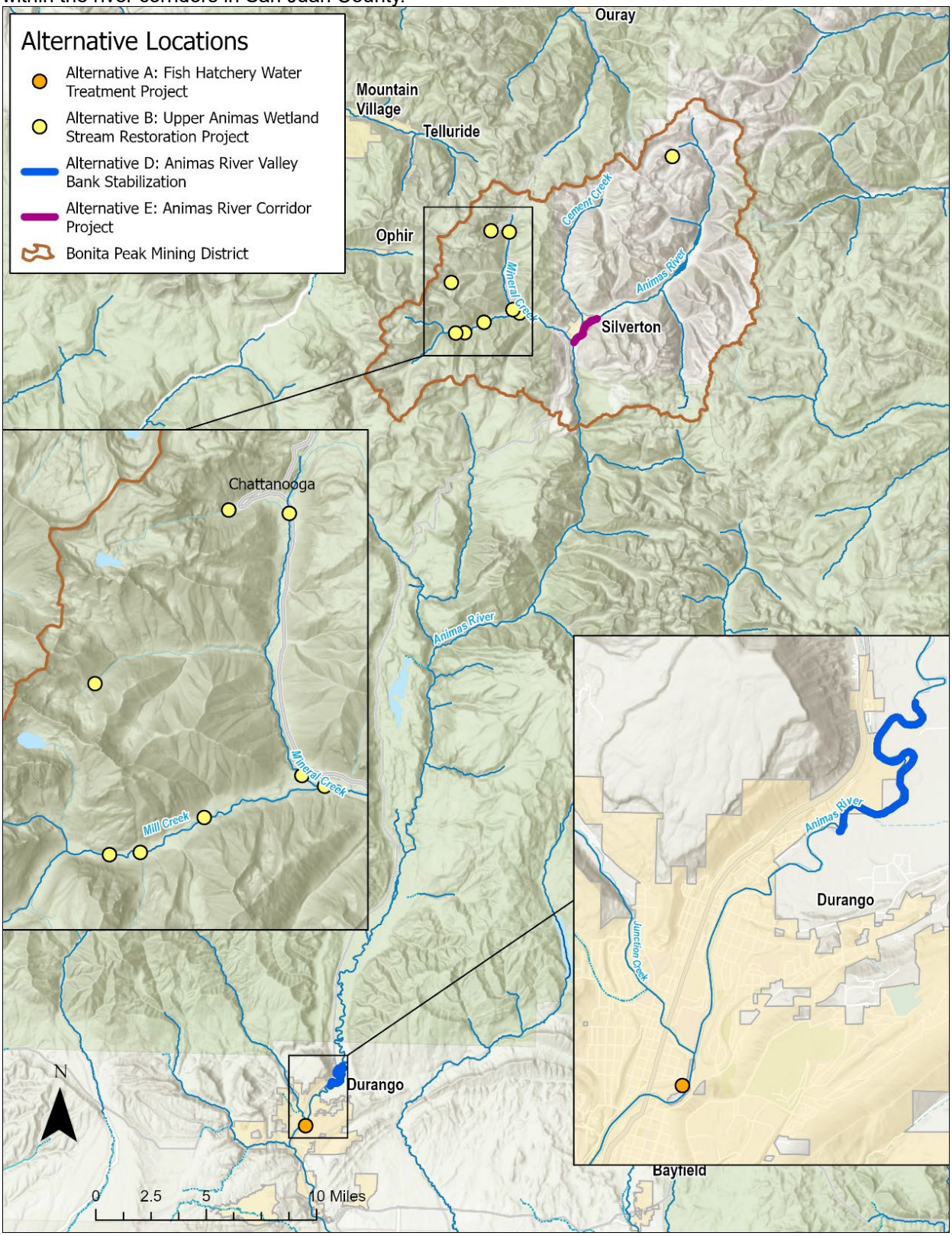


Table 2. Evaluation of No Action – Natural Recovery Alternative.

Evaluation Criteria	Narrative Evaluation	Ranking
Compliance with the SPP requirements	No proposal was submitted.	Not applicable
Compliance with laws	The No Action-Natural Recovery Alternative would not use settlement funds for restoration and thus would not comply with CERCLA NRDA regulations.	Does not pass
Public health and safety	No actions would be implemented.	Not applicable
Eligibility for NRDA Funds	The No Action-Natural Recovery Alternative would not compensate the public for interim losses.	Does not pass

3.2 Alternative A: Fish Hatchery Water Treatment Project

Alternative A is a project proposed by Colorado Parks and Wildlife (CPW) to rebuild the water treatment system at the Durango State Fish Hatchery located in Durango, Colorado along the Animas River (see Figure 2). The goal of this project is to help restore native fish to the Animas River Basin through improved stocking.

3.2.1 Project Description

The Durango State Fish Hatchery, which has been in operation since 1903, raises and stocks rainbow trout, brown trout, Colorado River cutthroat trout (native fish of Colorado), and kokanee salmon in the Animas River Basin, the San Juan River Basin, the Dolores River Basin, and elsewhere in the southwest corner of the state. Along with stocking, the hatchery also provides Colorado River cutthroat trout and kokanee salmon eggs to other hatcheries in the state for rearing and stocking.

The Durango State Fish Hatchery operates by collecting and treating water from spring seeps around the hatchery and near Junction Creek for use in the fish rearing process. The water filtration system that treats the water has aged and needs to be replaced, as the nitrogen and carbon dioxide concentrations at the hatchery are too high and cause adverse effects to the fish health at the hatchery. The proposed project would rebuild the water treatment system at the Durango State Fish Hatchery, including replacing the aging packed columns that remove carbon dioxide and nitrogen and add oxygen.

Improving the water treatment system would help improve the health and survival of fish being hatched and raised at the hatchery, which would in turn enhance the ability of CPW to support native fish stocking efforts throughout the state. These stocking efforts would improve recreational fishing in all the locations in which fish are stocked, including in the Animas River upstream of Cement Creek and in the South Fork of Mineral Creek. The hatchery also annually stocks Cunningham Creek, which is adjacent to the BPMD and flows into the Animas River upstream of Silverton. Replacing the water treatment system should take between 30 and 60 days to complete.

3.2.2 Project Costs

The amount of funding requested from NRD funds is $350,000, which would cover 67% of the total estimated construction cost of $525,000. CPW has committed $175,000 in NRD-matching funds to cover the remainder of the construction funds as well as $72,000 in non-NRD matching funds to cover project planning, design, and management by State fish hatchery staff. The total cost of the project including construction, planning, design, and management is $597,000.

3.2.3 Trustee Assessment with Evaluation Criteria

The Trustees evaluated this project favorably based on the established Evaluation Criteria:

Likelihood of success: The project ranks high for this criterion. The proposed technique is feasible as a packed column system already exists at the hatchery. CPW has experience with this type of system and is planning to collaborate with InnovaSea System Inc. to help design the new packed columns for the best possible results. The new system would be designed to handle a full range of expected water flows and conditions and would provide a stable, long-term solution to improved water quality for the hatchery.

Project alignment with regional planning: The project ranks medium-high for this criterion. Resource management plans exist in the Animas River basin including the City of Durango, La Plata County, and San Juan County. These plans align with this project as they have goals to maintain, restore, and/or improve habitat, fish and wildlife populations, ecosystem health, ecological processes, biodiversity, and recreation. This project is consistent with these goals, although these plans do not mention this project specifically.

Project utilizes multiple approaches: The project ranks low for this criterion. The improvements to the fish hatchery would improve the stocking of fish into the Animas River Basin via a single approach.

Project benefits: The project ranks high to medium-high for these criteria. The project would benefit multiple resources. The project would improve the water quality of water entering the fish hatchery which would increase the number of fish produced. Through stocking, native fish would be restored to the Animas River Basin improving ecosystem and improving recreational fishing.

The project is expected to provide long-term benefits, as packed column systems such as the one being proposed here are often in service for more than 30 years. The implemented project and the resulting benefits would be protected over time as CPW owns the fish hatchery property and can ensure the long-term maintenance of this project.

The benefits of this project would be realized within a few months after construction is complete (within 2 years of receiving funding). This project would benefit the impacted fisheries by enabling the hatchery to raise healthier fish that will have a better survival rate after stocking,

increasing recreational opportunities. The Durango hatchery stocks 500 catchable rainbow trout in the South Fork of Mineral Creek and 500 catchable rainbow trout in the upper Animas River above Cement Creek annually. Cunningham Creek is annually stocked with 1,000 2-inch Colorado River cutthroat trout, and some of these fish move into the upper Animas River.

The cost of this project is minimal considering the benefits would last for over 30 years. The project can be monitored, and the benefits of the project would be measured and quantified. CPW would undertake long-term monitoring and maintenance of the proposed project. To evaluate the project benefits, CPW would compare fish health, egg condition and stocking prior to project implementation to post project implementation.

Matching funds: The project ranked high for this criterion. It would match approximately 67% of the requested $350,000. CPW would provide a $175,000 cash match for construction costs along with other contributions for project management, project design, and construction management of $72,000.

Multiple partners: The project ranked medium-low for this criterion. The project does not include multiple partners; however, the project does have support from multiple stakeholders.

Disproportionately impacted community: The project ranked medium for this criterion. This project would help restore natural resources in disproportionately impacted communities. The EnviroScreen tool score for the Durango Fish Hatchery is 33.52; however, some communities around and within the City of Durango area have scores up to 60. The Durango Fish Hatchery stocks fish only in public accessible waters in both San Juan and La Plata Counties.

Table 3 provides the narrative evaluation and ranking for each of the Section 2.2 evaluation criteria for Alternative A.

Table 3. Evaluation of Alternative A: Fish Hatchery Water Treatment Project.

