GOVERNOR
STEVE BULLOCK

STATE OF MONTANA

Governor's Executive Budget
Fiscal Years 2022 - 2023

Reclamation and Development Grants Program

Department of Natural Resources and Conservation

Conservation and Resource Development Division

Volume 5

Reclamation and Development Grants Program

Project Evaluations and Funding Recommendations
For the 2023 Biennium

and

2011 Through 2019 Biennia Status Report

Prepared by the

Montana
Department of Natural Resources
and Conservation

Conservation and Resource Development Division
Resource Development Bureau

Autumn Coleman, Bureau Chief
Heidi Anderson Folnagy, Program Manager

January 2021

TABLE OF CONTENTS

LIST OF TABLES AND MAP

LIST OF ABBREVIATIONS

ASARCO ..... American Smelting and Refining Company
BLM ..... Bureau of Land Management, United States Department of the Interior
BMP ..... Best Management Practices
CARDD ..... Conservation and Resource Development Division
CD ..... Conservation District
CECRA ..... Comprehensive Environmental Cleanup and Responsibility Act of 1989, also known as State Superfund Program
DEQ ..... Montana Department of Environmental Quality
DNRC ..... Montana Department of Natural Resources and Conservation
EPA ..... U.S. Environmental Protection Agency
FEMA ..... Federal Emergency Management Agency
FWP ..... Montana Fish, Wildlife and Parks
FPT ..... Fort Peck Assiniboine and Sioux Tribes
GPS ..... Global Positioning System
HB ..... House Bill
LIF ..... laser induced fluorescence
MBMG ..... Montana Bureau of Mines and Geology
MCA ..... *Montana Code Annotated*
MDT ..... Montana Department of Transportation
MEPA ..... Montana Environmental Policy Act
MRH ..... Milwaukee Roundhouse Facility
MRSN ..... Montana Regional Seismic Network
MT ..... Montana
RDG/RDGP ..... Reclamation and Development Grants Program
RIGWA ..... Resource Indemnity Groundwater Assessment Tax
RIT ..... Resource Indemnity Trust
RRGL ..... Renewable Resource Grant and Loan Program
SSRA ..... State Special Revenue Account
US ..... United States of America
USFS ..... United States Forest Service
VCRA ..... Voluntary Cleanup and Redevelopment Act

PROJECTS SUBMITTED FOR FUNDING IN THE 2023 BIENNIUM

Following is a list of projects submitted for funding in the 2023 biennium. For easy reference, the list is alphabetized by the names of the project sponsors. However, in Chapter II the project assessments and recommendations are presented in the order of their ranking by the Montana Department of Natural Resources and Conservation (DNRC) and the Governor.

APPLICANT NAME – Project Title **Page**

CHAPTER I
Program Description and Procedures

Program Information

The Reclamation and Development Grants Program (RDGP) is a state-funded grant program designed to fund projects that *"indemnify the people of the state for the effects of mineral development on public resources and that meet other crucial state needs serving the public interest and the total environment of the citizens of Montana"* (90-2-1102, MCA). The program, established by the 1987 Montana Legislature, is administered by the Montana Department of Natural Resources and Conservation (DNRC).

In February 2020, DNRC notified all Montana communities, counties, the university system, conservation districts (CDs), state agencies, state legislators, and others who might benefit by program participation that the grant application for 2020 was available electronically. Application materials were also printed for distribution. The application deadline was May 15, 2020 but was extended to June 1, 2020 under emergency rules related to the COVID-19 pandemic and the Governor's Emergency Order. DNRC received 18 applications for RDGP funding totaling over $6.9 million. One project subsequently withdrew, so DNRC ranked 17 applications requesting a total of over $6.4 million. These projects are listed alphabetically by applicant on page iii. A map of the proposed projects is included at the end of this chapter on page 6. Project assessments and recommendations are presented in Chapter II.

Since 1986, previous Legislatures have authorized about $72 million for 306 projects. RDGP grants are funded by revenue generated from resource extraction taxes. Portions of the following sources of revenue are deposited in the natural resources state special revenue account (SSRA): the resource indemnity groundwater assessment tax (RIGWA), the oil and gas production tax, and interest earnings from the resource indemnity trust fund (RIT). Funds from the natural resources SSRA are shared by DNRC's two natural resource grant programs: the RDGP and the Renewable Resource Grant and Loan Program (RRGL). Funding for the 2020-2021 biennium included $1.247 million in funding from the sale of General Obligation Bonds to fund 5 projects. Bonds were authorized with the passage of HB 652. The 2019 Legislature also approved $3,666,778 in funding for 8 projects funded with natural resource revenues through HB 7.

The 2019 Legislature approved authorization of $900,000 in project planning grant funding. Chapter IV describes DNRC's role in the administration of planning grants and lists the 17 projects that were approved for funding as of October 2020.

The 2015 Legislature authorized $214,000 for the Montana Salinity Control Association. Chapter V describes DNRC's role in the administration of funds for this program and describes how these funds were spent.

The RDGP Act (90-2-1112, MCA) requires that the Governor submit, by the first day of each regular session of the Legislature, a list of all grant proposals received along with his or her recommended priorities for funding (Table 1). Administrative rules (ARM 36.19.304) further provide that the DNRC must furnish to the Legislature a status report on previously funded projects (Chapter III). This document fulfills the requirements of those directives.

Project Eligibility

The following excerpt from the RDGP Act establishes project eligibility criteria:

1. Except as provided under subsection (2), to be eligible for funding under the RDGP, the proposed project must provide benefits in one or more of the following categories:
   a. Reclamation of land, water, or other resources adversely affected by mineral development;
   b. Mitigation of damage to public resources caused by mineral development;
   c. Research, demonstration, or technical assistance to promote the wise use of Montana minerals, including efforts to make processing more environmentally compatible;

d. Investigation and remediation of sites where hazardous wastes or regulated substances threaten public health or the environment; and,
e. Research to assess existing or potential environmental damage resulting from mineral development.

2. If a crucial state need exists to protect Montana's environment, the DNRC may evaluate and the Governor may recommend that the Legislature approve funding for projects in addition to those described in subsection (1).

Applicant Eligibility
Any department, agency, board, commission, or other division of state government or any city, county, or other political subdivision or tribal government within the state may apply for a grant from the RDGP.

Funding Limits
No grant may exceed $500,000, and there is no minimum funding limit. An applicant proposing more than one project may submit a separate application for each. Match funding is not required but may raise the rank of the project.

Application Review and Ranking Procedures
Grant applications are evaluated for the technical and financial feasibility of proposed projects, provision of public benefits, need and urgency, and impacts on the environment. Reviewers include DNRC staff members within DNRC's Conservation and Resource Development Division (CARDD); contracted engineering and consulting firms; and federal, state, and university personnel with expertise in specific project areas. For each application, project reviewers submitted a descriptive project assessment incorporating their concerns, ideas, and comments.

More funds are requested than are available. Therefore, the department ranks feasible projects so that it can recommend funding priorities and funding levels to the Governor and the Legislature. Evaluation criteria established by the 1987 Legislature include, but are not limited to:

1. The degree to which the project will provide benefits in its eligibility category or categories;
2. The degree to which the project will provide public benefits;
3. The degree to which the project will promote, enhance, or advance the policies and purposes of the RDGP;
4. The degree to which the project will provide for the conservation of natural resources;
5. The degree of need and urgency for the project;
6. The extent to which the project sponsor or local entity is contributing to the costs of the project or is generating additional non-state funds;
7. The degree to which jobs are created for persons who need job training, receive public assistance, or are chronically unemployed; and
8. Any other criteria DNRC considers necessary to carry out the policies and purposes of the RDGP.