Evaluation Criteria	Narrative Evaluation	Ranking
Likelihood of success	The project would replace an existing ageing system using well-known techniques and experts in the field.	High
Project alignment with regional planning	Resource management plans exist that align with this project, but this project is not mentioned specifically.	Medium-High
Project utilizes multiple approaches	The project would focus on rebuilding the water treatment system at the hatchery.	Low
Benefits multiple natural resources	The project would benefit multiple resources including fish, aquatic ecosystem, and recreational fishing.	High
Long-term project benefits	The project would provide long-term benefits for more than 30 years.	Medium-High
Protection of implemented project and benefits	The implemented project and the resulting benefits would be protected over time.	High
Project benefits versus expected cost	The cost of this project is minimal considering the benefits. The benefits of this project would be realized within a few months after construction is complete and would benefit the impacted fisheries for over 30 years.	High

Table 3. Evaluation of Alternative A: Fish Hatchery Water Treatment Project.

Evaluation Criteria	Narrative Evaluation	Ranking
Project can be monitored and benefits can be measured and quantified	CPW would undertake long-term monitoring and compare prior fish health, egg condition and stocking to post implementation of the project.	High
Ability to obtain matching funds	The proponent would match 67% of the requested NRD funds and would provide additional contributions for project management, project design, and construction management.	High
Project involves multiple partners	The project does not include multiple partners; however, the project does have support from multiple stakeholders.	Medium-Low
Project helps restore natural resources in disproportionately impacted community	This project would help restore natural resources in disproportionately impacted communities.	Medium

3.3 Alternative B: Upper Animas Wetland and Stream Restoration Project

Alternative B, proposed by the Mountain Studies Institute (MSI), would focus on wetland, stream, and fen[1] restoration projects at multiple locations in the BPMD and would also improve community access to these lands for recreational use.

3.3.1 Project Description

The proposed project would utilize a combination of Low-Tech Process Based Restoration (LTPBR), earth work, rock work, and revegetation to restore stream reaches, riparian wetlands and fens that have been degraded by mining related activities in the BPMD. For example, roadways built to access mines have restricted rivers into single channel systems that reduce floodplain connectivity, habitat complexity, river sinuosity, and wetland function. These altered systems experience increased erosion that impacts local ecohydrology as well as downstream habitats. In addition, overburden from mining sites has been deposited directly into wetlands and fens, degrading the quality of the habitat and severing its connection to groundwater.

LTPBR would help restore natural water and sediment movement patterns and processes in the project areas. If effective, the benefits achieved through this type of restoration can be self-sustaining over time. Through extensive stakeholder consultations and technical analyses, the following three restoration activities were identified to address these issues in San Juan County (see Figure 2):

- Stream and riparian wetland restoration on Mill and Mineral Creeks near the historic Chattanooga Townsite (Activity 1),

[1] A fen is a type of wetland that forms in low-lying areas where groundwater or surface water maintains saturated soils. Fens are typically fed by mineral-rich water from springs and support a diverse mix of vegetation (USDA, 2014).

- Fen restoration on the Middle Fork of Mineral Creek and in Placer Gulch on Bureau of Land Management (BLM) lands (Activity 2), and
- Riparian wetland restoration in the South Mineral Creek watershed (Activity 3).

Combined, the three proposed activities for this project would restore 10 acres of fens, four acres of riparian wetlands, and just over one mile of stream habitat.

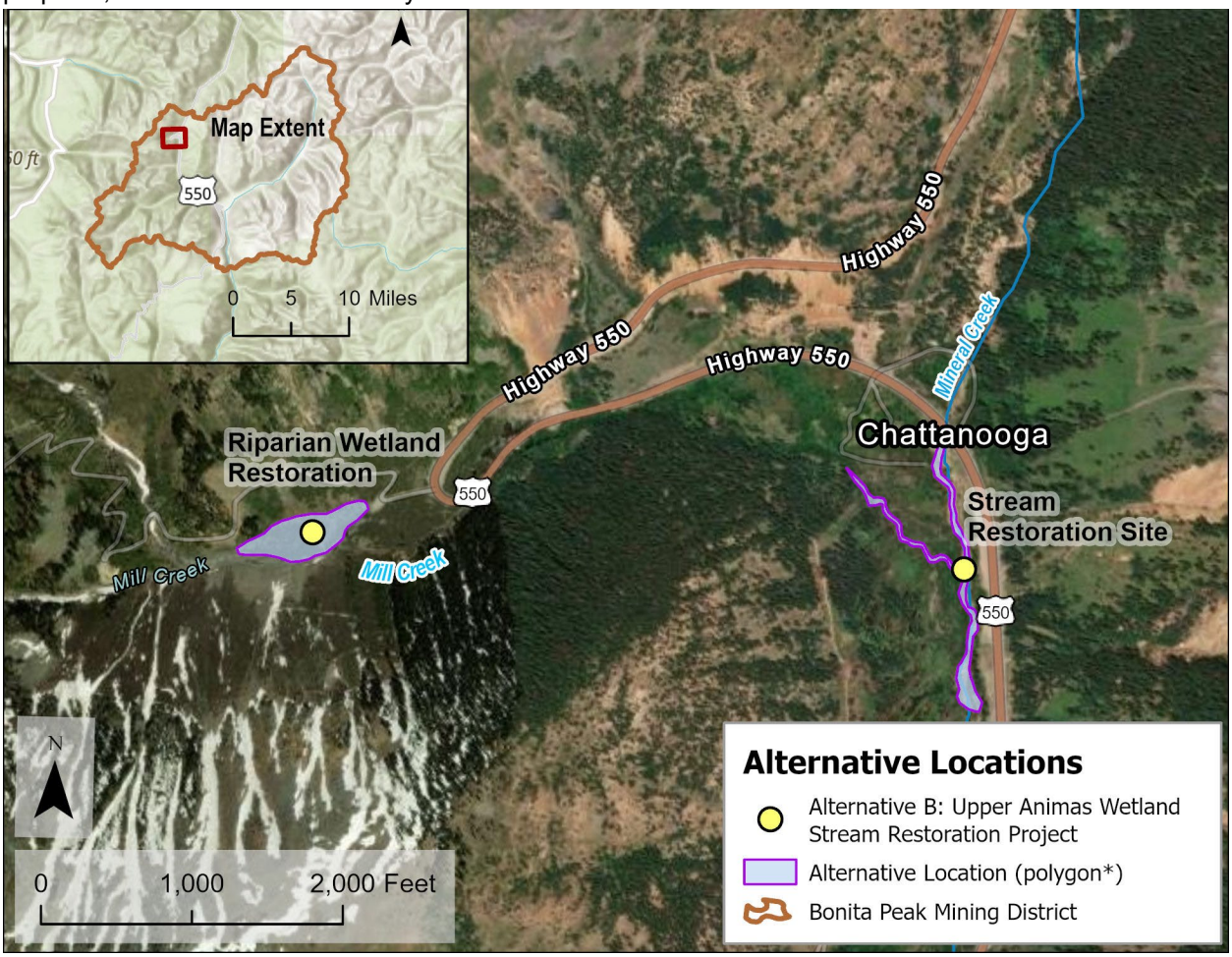
Activity 1: Stream and riparian wetland restoration on Mill and Mineral Creeks

Restoration sites for this restoration activity are located near the junction of Mill and Mineral Creeks and the historic Chattanooga Townsite (Figure 3). The project would include the implementation of rock structures that would help slow water and push water onto the floodplain. This rewatering would restore historic paleochannels which would increase habitat complexity and reconnect the abandoned floodplain to the water table. In the paleochannels, as well as the main stem of Mineral Creek, post-assisted log structures (PALS) would be installed three feet into the ground. The PALS would be a combination of full channel-spanning structures and streambank-attached structures. Re-establishing natural hydrodynamics would take place over time, as channel-spanning PALS encourage aggregation of sediment and a raising of the water table, and bank-attached PALS help increase sinuosity by blowing out cut banks and creating new inset floodplains. Beavers may recolonize restored areas and help sustain and enhance the restoration by creating new lodges and dams that reduce erosion and restore natural hydrodynamics.

The design and permitting phase for this work is estimated to take approximately 9-12 months. This phase includes finalizing the design for the site and securing all necessary permits, which the proponent would support through matching funding. After this initial phase is complete, restoration and associated monitoring (to ensure the project is functioning as expected) would begin and would take approximately nine months to complete. The project would include additional monitoring in years two and three and would implement adjustments as needed based on monitoring results. Maintenance needs after the first three years are expected to be minimal, as the project is designed to re-establish hydrodynamics that are self-sustaining.

Overall, this restoration activity would be completed within three years after the completion of project design and permitting.

Figure 3. Proposed Alternative B stream and riparian wetland restoration sites on Mill and Mineral Creeks. The areas of the Alternative B polygons are approximated from maps included in the submitted proposal; final site delineations may differ.



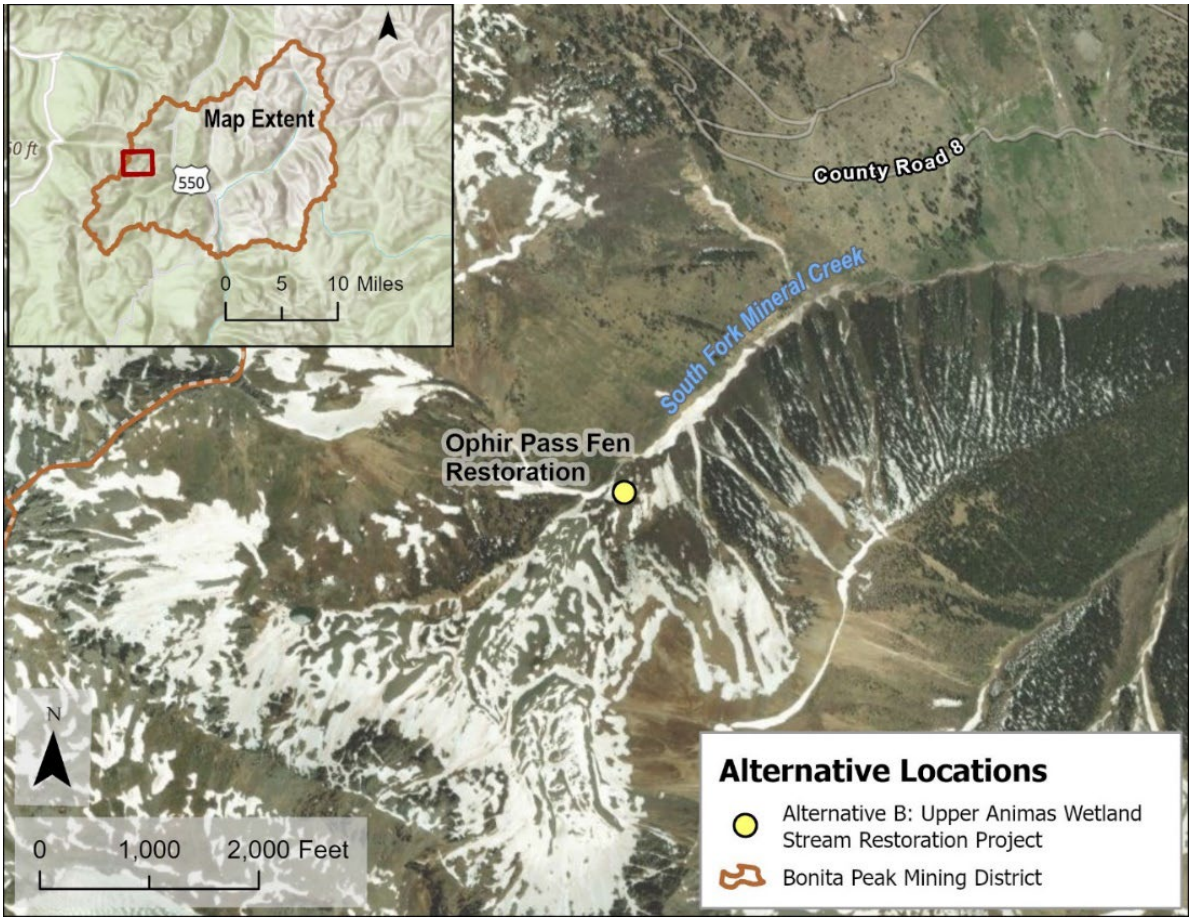
Activity 2: Fen restoration on the Middle Fork of Mineral Creek and in Placer Gulch

This restoration activity includes fen restoration in two locations. One fen location is along the upper reaches of the Middle Fork of Mineral Creek near Ophir Pass, in the San Juan National Forest (Figure 4). The other location is in Placer Gulch, which is in the upper reaches of the Animas River west of the Frisco-Bagley Mill and Tunnel (Figure 5). In each of these locations, overburden deposition has degraded habitat and disconnected the fens from the groundwater table.

At the Ophir Pass location, the proponent would conduct groundwater elevation assessment activities to understand the depth of overburden materials, which would help them understand the amount of overburden material removal necessary to reestablish fen water table connections. Access to the site at Ophir Pass fen is restricted, and therefore only highly targeted excavation would be done using hand tools. At this location, excavation would be paired with the LTPBR

approaches such as beaver mimicry, placement of rock structures, placement of woody debris or PALS would be used as needed. The proponent would also plant or seed native plants to complete the restoration. In areas where the water table is not at the surface, upland islands would be created – a common feature of alpine fens.

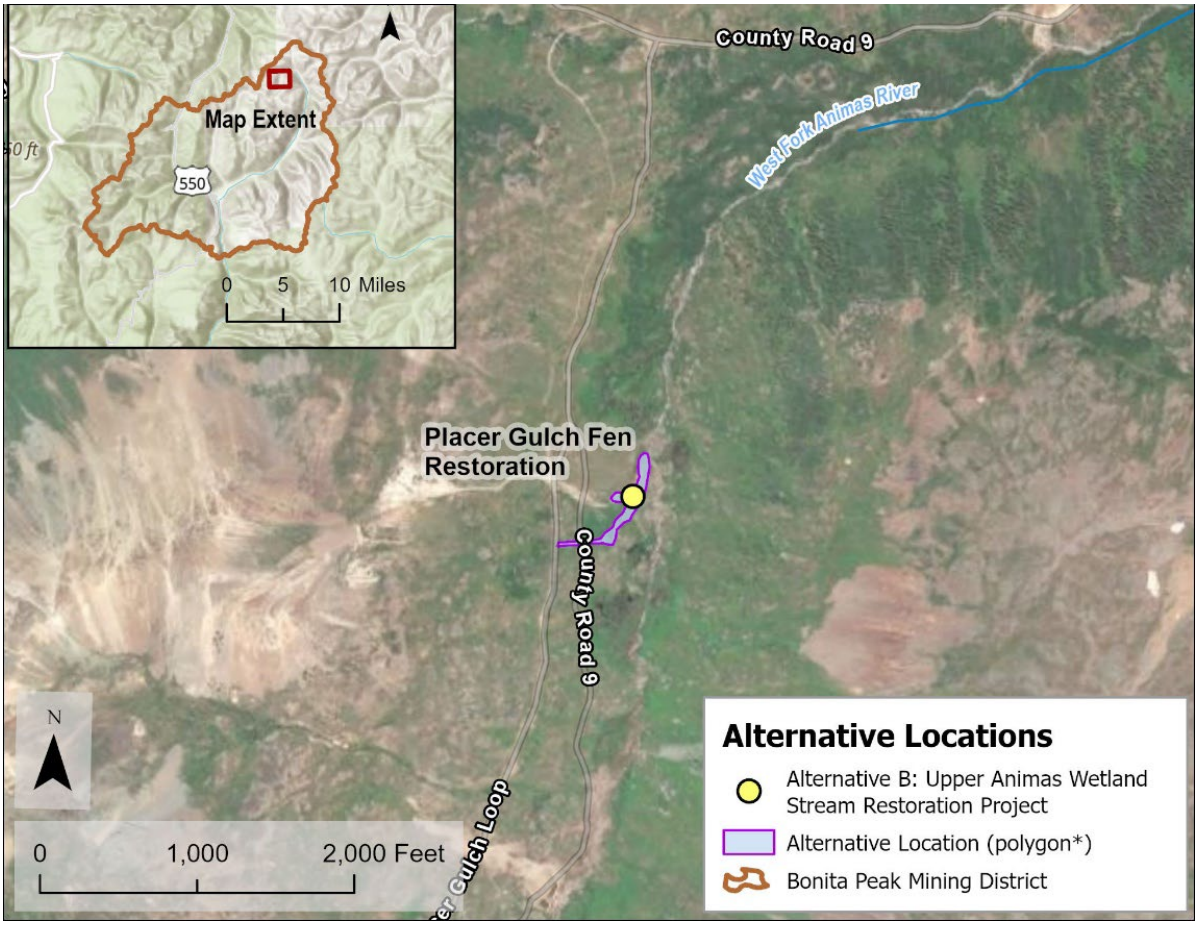
Figure 4. Proposed Ophir Pass fen restoration site.



At the Placer Gulch fen location, after assessing the groundwater elevation, small excavators would be used to remove overburden, and LTPBR approaches such as beaver mimicry, placement of rock structures, placement of woody debris or PALS would be used as needed. As with Ophir Pass, the restoration would include light excavation and be completed with native fen plantings or seeding. All excavated material at these locations would be relocated and used to restore native upland vegetation.

This work would be conducted in partnership with the BLM and the U.S. Forest Service (USFS). The timeline for the restoration activities at both locations are similar. The design and permitting phases are estimated to take between 12 and 15 months. Initial restoration activities are expected to occur over a 9-month period. Monitoring would be conducted in both locations in Year 2 and Year 3. Both fen restoration activities are expected to occur simultaneously if permitting timelines and logistics allow.

Figure 5. Proposed Placer Gulch fen restoration site. The areas of the Alternative B polygons are approximated from maps included in the submitted proposal; final site delineations may differ.