Grant applications were scored and ranked based on the degree to which they met evaluation criteria listed above. DNRC is statutorily required to give priority to abandoned mine reclamation projects in the amount of $800,000 (90-2-1113 [3] MCA). These projects may not include personnel costs or operating expenses.

Recommendations
After ranking the projects and recommending funding, DNRC presented recommendations to the Governor for final ranking of the proposed projects (Table 1), along with funding recommendations.

An appropriations bill listing the Governor's recommendations regarding all projects in Table 1 will be introduced to the 2021 Legislature. By appropriation or other means, the Legislature may approve grants for those projects it finds consistent with the policies and purposes of the RDGP.

The appropriations bill will also contain a request for RDGP planning grant funds. These funds, to be administered by DNRC, can be accessed by local governments statewide to assist in planning and developing local natural resource projects within their jurisdictions.

Table 1. Ranking and Funding Recommendations for RDGP Applications Received June 2020

Rank	Applicant	Project Name	Amount Requested	Amount Recommended	Cumulative Amount
The first 16 projects below this line are recommended for funding.					
1	*Philipsburg, Town of*	*Wastewater Treatment System Improvements, Metals Contaminated Sludge Removal and Disposal*	$429,000	$429,000	$429,000
2	*Mineral County Conservation District*	*Flat Creek Dispersed Tailings Removal and Restoration*	$219,960	$219,960	$648,960
3	Missoula County	Ninemile Creek Placer Mine Reclamation, Phase 6	$351,000	$351,000	$999,960
4	*Harlowton, City of*	*Contaminated Soils and Free Product Removal at the Harlowton Roundhouse in Harlowton, MT, Phase 4*	$500,000	$500,000	$1,499,960
5	*Mineral County*	*Interim Remedial Action at Milwaukee Road - Haugan State Superfund Facility*	$499,324	$499,324	$1,999,284
6	*Powell County*	*Milwaukee Roundhouse Area Remediation, Phase 2*	$500,000	$500,000	$2,499,284
7	Montana Tech - Montana Bureau of Mines and Geology	Modernization of Montana's Regional Seismic Network	$499,739	$499,739	$2,999,023
8	Montana Department of Environmental Quality	Landusky Swift Gulch High Flow Treatment System and Stream Rehabilitation	$411,199	$411,199	$3,410,122
9	*Lewis and Clark County*	*Grizzly Gulch Placer Mine Reclamation*	$292,611	$292,611	$3,702,833
10	*Lewistown, City of*	*Central Post and Treating Company CECRA Facility: Phase 2, Capping and Site Reclamation*	$500,000	$500,000	$4,202,833
11	*Sunburst, Town of*	*Town of Sunburst Suta South Clean Up Project*	$185,805	$185,805	$4,388,638
12	City and County of Butte-Silver Bow	Butte Mining District: Reclamation and Protection Project, Phase V	$355,130	$224,680	$4,613,318

Rank	Applicant	Project Name	Amount Requested	Amount Recommended	Cumulative Amount
13	*Ruby Valley Conservation District*	*Granite Creek Reclamation Realignment Project*	$461,500	$461,500	$5,074,818
14	*Deer Lodge Valley Conservation District*	*Upper French Gulch Fish Passage and Restoration Project*	$194,832	$194,832	$5,269,650
15	*Fort Peck Assiniboine and Sioux Tribes*	*Orphaned Oil Well Abandonment and Reclamation*	$498,862	$300,000	$5,569,650
16	Ryegate, Town of	Former Ryegate Conoco Groundwater Remediation	$232,505	$232,505	$5,802,155
The projects below are not recommended for funding.					
*	*Beaverhead Conservation District*	*Grasshopper Creek Mine Tailings Reclamation*	$298,470	$0	$5,802,155
The project below was withdrawn from consideration by the applicant.					
**	*Montana Department of Natural Resources and Conservation*	*Development of Groundwater Model Web Application for Montana*	**	$0	$5,802,155
		Cumulative Total	**$6,429,847**	**$5,802,155**	**$5,802,155**