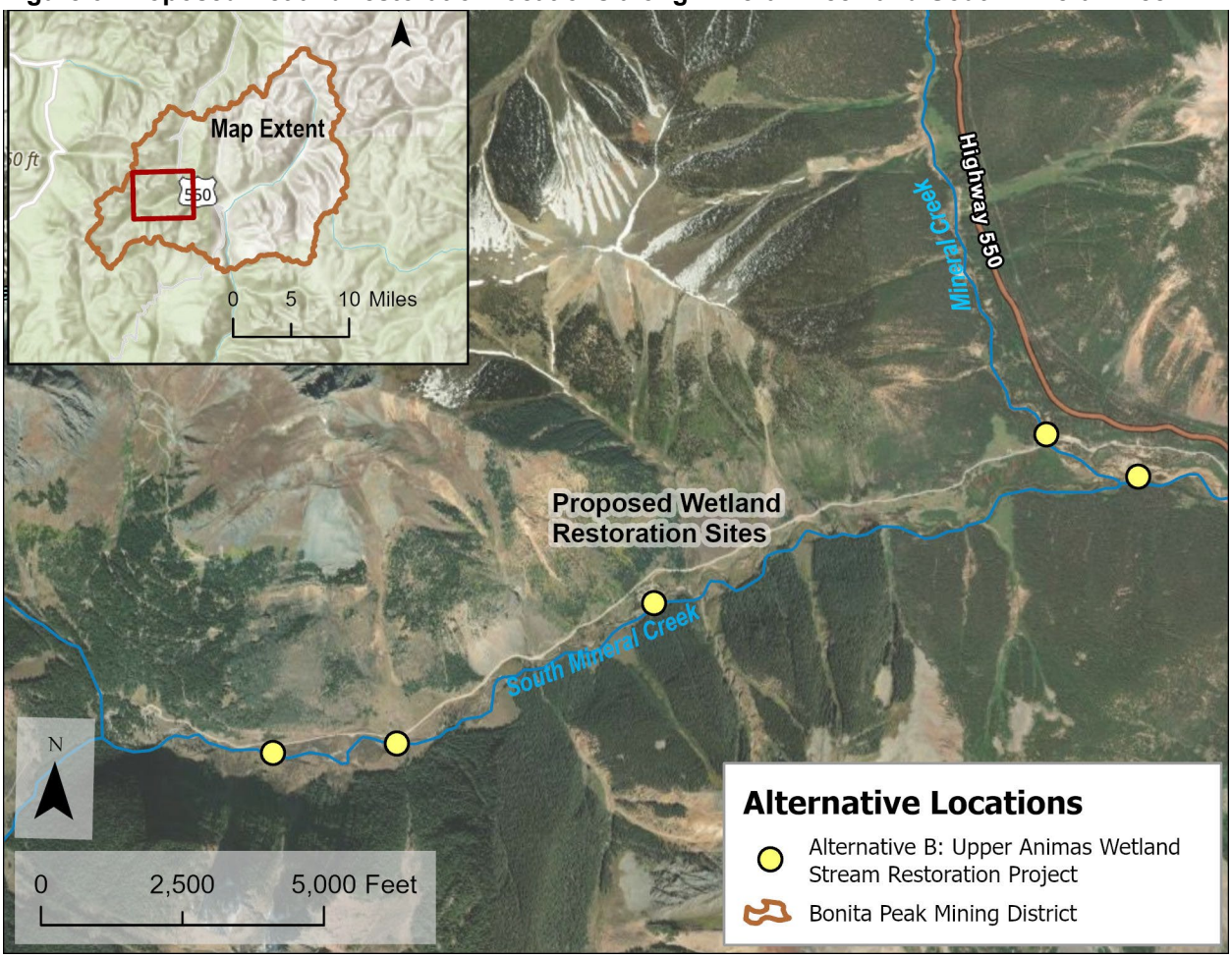


Activity 3: Riparian wetland restoration on Mineral Creek and South Mineral Creek

This restoration activity encompasses five discrete riparian wetland areas. Three areas are on South Mineral Creek, one is on Mineral Creek just upstream of the confluence with South Mineral Creek, and one is just downstream of the same confluence (Figure 6). The goal of this work is to restore degraded riparian wetlands and build educational opportunities for campers at these locations. This area is popular for recreation, and this project aims to educate the public on the importance of riparian wetlands and to provide a buffer around these important ecosystems.

Restoration activities at each of these proposed locations would be similar to those at the fen locations described in Activity 2. Briefly, the proponent would conduct groundwater elevation assessment activities to understand the depth of overburden materials and the amount of overburden material removal necessary to reestablish a connection to the water table. This restoration activity would include some excavation as well as planting or seeding appropriate local native species following the excavation phase.

Figure 6. Proposed wetland restoration locations along Mineral Creek and South Mineral Creek.



This work would be conducted in partnership with USFS and in conjunction with the USFS's recreation management plan that is in development for the area. The timeline for these restoration activities is longer than the Mill and Mineral Creek and Opher and Placer Gulch restoration activities described in the previous activities because much of the design work for those activities has been completed. For this activity, where no design work has been completed, the proponent estimates that the design phases would take about 18 months and permitting would take another 18 months. As with the other projects, the restoration itself is expected to be completed within nine months, and that work can be done in parallel across the locations. As with other restoration activities, monitoring would be conducted in years two and three and adjustments on-site would be made to ensure project performance as needed.

3.3.2 Project Costs

The amount of funding requested from NRD funds is $364,238.61. The total estimated project cost is $1,124,866 with a potential matching contribution of $770,657 from a grant from the Bureau of Reclamation's Upper Basin Bucket 2 Environmental Drought Mitigation program

(BOR B2E). The BOR B2E grant has been awarded, but no contract is in place. The proponent also received matching funds and private cash donations of $130,000 for these projects.

3.3.3 Trustee Assessment with Evaluation Criteria

The Trustees evaluated this project favorably based on the established Evaluation Criteria, as described below.

Likelihood of success: The project ranked medium-high for this criterion. The proposed techniques have been used at other sites, and the proposed project team has extensive expertise in these techniques. The proposed process is iterative, which provides the opportunity to monitor progress and correct any problems that may arise. The required level of long-term maintenance is unclear and a funding source for long-term maintenance is unclear.

Project alignment with regional planning: The project ranked high for this criterion. The locations proposed in this project were selected via the countywide Animas Headwaters Ecological Action Division (AHEAD) effort. This effort reviewed all available geospatial data that included environmental data such as streams, wetlands, tundra, wildlife, as well as recreational, and resource extraction data to understand areas in need of restoration, preservation, and where recreation could be enhanced. This process included over five work sessions with over 50 regional and local stakeholders.

Project utilizes multiple approaches: The project ranked high for this criterion. The proposed project would utilize multiple types of restoration methods including LTPBR, hardened rock features, and wetland creation, all while incorporating the recreation management plan that will be developed alongside this project by the USFS. The proposed project would also utilize specialized fen restoration methods including the establishment of acid-tolerant plant species at Ophir Fen, a particularly acidic and metal-laden system.

Project benefits: The project ranked medium to high for these criteria. The project would benefit multiple resources including riparian wetlands, fens, streams, aquatic life habitat, and water quality. Additionally, this project would provide improved recreational access and education. The project would utilize natural, positive feedback loops that help ensure that the systems can maintain themselves providing some long-term benefits to the ecosystem and communities that depend on them. However, the level of long-term maintenance to maintain these benefits is unclear. The implemented project and the resulting benefits would be protected as the proposed restoration actions would largely take place on federal lands and are protected by federal agencies. For work on private land, the proponents are currently working with the private landowner to explore a possible conservation easement to preserve the work.

The cost of this project is moderate considering the benefits of this project would begin within the first year that restoration occurs for each project. However, this project would occur in phases and full restoration would not be complete until 2029-2031. The project can be monitored, and

the benefits of the project would be measured and quantified. Monitoring methods would be multimodal and include areal drone mapping to track vegetation as a proxy for wetland vigor. The proponent would also monitor vegetation via vegetation monitoring plots, monitor groundwater levels from monitoring wells, and monitor gas fluxes of methane and carbon dioxide. The stream and riparian wetland restoration projects would be monitored for aquatic life via benthic macroinvertebrate monitoring. Changes in geomorphology would be monitored via a combination of drone and on the ground surveys. To evaluate the project benefits, the proponent would compare these metrics prior to and post implementation.

Matching funds: The project had a medium-high ranking for this criterion. It would match more than 80% of the requested $364,238.61 through a BOR B2E grant. The BOR B2E grant has been awarded, but no contract is in place. If the funding does not materialize, the proponent will pursue funding from CPW, Colorado Water Conservation Board, The Nature Conservancy, Trout Unlimited, Ducks Unlimited, Biophilia, and Colorado RESTORE. The proponent also received matching funds and private cash donations of $130,000 for these projects.

Multiple partners: The project ranked high for this criterion. Specifically, the project partners include AHEAD, the Columbine District of the San Juan National Forest, the Gunnison Office of the BLM, USFS, Michigan Technological University, and a private landowner. The proponent also anticipates partnering with Fort Lewis College and Silverton School to have students participate in restoration as an educational resource.

Disproportionately impacted community: The project ranked low for this criterion. The EnviroScreen tool score for Silverton is 10.54.

Table 4 provides a narrative evaluation and ranking of Alternative B.

Table 4. Evaluation of Alternative B: Upper Animas Wetland and Stream Restoration Project.

Evaluation Criteria	Narrative Evaluation	Ranking
Likelihood of success	The proposed techniques have been used at other sites, and the proposed project team has extensive expertise. The required level of long-term maintenance is unclear.	Medium-High
Project alignment with regional planning	The proposed project was developed during the AHEAD effort.	High
Project utilizes multiple approaches	The proposed project would utilize multiple types of restoration methods including LTPBR, hardened rock features, wetland creation, and incorporation of recreational management techniques.	High
Benefits multiple natural resources	The project would benefit multiple resources including riparian wetlands, fens, streams, aquatic life habitat, and water quality, and provide improved recreational access and education.	High
Long-term project benefits	The project would utilize natural, positive feedback loops to help ensure some long-term benefits. However, the level of long-term maintenance to maintain these benefits is unclear.	Medium

Table 4. Evaluation of Alternative B: Upper Animas Wetland and Stream Restoration Project.

Evaluation Criteria	Narrative Evaluation	Ranking
Protection of implemented project and benefits	The implemented project and the resulting benefits would be protected over time.	High
Project benefits versus expected cost	The cost of this project is moderate considering the benefits of this project would begin within the first year that restoration occurs for each location, but full restoration would not be complete until 2029-2031.	Medium
Project can be monitored and benefits can be measured and quantified	The proponent would undertake long-term monitoring using multimodal techniques that compare benefits before and after implementation.	High
Ability to obtain matching funds	The proponent would match over 80% of the requested NRD funds through a federal grant that has been awarded but not yet secured.	Medium-High
Project involves multiple partners	The project would involve multiple partners.	High
Project helps restore natural resources in disproportionately impacted community	The EnviroScreen tool score for Silverton is 10.54.	Low

3.4 Alternative C: Animas River Preservation and Access Project

Alternative C is the Animas River Access Project, proposed by San Juan County and the Town of Silverton. The goal of this project is to protect riparian habitat and improve recreation access to the Animas River by purchasing properties and easements along the river's edge.

3.4.1 Project Description

A series of land use planning documents, including the 2006 Animas River Corridor Plan, the 2019 Silverton Area Trails Plan, and the 2022 Silverton Compass Master Plan, have called for the protection of riparian habitat along the river corridor near Silverton, Colorado. San Juan County, in partnership with the Town of Silverton, is proposing to purchase land and easements within the Animas River Corridor that would protect riparian habitat and enhance recreational access to the river.