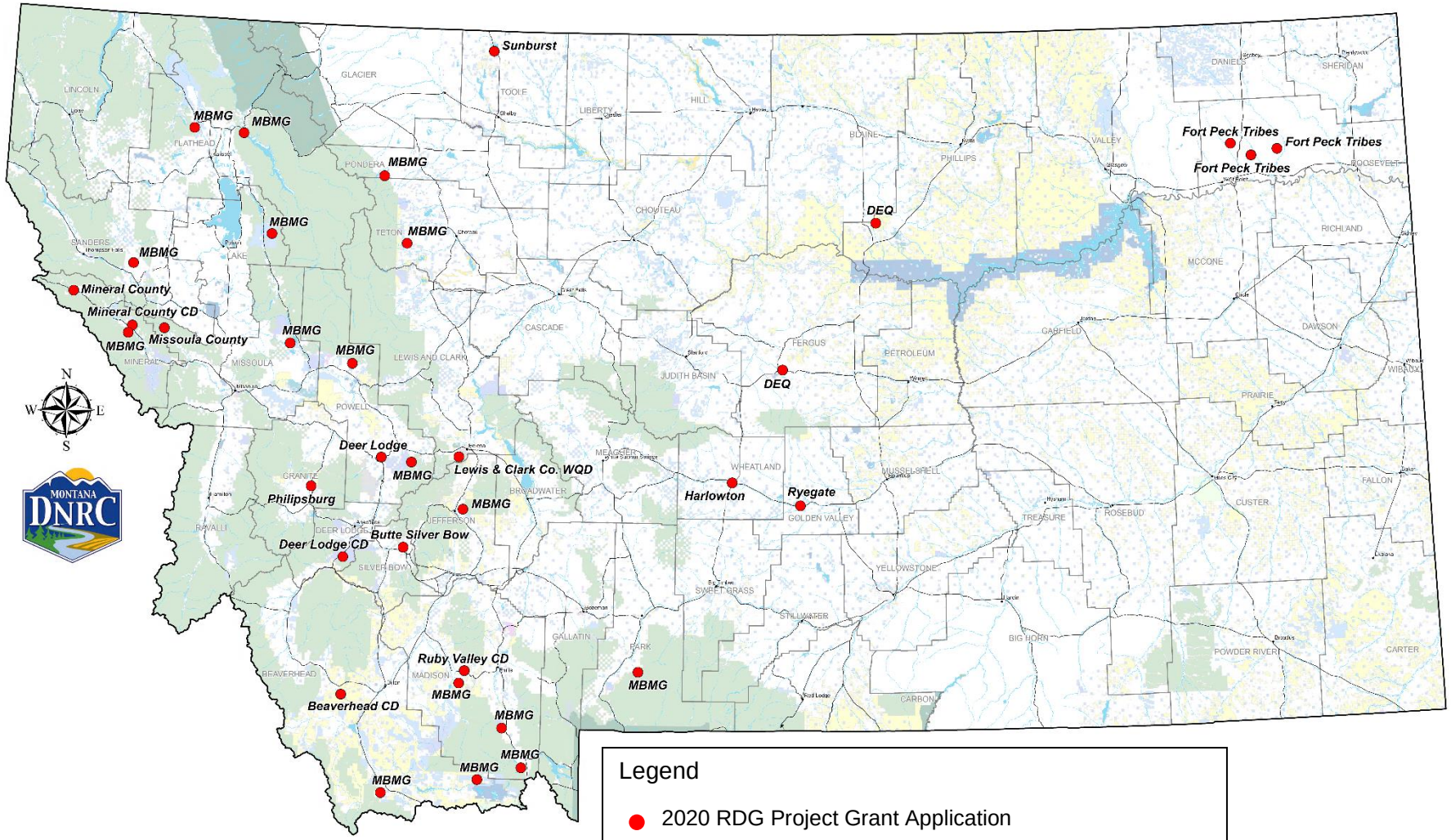
Note: The projects ranked 1, 2 and 3 are ranked based on a statutory requirement, “the department shall give priority to grant requests not to exceed a total of $800,000 for the biennium for abandoned mine reclamation projects” (90-2-1113 [3] MCA).