This project would occur in three phases. First, the proponent would conduct an initial inventory of potential properties that are ideal for acquisition or easement access along the river corridor. Next, the proponent would prioritize the properties that were identified during the initial review based on their alignment with the goals of the project and with the planning documents mentioned above. Last, the proponent would negotiate with landowners to purchase or provide easement access to the highest priority properties.

San Juan County and the Town of Silverton are currently in discussions with multiple landowners in targeted locations, and the properties being considered would preserve or restore between 30 and 40 acres of riparian and river corridor habitat. The proponent estimates that the

land acquisitions would take place over the course of a three-year period. Additionally, the proponent intends to coordinate riparian rehabilitation projects on acquired parcels though a phased ecological implementation strategy as needed.

3.4.2 Project Costs

San Juan County estimates the total project would cost $300,000, and they are requesting $150,000 in NRD funds. The remaining funds ($150,000) would be provided by match, which would be secured by San Juan County and cover project site assessments and land purchases.

3.4.3 Trustee Assessment with Evaluation Criteria

The Trustees evaluated this project favorably based on the established Evaluation Criteria.

Likelihood of success: The project ranked medium for this criterion. The proposed project goals are clear, although it is difficult to measure the extent of project benefits until specific areas of preservation have been identified. However, the proponent intends to acquire parcels that extend and unify conservation management along the river.

Project alignment with regional planning: The project ranked medium-high for this criterion. The Silverton community has long asked for protection, restoration, and appropriate recreational use of the river corridors as demonstrated in the 2006 Animas River Corridor Plan, the 2019 Silverton Area Trails Plan, and the 2022 Silverton Compass Master Plan. However, this project is not mentioned specifically.

Project utilizes multiple approaches: The project ranked medium for this criterion. The project uses multiple restoration approaches including acquisition and rehabilitation.

Project benefits: The project ranked low to high for these criteria. The project would primarily benefit the community by providing replacement and acquisition of properties and access rights that will be available for current and future citizens and visitors in the region. The project will also benefit ecosystem health and recreation. The project would provide long-term project benefits by providing permanent protection and preservation of river corridor properties along with permanent recreational access to the public.

However, the project would require some maintenance to be sustainable. The proposal does not identify how the implemented project and the resulting benefits would be protected as the project proponent has not yet identified specific parcels of land. Once specific parcels are identified, the proponent would identify the fee, title owner, and include a commitment to grant a conservation easement or other mechanism that allows the Trustees to ensure that the aquation would provide long term benefits. If a conservation easement is proposed, the project proponent would identify the easement holder and provide a draft of the conservation easement prior to closing on the easement.

The cost of this project is low considering securing easements and properties adjacent to the river corridors would have immediate public benefits. It is difficult to quantify the extent of benefits without the identification of specific parcels. However, some of the proposed project target parcels are in areas that exhibit habitat degradation and acquisition would enable the active restoration and long-term protection of this system.

The proposal does not specify how project benefits would be monitored or measured and quantified. However, San Juan County owns and manages approximately two hundred acres of property within its borders and has an extensive background in monitoring property and evaluating the efficacy of projects implemented within its jurisdiction.

Matching funds: The project ranked high for this criterion. It would match 100% of the requested $150,000. The proponent would pursue the $150,000 match from private and public entities who are yet to be determined. If they are not successful in securing matching funds San Juan County would provide the funding.

Multiple partners: The project ranked medium for this criterion. San Juan County would collaborate with private landowners, community volunteers, U.S. land management agencies, and the Town of Silverton to accomplish the proposed work. However, the proposal does not specify the degree to which each partner will collaborate as specific parcels of land have not yet been identified.

Disproportionately impacted community: The project ranked low for this criterion. The EnviroScreen tool score for San Juan County is 10.54.

Table 5 provides a narrative evaluation and ranking of Alternative C.

Table 5. Evaluation of Alternative C: Animas River Preservation and Access Project.

Evaluation Criteria	Narrative Evaluation	Ranking
Likelihood of success	The proposed techniques have been used at other sites. However, preserving land by acquisition only increases habitat services if properties would have otherwise been degraded or if the existing landowners refuse to allow riparian preservation.	Medium
Project alignment with regional planning	Various plans exist that align with this project, but this project is not mentioned specifically.	Medium - High
Project utilizes multiple approaches	The project uses multiple restoration approaches including acquisition and rehabilitation.	Medium
Benefits multiple natural resources	The project would primarily benefit the watershed community and ecosystem health and recreation.	Medium
Long-term project benefits	The project would provide long-term project benefits, however, the project would require some maintenance to be sustainable.	High
Protection of implemented project and benefits	The proposal does not identify how the implemented project and the resulting benefits would be protected as the project proponent has not yet identified specific parcels of land. However, some of the proposed project target parcels are in areas that exhibit habitat degradation and acquisition would enable the active restoration and long-term protection of this system.	Medium

Table 5. Evaluation of Alternative C: Animas River Preservation and Access Project.

Evaluation Criteria	Narrative Evaluation	Ranking
Project benefits versus expected cost	The cost of this project is low considering securing easements and properties adjacent to the river corridors would have immediate public benefits. It is difficult to quantify the benefits until specific parcels have been identified.	Medium
Project can be monitored and benefits can be measured and quantified	The proposal does not specify how project benefits would be monitored or measured and quantified.	Low
Ability to obtain matching funds	The project would match 100% of the requested NRD funds.	High
Project involves multiple partners	The project includes multiple partners; however, the degree to which each partner collaborates has yet to be determined.	Medium
Project helps restore natural resources in disproportionately impacted community	The EnviroScreen tool score for San Juan County is 10.54.	Low

3.5 Alternative D: Animas River Valley Bank Stabilization

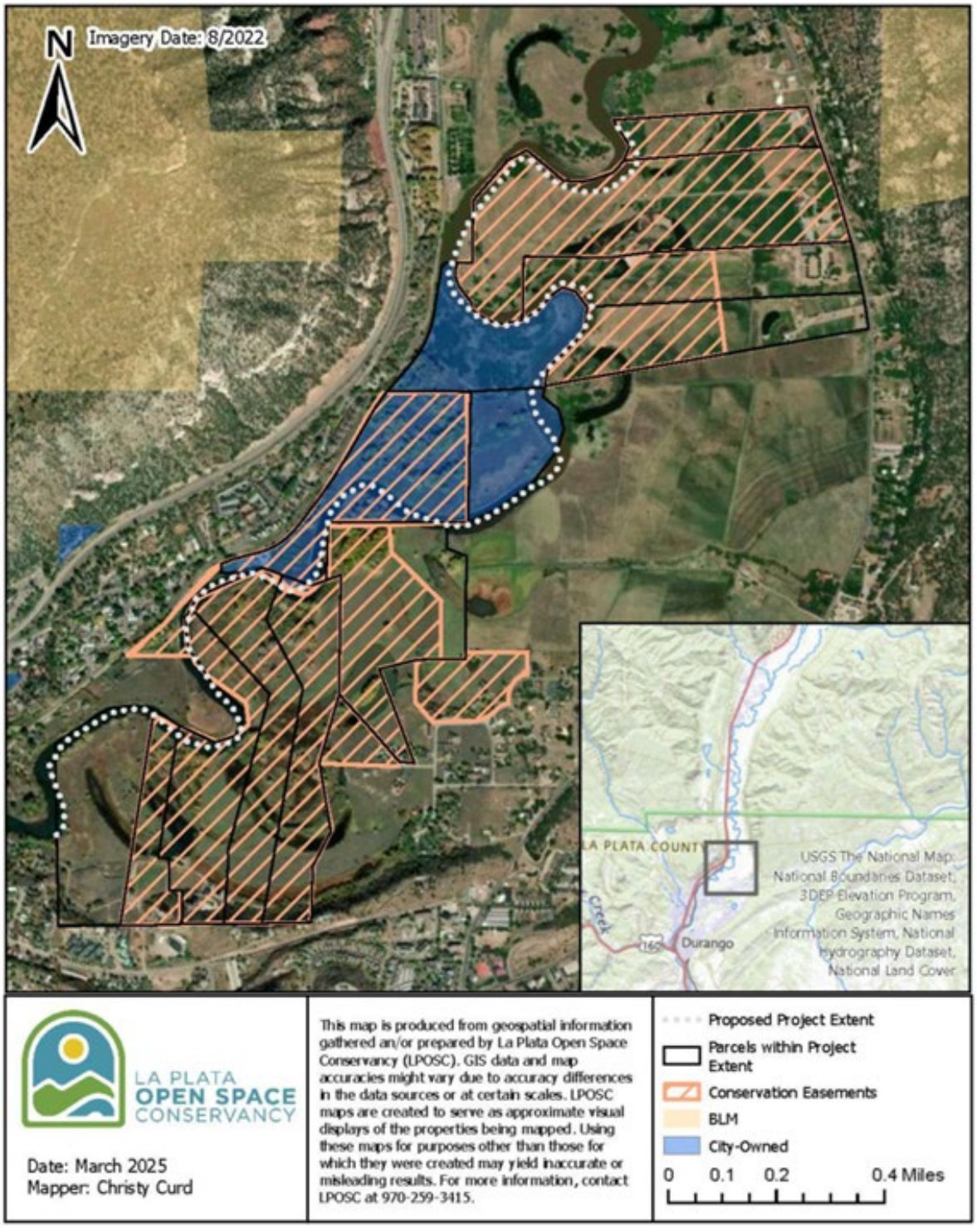
Alternative D, proposed by the Animas Watershed Partnership, with San Juan Resource Conservation and Development Council (SJRCD) as the fiscal agent, seeks to address riverbank erosion and floodplain connectivity issues by stabilizing Animas riverbanks along a 1–2 mile stretch of the river north of Durango. The goal of the project is to improve in-stream and riparian habitat, increase bank stability, and improve flood resilience.