Italics indicates the project received a RDGP planning grant for the proposed project.

*Not recommended for funding.

**This application was removed from consideration by the applicant before ranking of the projects began.

Map 1. 2023 Biennium RDGP Project Grant Applications



CHAPTER II
Project Evaluations and Recommendations for the 2021 Biennium

This chapter combines summary evaluations of 17 projects submitted for funding consideration. The 16 projects recommended for funding are presented in the order of their ranking in Part 1 of this chapter. The cumulative requested amount for the projects is $5,802,155. Part 2 of this chapter contains other projects that were submitted for funding consideration.

To find any particular evaluation quickly, refer to the alphabetical listing of projects by the name of the applicant on page iii.

For projects recommended for Reclamation and Development Grant Program (RDGP) funding, “Total Project Cost” is the sum of “Other Funding Sources” plus the “Amount Requested.”

Part 1. Projects Recommended for Funding

Project No. 1

Applicant Name	Philipsburg, Town of	
Project Name	Wastewater Treatment System Improvements, Metals Contaminated Sludge Removal and Disposal	
Amount Requested	$ 429,000	
Other Funding Sources	$ 287,000	Applicant (Town Reserves)
	$ 36,000	Applicant (in-kind)
Total Project Cost	$ 752,000	
Amount Recommended	$ 429,000	

Project Summary
Wastewater lagoons in the Town of Philipsburg have been impacted by contamination from abandoned historic mines in the area. As a result, sludge in the lagoons contains elevated concentrations of metals. The excess sludge in the lagoons is impacting state waters through discharge of metals-laden sediment and reduced effectiveness of the treatment process. To mitigate the impact of mine waste on the lagoons and restore functionality of the wastewater treatment process, the sludge must be removed and properly disposed in a landfill or other appropriate repository. This project includes removal of approximately 19,500 cubic yards of metals-impacted sludge from the lagoons, drying at an onsite location, and transport and disposal of the dried sludge. Removal of the sludge will improve surface water quality, enhance aquatic and terrestrial habitat, and improve public health and safety.

Project History
In the late 1960s, a flood event washed metals-impacted mine tailings originating in the historic mining area above Philipsburg into the Town's sanitary sewer collection system where it was ultimately deposited in the wastewater treatment lagoons. The mine waste contains high concentrations of arsenic, lead, and zinc. Because of this flood event, the concentration of those metals in the sludge currently exceeds EPA ceiling limits for typical wastewater sludge disposal processes. This metals-impacted sludge impairs proper maintenance of the lagoons. The current volume of sludge is reducing the ability of the wastewater treatment process to meet State discharge requirements, which has a detrimental impact on water quality in Flint Creek. The Town of Philipsburg is currently under a State of Montana Department of Environmental Quality (DEQ) Administrative Order of Consent to remove sludge from the lagoons to improve effluent discharge quality.

Proposed Solution
Goals and Objectives
The primary project goal of the project is to improve water quality in Flint Creek by decreasing contaminants discharged from the lagoons. Removing sludge from the lagoons will reduce discharge of metals-laden sediment. The improved treatment effectiveness is expected to reduce effluent biological oxygen demand and total suspended solids.

Tasks or Activities
Phase 1 of the project will design, plan, and oversee drying bed construction, sludge removal, and sludge drying activities that will occur in summer and fall of 2020. This application requests funding for Phase 2 of the project to include the following tasks:

Task 1: Engineering
Consultant will produce planning documents, necessary drawings, and contract and bid documents; assist the Town with bid services and contract awarding; and provide construction oversight.

Task 2: Sludge Disposal and Site Restoration
Contractor will remove sludge from the drying site and dispose of sludge at the Missoula landfill and reclaim drying bed area through grading, adding topsoil, and seeding. Task 2 includes permitting and monitoring; mobilization; erosion and dust control; equipment rental and material purchases; landfill fees and testing; power service and electricity; contractor costs; in-kind labor; and contingency.

Task 3: Grant Administration and Reporting
Applicant will administer the grant and complete required reporting

Monitoring Plan
The monitoring plan was not clearly specified in the application. Project outcomes will be measured by removal and drying of the sludge, hauling it to the Missoula landfill, and restoration of the drying bed area to be verified by Town staff and the Engineer. The Town is required to monitor lagoon discharge as part of their Discharge Permit.

Public Benefits Assessment
The project will reduce mine-related impacts to surface water quality arising from treated water discharge to Flint Creek, enhance aquatic and terrestrial habitat, support increased public use, and improve public safety and welfare. The benefits of this project are certain and long-term and will contribute to a positive economic benefit through increased recreational opportunities and public use. The project is also expected to satisfy requirements of the DEQ Administrative Order of Consent issued to Philipsburg. The consequence of no action would be continued discharge to Flint Creek that does not meet water quality requirements, decreased quality of fish and wildlife habitat, potential negative effects on human health, and non-compliance with the DEQ Administrative Order of Consent. The local economy will benefit from improved water quality and reduced impact to rate payers.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Task 1: Engineering	$17,200	$10,000	**$27,200**
Task 2: Sludge Removal and Site Restoration	$394,600	$313,000	**$707,600**
Task 3: Grant Administration and Reporting	$17,200	$0	**$17,200**
Total	**$429,000**	**$323,000**	**$752,000**

The proposed budget for this project is reasonable and is based on viable assumptions on the volume and nature of material to be removed and disposed, the time required to complete the project, and the cost of disposal. The project assumes that disposal in a permitted landfill will be required; however, if less expensive options are available at the time of disposal, such as the Black Pine Mine Repository, cost savings of up to approximately $200,000 may be realized.

Funding Recommendation
DNRC recommends grant funding of $429,000 upon DNRC approval of the project scope of work, administration, budget, and funding package. If possible, the applicant should seek to dispose of sludge at the Black Pine Mine to realize cost-savings benefits for the project.

Project No. 2

Applicant Name	Mineral County Conservation District	
Project Name	Flat Creek Dispersed Tailings Removal and Restoration	
Amount Requested	$ 219,960	
Other Funding Sources	$ 899,295	United States Forest Service
	$ 23,950	Trout Unlimited
Total Project Cost:	$ 1,143,205	
Amount Recommended:	$ 219,960	

Project Summary

The proposed project is located within the Flat Creek Iron Mountain Mine Superfund Site (Site) and will reclaim and restore 1.6 miles of Flat Creek by removing approximately 19,000 cubic yards of tailings from the streambank and floodplain and disposing of them in the existing Wood Gulch repository. Flat Creek flows into the Clark Fork River at the town of Superior and has a history of extensive mining in the drainage. Historical mining and flooding have distributed heavy metal contaminated tailings along Flat Creek and the surrounding floodplain which have contributed to the degradation of Flat Creek. Removal of the tailings and reconstruction and restoration of the stream channel and floodplain will return the area to a naturally functioning stream corridor, improve water quality, reestablish aquatic habitat, improve terrestrial habitat, and provide the public with safe recreational opportunities.