3.5.1 Project Description

As a result of historic gravel mining in the upstream areas of the Animas River, sedimentation and erosion of streambanks has caused an overall degradation of the river reach on the north end of Durango. In addition to degrading the quality of habit within and along the river, this degradation has decreased the ability of the river to absorb high flow events, which leads to increases in flooding frequency and severity. Sedimentation has also led to decreased water quality downstream of these reaches and negatively impacted aquatic and riparian habitat. To address these issues, the proponent would conduct bank stabilization and channel restoration activities along a 1-2 mile area within a pre-identified 3.7-mile long stretch of the river, which passes through easement properties, private lands, and city-owned parcels (Figure 7).

The specific restoration actions that would be implemented with this project depend on preliminary site evaluations. However, potential restoration actions include recontouring to adjust streams slopes, installation of wetland benches, placement of flow control structures, and planting of native vegetation. All of these actions would help reduce erosive forces on the channel banks, which would improve in-stream and riparian habitat.

Figure 7. Potential Animas Riverbank Stabilization Project area and land ownership.



In addition, invasive species removal actions may be undertaken through the project, which would complement invasive control that is already occurring on some of the easement properties that border the proposed project area. While the project would strive to minimally disturb habitat, some areas may require in-channel equipment work. Overall, the project would improve stream

water quality and fish habitat, improve the reach's ability to contain high flows, and enhance the protection of riverfront properties from floods.

The proponent estimates that pre-construction site monitoring and site assessments would occur during the first six months of the project. Construction is estimated to be completed within three years of the project start, and all restoration activities would be completed by year six after the start of the project.

3.5.2 Project Costs

The amount of funding requested from NRD funds is $900,000. The total estimated project cost is estimated at $4,531,484. The project has a potential matching contribution of $3,466,485 from a BOR B2E grant. The BOR B2E grant has been awarded, but no contract is in place. The proponent has secured an additional match of $75,625 for project management and site assessment activities and is seeking a match of $165,000 to fund additional project management costs.

3.5.3 Trustee Assessment with Evaluation Criteria

The Trustees evaluated this project favorably based on their established Evaluation Criteria.

Likelihood of success: The project had a high ranking for this criterion. The proposed restoration techniques are well established. The project partners have a long-standing history of successfully implementing similar projects.

Project alignment with regional planning: The project had a high ranking for this criterion. In 2022, the Animas Watershed Partnership, with participation from community partners and stakeholders, began to develop a watershed plan within the Animas River watershed. The stakeholder assessment indicated public interest in addressing the ongoing erosion and impacts from historical gravel mining along this stretch of the Animas River corridor. The Animas Watershed Partnership is currently developing a stream management plan that will further help inform the design of this project and will include water quality assessments.

Project utilizes multiple approaches: The project had a medium ranking for this criterion. The proposed project will likely employ several methods and techniques, including natural processes, engineered structures, and other techniques to capture and prevent sediment accumulation, as well as provide bank stabilization. However, the project is still in the development phase and actual techniques for implementation have not yet been identified.

Project benefits: The project ranked high to low for these criteria. This project would benefit multiple natural resources and services including the aquatic and riparian ecosystem, water quality, and wildlife habitat. Additionally, this project would provide improved recreational opportunities. However, the duration and sustainability of the benefits are unclear and not listed in the proposal because the project is still in the development phase and actual techniques for

implementation have not yet been identified. Additional preliminary studies would be required to determine project duration and stability.

The implemented project and the resulting benefits would be protected over time as the majority of the identified parcels have perpetual conservation easements, and the two that do not are owned by the City of Durango. However, long-term maintenance will be the responsibility of the property owner(s). If a need for maintenance is identified, the landowners, Animas Watershed Partnership, and La Plata Open Space Conservancy would seek funding at that time.

The proponent's goal is to rely on engineering surveys to determine which areas should be prioritized for project work to be most cost-effective. However, project costs are high considering the benefits of this project would likely not be realized until after construction in 2031. A river health assessment would be conducted to help monitor conditions in the project area before implementation and will also provide a repeatable monitoring plan for the project post-implementation. Goals and metrics for a successful construction project would be defined during the stream management plan process and informed by the river health assessment.

Matching funds: The project ranked medium-high for this criterion. It would match more than 100% of the requested $900,000 through a grant for $3,466,485 from a BOR B2E grant. The BOR B2E grant has been awarded, but no contract is in place. The proponent has secured an additional match of $75,625 for project management and site assessment activities and is seeking a match of $165,000 to fund additional project management costs.

Multiple partners: The project ranked high for this criterion. Multiple landowners, the City of Durango, and La Plata Open Space Conservancy are already engaged in the planning process.

Disproportionately impacted community: The project ranked medium for this criterion. This project would help restore natural resources in disproportionately impacted communities. The project would occur upstream of the City of Durango and Southern Ute Indian Tribe boundaries. The EnviroScreen tool score for the area ranges between 35 and 40.

Table 6 provides a narrative evaluation and ranking of Alternative D.

Table 6. Evaluation of Alternative D: Animas River Valley Bank Stabilization Project.

Evaluation Criteria	Narrative Evaluation	Ranking
Likelihood of success	The proposed techniques have been used at other sites and project partners have successfully implemented similar projects are other sites.	High
Project alignment with regional planning	The proposed project is included in a watershed plan and is being included in a stream management plan that is in development.	High
Project utilizes multiple approaches	The project uses multiple restoration approaches; however, actual techniques for implementation have not yet been identified.	Medium
Benefits multiple natural resources	The project would benefit multiple resources and services including the aquatic and riparian ecosystem, water quality, wildlife habitat, and increase recreational opportunities.	High

Table 6. Evaluation of Alternative D: Animas River Valley Bank Stabilization Project.

Evaluation Criteria	Narrative Evaluation	Ranking
Long-term project benefits	The duration and sustainability of the benefits are unclear because the project is still in the development phase.	Low
Protection of implemented project and benefits	The implemented project would be protected as the majority of the identified parcels have perpetual conservation easements, however, funding for long-term maintenance is not secured.	Medium
Project benefits versus expected cost	The cost of this project is high considering the benefits of this project would likely not be realized until after construction in 2031.	Medium-Low
Project can be monitored and benefits can be measured and quantified	A river health assessment would be conducted to help monitor conditions before implementation and post-implementation.	Medium
Ability to obtain matching funds	The proponent would match over 100% of the requested NRD funds through a federal grant that has been awarded but not yet secured.	Medium-High
Project involves multiple partners	The project includes multiple partners including multiple landowners, the City of Durango, and La Plata Open Space Conservancy.	High
Project helps restore natural resources in disproportionately impacted community	The project would help restore natural resources in disproportionately impacted communities.	Medium

3.6 Alternative E: Animas River Corridor Project

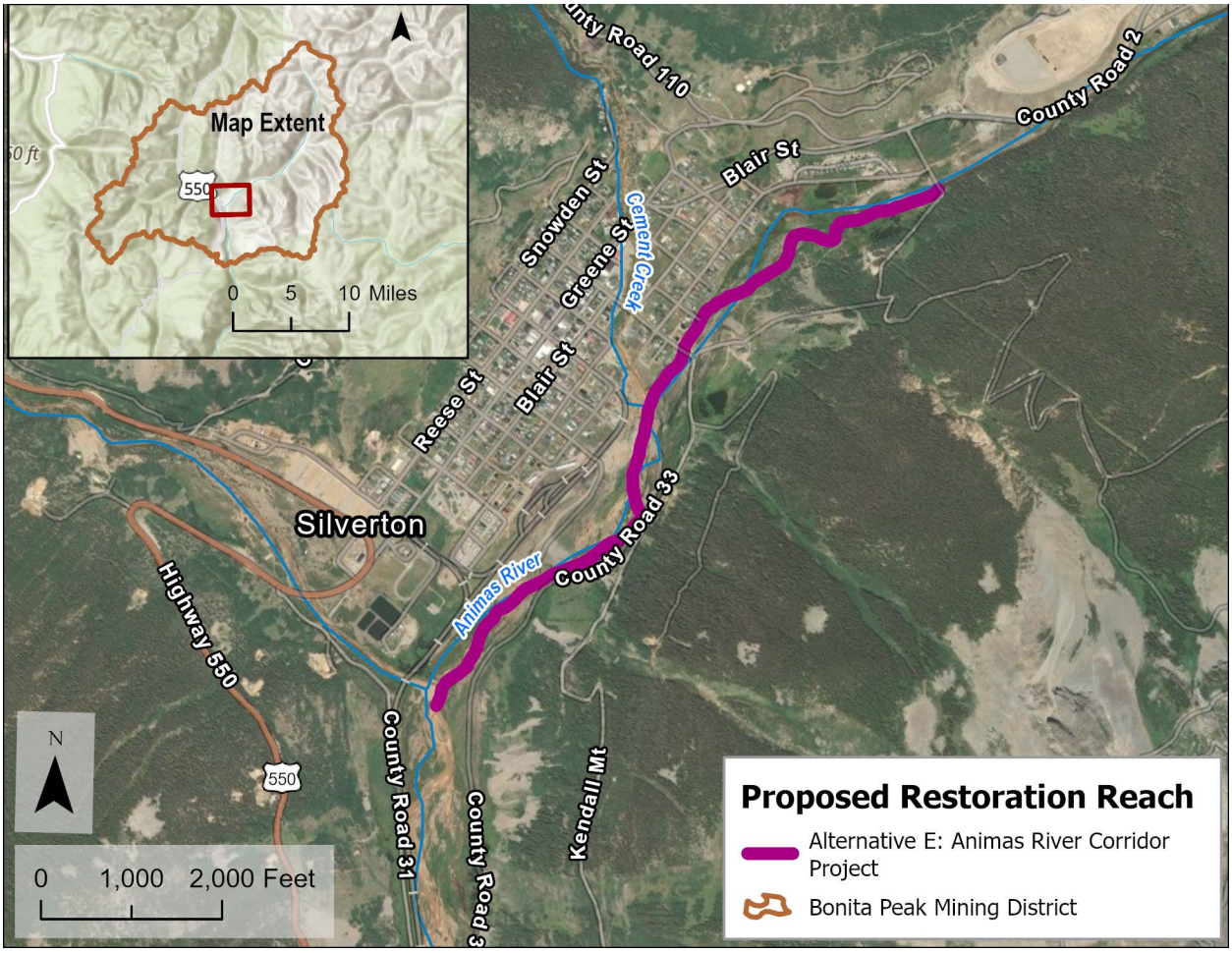
Under Alternative E, the Town of Silverton would perform fen, riparian wetland, and stream restoration along the Animas River within the town boundary. The project would also improve river access and enhance recreational opportunities.