Project History

Extensive mining within the Flat Creek drainage occurred around the turn of the century and tapered off by the 1950s. The associated waste rock and tailings were deposited along the nearby hillslopes and floodplains near Flat Creek. In addition to older flood events that initially distributed tailings along four miles of Flat Creek, contaminants have redistributed as recently as August 2000 following a 9,000-acre forest fire and subsequent runoff. The Environmental Protection Agency (EPA) placed the site on the Superfund Program's National Priorities List in 2009. Ownership along the impacted reaches of Flat Creek consist of private lands, National Forest System lands administered by the United States Forest Service (USFS), and former American Smelting and Refining Company (ASARCO) lands now managed by the Montana Department of Environmental Quality (DEQ) for the Montana Environmental Trust and EPA. In 2017, DEQ implemented a removal action on a segment of Flat Creek located upstream of this proposed project. The tailings were excavated and placed into the nearby Wood Gulch repository. This project is on the segment of Flat Creek on USFS land directly downstream of the DEQ removal action.

Proposed Solution

Project Goals and Objectives

The goals of the project are to 1) reduce or eliminate human health and ecological risks associated with metals contamination, 2) reduce the potential that floodplain tailings will contribute contaminated sediment and metals to Flat Creek and the Clark Fork River, and 3) ensure that removal does not obstruct future recreational opportunities at the Site. These goals will be accomplished by the following objectives:

Objective 1: Construct Wood Gulch Repository Cell to prepare for mine tailings placement.

Objective 2: Excavate and remove mine tailings and contaminated soils. Haul and place contaminants in repository cell.

Objective 3: After removal actions, establish naturally functioning and appropriate channel type, including stream planform, dimensions, gradient, bedform, and floodplain conditions.

Objective 4: Create conditions along Flat Creek that sustain diverse and robust vegetation, wetlands, improve stability, and improve fish and wildlife habitat.

Tasks or Activities

Task 1: Engineering, Construction Oversight, and Management

Bid documents for the project have been prepared. Construction oversight will occur throughout the removal and restoration process.

Task 2: Tailings Removal

This task includes mobilization and demobilization costs of equipment, silt fence, slash filter, fiber roll, dust control, clearing and grubbing, clean backfill, excavation of tailings, equipment rental, and temporary traffic control. Contractor will clear and grub timber, brush, limbs, stumps, root wads, and other debris from the Site. Portions of the Site, including repository construction area, staging and stockpile areas, road construction areas, and other areas disturbed by the work are covered with trees, vegetation and/or debris that must be removed to complete the work. Contractor will excavate tailings material and load, haul and stockpile the excavated tailings material in the Wood Gulch Repository. Clean backfill material will be transported and placed within the tailings excavation areas and to existing floodplain topography prior to tailings excavation and/or to the limits and elevations designated. Periodic soil sampling will occur throughout the mine tailings removal process. The samples will be sent to a lab for analysis to determine proper cleanup levels have been achieved.

Task 3: Streambank Restoration

As soon as possible following removal of discrete tailings adjacent to Flat Creek, the contractor will re-construct impacted streambanks and construct impacted floodplain and stream grade control. Stream banks, floodplain, and constructed wetlands will be revegetated using native vegetation. Access roads and haul routes will be decompacted and reclaimed. The contractor will straw, seed, and mulch disturbed areas and remove best management practices (BMPs) where appropriate.

Task 4: Repository

Repository work will include construction and closure of an additional cell at the existing Wood Gulch Repository Site. The Lolo National Forest is working with the Montana DEQ to design and implement the construction and closure of the repository cell.

Monitoring Plan

Monitoring will include the continued sampling of water, soil, and tailings throughout the project duration to ensure clean up objectives are met. Post project monitoring will include photopoint documentation, vegetation transects, and stream channel stability analysis. Trout Unlimited and Lolo National Forest personnel will be responsible for overall monitoring coordination and reporting.