3.6.1 Project Description

The Animas River corridor in Silverton (Figure 8) stretches from the Lackawanna Mill site to the confluence with Mineral Creek. In the heart of this river corridor is the confluence with Cement Creek, a tributary of the Animas River that drains many legacy mine sites, including Gold King Mine. Historical mining activities have led to the degradation of wetlands, riparian and aquatic resources near the project area. Mine drainage from the upper reaches of Cement Creek discharges low pH water into the Animas River near Silverton and has degraded water quality. In addition, mining related dredging, sedimentation, and road rerouting have degraded wetland and riparian habitats and, in some cases, changed the hydrology of wetland systems.

This stretch of river should serve as a recreational hub for area residents but sits idle due to the impacts of legacy mining. As part of the Animas River Corridor (ARC) project, Silverton proposes to use LTPBR and traditional restoration techniques such as bank hardening and revegetation and seeding to improve in-stream, riparian and wetland habitats. The ARC would also enhance recreational use of the area. More specifically, the project would include the following activities:

Figure 8. Location of the Animas River Corridor project.



- Construct an Animas River bifurcation and treatment wetland at the Cement Creek confluence (Activity 1)
- Implement in-stream and riparian wetland restoration (Activity 2)
- Implement fen restoration (Activity 3)
- Construct trails and bridges to improve recreational use of the corridor (Activity 4).

Each of these activities is discussed in more detail below.

Activity 1: Animas River Bifurcation and Treatment Wetland

For this portion of the proposed restoration, Silverton would construct a levee to bifurcate Cement Creek from the Animas River. The 0.2-mile-long levee system would run from the Cement Creek / Animas River confluence to an abandoned floodplain. Within the floodplain area, Silverton would construct a wetland that would provide passive treatment of the acidic mine water from upper Cement Creek. This system would rely on gravity to move water through the system, requiring little to no chemical additions by mimicking the natural processes of

wetlands. The proposal discusses a range of passive treatment system options that could be employed at the wetland site, including aerobic and anaerobic wetlands; anoxic limestone drains, ponds or channels; vertical flow systems; or permeable reactive barriers. During the planning and design phase of the project, Silverton would work closely with an engineering firm to determine the method best suited for the project site.

Activity 2: Instream and Riparian Wetland Restoration

For this part of the project, Silverton would use LTPBR techniques to reestablish floodplain connectivity (Figure 9). This would include the installation of PALS, which would improve channel complexity and floodplain connectivity. These structures mimic the natural processes of wood accumulation and beaver dams, which in turn increase stream channel complexity by moving water onto the floodplain, increasing the sinuosity of the stream, and creating new braided systems. The improved channel structure may also provide habitat for beaver recruitment from local populations found in reaches both up and downstream of the site.

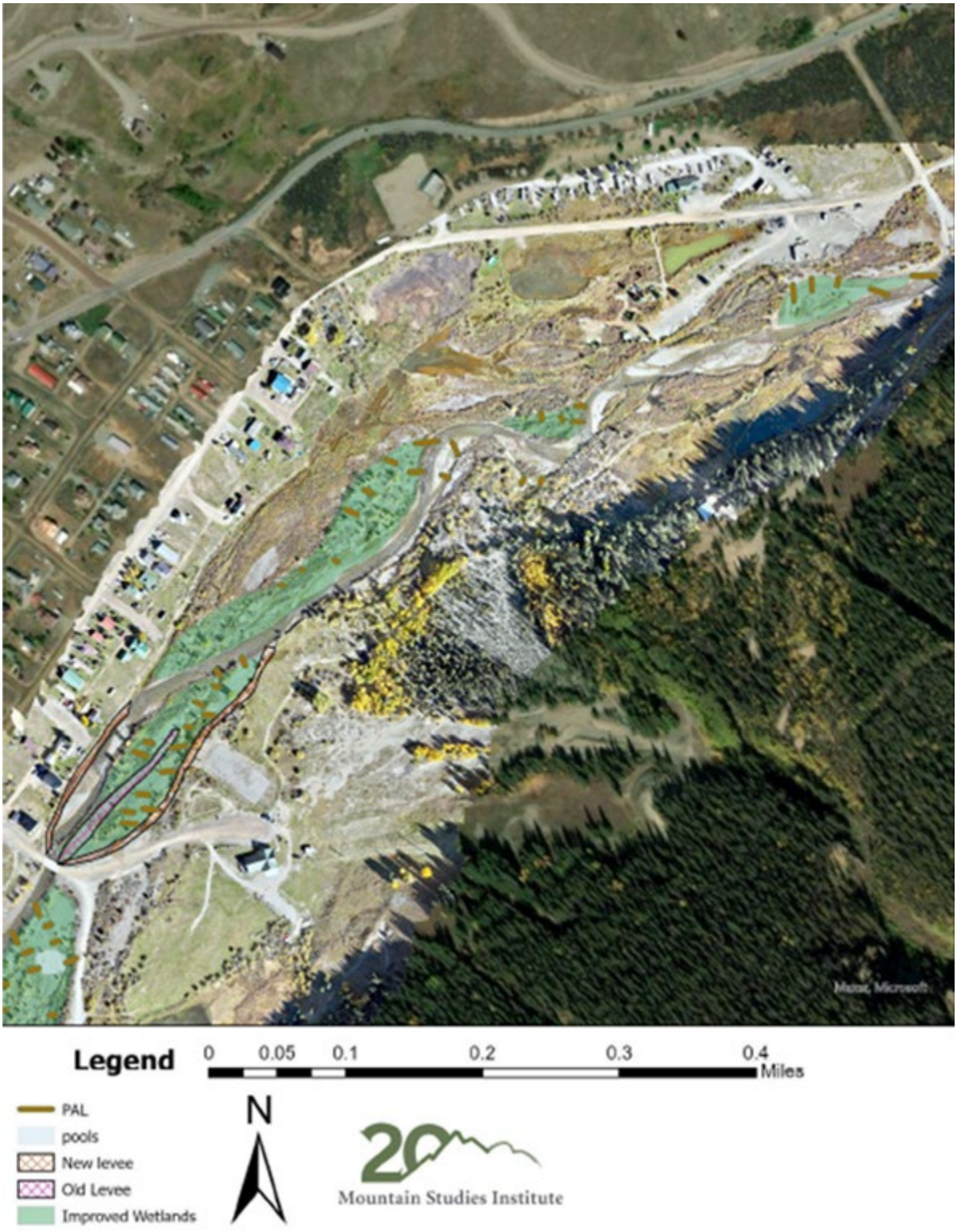
Activity 3: Fen Restoration

This part of the project would focus on fen habitat that has been degraded over time through the deposition of sediment containing mine waste related contaminants. As with the fen restoration described in Alternative B, the project would need to assess the depth of overburden material that would need to be excavated to reconnect the site with groundwater. The project would also need to evaluate which plants would best tolerate the soils at the site, which are acidic and contain heavy metals from the deposition of contaminated sediment. This evaluation would be done through test plots containing different types of plants. After these initial evaluations, the overburden would be removed using excavation equipment. After the fen area has been cleared of overburden material, planting and seeding would take place using the species that best tolerated on-site conditions. In addition, excavated material would be saved and used to create an upland spruce habitat near the fen.

Activity 4: Trail and Bridge Restoration

Public access to and enjoyment of the Animas River has been significantly restricted due to mining related contamination and habitat degradation. To improve the public's enjoyment of, and access to, the natural resources in the Animas River Corridor, the project would install walking trails and bridges to help them experience and enjoy nature while also protecting restored areas. The trails would provide Americans with Disabilities Act (ADA) access from the center of town (near the drop off for the Durango and Silverton Narrow Gauge Railroad). The trails would also connect to trails in Silverton's comprehensive Perimeter Trails network.

Figure 9. Location of instream and riparian wetland restoration in the upper half of the reach in Silverton.



3.6.2 Project Timeline

The project proponent estimates that the project would take six years from the start date to complete. The project would proceed in phases, with planning, design, and permitting occurring within the first 18 months. The construction of the treatment wetland would begin in Year 2 and be completed in Year 4. In-stream, riparian wetland, and fen restoration would begin in Year 3 and would continue to Year 6. Recreational improvements (trails and bridge construction) would begin in Year 4 and be completed in Year 6. Monitoring and reporting are scheduled to be ongoing throughout the project.

3.6.3 Project Costs

The total estimated cost of the project is $5,042,471, and the request for NRD support of the project is $1,700,000. Silverton is in the process of securing additional matching funds for final design and permitting activities. As a portion of the grant match, Silverton would help secure the Kendall Mountain Recreation and Public Purpose (R&PP) land parcel, valued at $1,180,000, on which restoration activities would occur.

3.6.4 Trustee Assessment with Evaluation Criteria

The Trustees evaluated this project favorably based on their established Evaluation Criteria.

Likelihood of success: The project ranked medium-high for this criterion. The proposed techniques have been used at other sites, and the proposed project team has extensive expertise in these techniques. However, the project is still in the early phases of development.

Project alignment with regional planning: The project ranked high for this criterion. The proposed project has had long-standing support and alignment with regional land management plans. The ARC directly fits into the BLM R&PP Plan of Management and Development, is closely aligned with the AHEAD regional workgroup priorities, and is well-suited to the stakeholder priorities emerging from the Southwest Colorado Conservation Outdoor Recreation Roundtable, which is tied to Great Outdoors Colorado strategic funding priorities. The ARC has also been locally prioritized in the 2006 Animas River Corridor Plan, the 2019 Silverton Area Trails Plan, and the 2022 Silverton Compass Master Plan.

Project utilizes multiple approaches: The project ranked high for this criterion. The proposed project would utilize multiple restoration techniques including LTPBR, traditional restoration methods to harden sections of the stream where infrastructure needs to be protected, planting of local native seeds and willow stakes to increase wetland vegetation, and restoration techniques developed specifically to restore a degraded fen. The proposed project would also utilize engineered treatment wetlands to improve water quality.

Project benefits: The project ranked medium-low to high for these criteria. This project would benefit multiple natural resources and services including the aquatic and riparian ecosystem, streams, wetlands, and fens. Additionally, this project would provide improved recreational

opportunities. The methods of restoration for the proposed project lean heavily into natural processes. The proponent expects to see long-lasting wetland habitat, sustained improvements in water quality, and improved recreational opportunities and access. However, the duration and sustainability of the benefits are unclear and not listed in the proposal because the project is still in the development phase.

The implemented project and the resulting benefits would be protected over time as the proposed project area has some protections under the jurisdiction of the United States Army Corps of Engineers. Silverton also has a plan of management and development with the BLM for the conveyance of the R&PP lands that includes a restriction to only use the land for recreational and public use. The land is zoned public which also ensures that the town will remain the steward of the land and can ensure appropriate use. The proposed project would require some long-term maintenance and monitoring. Funding for this maintenance and monitoring is not yet secured.

The proposed project uses multiple restoration techniques including LTPBR techniques which tend to be more cost effective than traditional techniques. However, project costs are high considering most of the benefits of this project would likely not be realized until after construction in 2031. The proponent would monitor the project using aerial drone surveys, with on-the-ground Real Time Kinematic (RTK) surveys to map and track changes in the geomorphology and connectivity of the floodplains. Routine monitoring would be performed during the first year. Additional funding would need to be secured to support long-term monitoring and maintenance.

Matching funds: The project ranked medium-low for this criterion. The amount of funding requested from NRD funds is $1,720,000. The total estimated project cost is $5,042,471. The Town of Silverton would utilize the land value of the Kendall Mountain R&PP, the proposed project area, of $1,118,000 as a match. The proponent has identified a variety of additional potential funding sources; however, additional funds have not been secured at this time.

Multiple partners: The project ranked high for this criterion. The proposed project represents long-standing collaboration between numerous partners. The project planning and design has involved multiple partners, including the Town of Silverton, San Juan County, the BLM, and private landowners.

Disproportionately impacted community: The project ranked low for this criterion. The EnviroScreen tool score for Silverton is 10.54.

Table 7 provides a narrative evaluation and ranking of Alternative E.

Table 7. Evaluation of Alternative D: Animas River Corridor Project.

Evaluation Criteria	Narrative Evaluation	Ranking
Likelihood of success	The proposed techniques have been used at other sites, and the proposed project team has extensive expertise in these techniques. However, the project is still in the early phases of development.	Medium-High
Project alignment with regional planning	The proposed project in alignment with and mentioned in regional plans.	High
Project utilizes multiple approaches	The project would utilize multiple restoration techniques including LTPBR, traditional restoration methods, planting of local native seeds and willow stakes, restoration techniques developed specifically to restore fens, and engineered treatment wetlands.	High
Benefits multiple natural resources	The project would benefit multiple resources and services including the aquatic and riparian ecosystem, streams, wetlands, and fens and increase recreational opportunities.	High
Long-term project benefits	The proponent expects to see long lasting benefits, however, the duration and sustainability of the benefits are unclear because the project is still in the development phase.	Medium
Protection of implemented project and benefits	The implemented project would be protected as the area is under the jurisdiction of the United States Army Corps of Engineers, however, funding for long-term maintenance is not secured	Medium
Project benefits versus expected cost	The cost of this project is high considering the benefits of this project would likely not be realized until after construction in 2031.	Medium-Low
Project can be monitored and benefits can be measured and quantified	The proponent would monitor the project to map and track changes over time; however, additional funding would need to be secured to support long-term monitoring and maintenance.	Medium
Ability to obtain matching funds	The proponent would match 60% of the requested NRD funds through the land value of the proposed project area, additional funding must be secured to fully fund project.	Medium-Low
Project involves multiple partners	The project planning involves multiple partners including, Silverton, San Juan County, the BLM, and private landowners.	High
Project helps restore natural resources in disproportionately impacted community	The project ranked low for this criterion. The EnviroScreen tool score for Silverton is 10.54.	Low

4. Summary of Evaluated Alternatives

The Trustees completed a screening and evaluation process pursuant to Section 107(f) of CERCLA, and DOI NRDA regulations at 43 CFR Part 11 for each proposed restoration alternative and identified Alternatives A through E as the preferred alternatives. The No Action-Natural Recovery Alternative was non-preferred. Table 8 summarizes the evaluation rankings across restoration alternatives.

Table 8. Summary of evaluated alternatives.

Evaluation Criteria	Evaluated Alternatives				
	A	B	C	D	E
Likelihood of success	H	M-H	M	H	M-H
Project alignment with regional planning	M-H	H	H	H	H
Project utilizes multiple approaches	L	H	M	M	H
Benefits multiple natural resources	H	H	M	H	H
Long-term project benefits	M-H	M	H	L	M
Protection of implemented project and benefits	H	H	M	M	M
Project benefits versus expected cost	H	M	M	M-L	M-L
Project can be monitored and benefits can be measured and quantified	H	H	L	M	M
Ability to obtain matching funds	H	M-H	H	M-H	M-L
Project involves multiple partners	M-L	H	M	H	H
Project helps restore natural resources in disproportionately impacted community	M	L	L	M	L

5. Conclusion

The Trustees have developed this Draft RP to describe the proposed preferred alternatives. The Trustees propose spending approximately $3.5 million to implement the following restoration projects:

- Fish Hatchery Water Treatment Project at Durango State Fish Hatchery
- Upper Animas Stream Restoration Project
- Animas River Preservation and Corridor Project
- Aminas River Bank Stabilization Project
- Animas River Corridor Project.

6. Public Comments and Trustee Responses

This section summarizes the public comments received on the project proposals and provides the Trustee's response to those comments. The public comment period on the project proposals began in July 2025 and ended on August 31, 2025.

Comment 1: Kara Hellige, Chief of the Southern Colorado Branch of the U.S. Army Corp of Engineers, stated, "Thank you for requesting agency comments for the proposed projects. It appears some of these activities may result in the discharge (placement) of dredged or fill material into a water of the United States and therefore a permit from our office is required under Section 404 of the Clean Water Act. Please ensure that the project proponent notifies our office prior to the initiation of construction activities within a waterway or adjacent wetland. The project proponent can submit a permit application or request a preconstruction notification using our regulatory request system at https://rrs.usace.army.mil."

> **Response:** As noted in the SPP, the project must comply with all applicable federal, state, and local laws, rules, regulations, and permit requirements. Project proponents must obtain all permits, licenses, and approvals prior to commencing any construction work.

Comment 2: Kerrianne Zdimal, Regulatory Specialist with the Southern Colorado Branch of the U.S. Army Corp of Engineers, stated, "We appreciate the opportunity to review the NRD Animas River Corridor project that has the potential to impact aquatic resources. It is my understanding that the comment period concluded on August 31, 2025; however, we submit the following comments with the understanding that the comment period has concluded.

Our regulatory jurisdiction is under the authority of Section 404 of the Clean Water Act for the discharge of dredged or fill material into waters of the United States. Waters of the United States include, but are not limited to, rivers, streams, lakes, ponds, wetlands, wet meadows, and seeps. Project features that result in the discharge of dredged or fill material into waters of the United States require Department of the Army authorization prior to starting work.

Based on review of the proposal, it appears that the project proponent intends to submit a pre-construction notification (PCN) for use of Nationwide Permit 27. Please note 2021 Regional Conditions for Colorado in regards to this permit type and Nationwide Permit 27 Guidelines --- both available at https://www.spa.usace.army.mil/Missions/Regulatory-Program-and-Permits/NWP/.

To ascertain the extent of waters on the project site, it is recommended that the applicant prepare a delineation of aquatic resources, in accordance with the applicable standards available on our website, including the1987 Wetland Delineation Manual and the Recommended Minimum Standards for Aquatic Resource Delineation Reports (https://www.usace.army.mil/Media/Announcements/Article/4262089/1-august-2025-us-army-

corps-of-engineers-enhances-aquatic-resource-delineation/). The delineation should then be part of evaluating a range of alternatives that meet the project purpose.

The range of alternatives considered for this project should include alternatives that avoid and minimize impacts to wetlands, streams, and other waters of the United States. Every effort should be made to avoid project features which require the discharge of dredged or fill material into waters of the United States. In the event it can be clearly demonstrated there are no practicable alternatives to filling waters of the United States, mitigation plans may need to be developed to compensate for the unavoidable losses resulting from project implementation."

> **Response:** As noted in the SPP, the project must comply with all applicable federal, state, and local laws, rules, regulations, and permit requirements. This includes considering a range of alternatives that avoid and minimize impacts to wetlands, streams, and other waters of the United States. Project proponents must obtain all permits, licenses, and approvals prior to commencing any construction work.

7. References

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