Public Benefits Assessment

Heavy metal contaminated tailings along the streambank and within the floodplain of Flat Creek are contributing to the degradation of surface water quality and aquatic and terrestrial habitat and pose a health and safety risk to the public. Contaminants in tailings are present at concentrations that exceed recreational cleanup guidelines and surface water quality standards. If the tailings are left in place, water quality in Flat Creek will continue to degrade and recreational users will continue to be exposed to heavy metal contaminants. This project will build upon already completed reclamation and restoration efforts in an upstream segment of Flat Creek and restore natural flow patterns within this segment of Flat Creek. This project will improve water quality and return the stream and floodplain back to a naturally functioning stream corridor that will provide improved aquatic and terrestrial habitat. Montanans will benefit from eliminating exposure to contaminated tailings and providing an area for safe and healthy recreational opportunities. The local economy will benefit with lodging, food, and supplies being purchased locally. Some temporary construction jobs for residents may also be created.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Task 1: Engineering, Construction Oversight, and Management	$30,000	$30,000	**$60,000**
Task 2: Tailings Removal	$124,500	$312,363	**$436,863**
Task 3: Streambank Restoration	$28,800	$84,860	**$113,660**
Task 4: Repository	$0	$374,000	**$374,000**
Administration	$18,330	$42,400	**$60,730**
10% Activity Contingency	$18,330	$79,622	**$97,952**
Total	**$219,960**	**$923,245**	**$1,143,205**

The budget is presented at the task level, appears reasonable, and is clearly presented.

Funding Recommendation

DNRC recommends grant funding of $219,960 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 3

Applicant Name	Missoula County	
Project Name	Ninemile Creek Placer Mine Reclamation, Phase 6	
Amount Requested	$ 351,000	
Other Funding Sources	$ 25,000	United States Forest Service
	$ 45,300	Trout Unlimited
	$ 452,182	Federal Emergency Management Agency
	$ 20,000	Landowners
Total Project Cost	$ 893,482	
Amount Recommended	$ 351,000	

Project Summary
The project is the sixth phase of a cooperative effort by Trout Unlimited, the Lolo National Forest, Montana Department of Environmental Quality (DEQ), and Missoula County to clean up abandoned mine sites in the Ninemile Creek watershed. The project will restore stream and floodplain functions to a 3,700-foot-long reach (Reach 5) of Ninemile Creek, a tributary to the Clark Fork River near Huson, Montana. The primary goals of the project are to improve water quality, reclaim mining impacts, and reconnect a previously damaged tributary. Extensive placer piles will be regraded and used to fill settling ponds to create a more uniform floodplain surface. The floodplain will be shaped to incorporate microtopography and woody debris, then revegetated with native plants. The confluence of Ninemile Creek and Soldier Creek will be constructed to provide aquatic connectivity while the Ninemile Creek channel will be reconstructed through the reclaimed floodplain and will include diverse habitat for fish and wildlife.

Project History
Ninemile Creek was placer mined with dragline dredges, hydraulic mining, and sluicing from the 1800s through the late 1940's. Mining activity significantly altered the landscape, leaving behind large piles of placer mine tailings up to 40 feet tall and obliterating the stream channel and floodplain. Large settling ponds dot the landscape and riparian vegetation is insufficient to maintain bank stability, provide shade, or filter out sediments and other pollutants from the stream. Nine other mine sites in the Ninemile Creek watershed have already been reclaimed, which were funded in part by DNRC RDGP grants. This project will build on previous reclamation work by connecting restored sections of Ninemile Creek and adjacent tributaries.

Proposed Solution
Project Goals and Objectives
The goals of the project are to improve water quality by reclaiming mining impacts on Ninemile Creek and reconnect tributaries in Ninemile Creek. These goals will be accomplished by the following objectives:

Objective 1: Remove and regrade mining spoils and settling ponds in the Ninemile Creek floodplain throughout Reach 5.

Objective 2: Establish naturally functioning and appropriate channel type, including stream planform, dimensions, gradient, bedform, and floodplain conditions.

Objective 3: Create conditions that sustain diverse and robust vegetation, wetlands, improve stability, and improve fish and wildlife habitat.

Objective 4: Reconnect Soldier Creek to Ninemile Creek by regrading mine waste piles and establishing naturally functioning stream and floodplain connections at the confluence area.

Tasks or Activities

Task 1: Engineering, Design, and Oversight

Finalize engineering drawings and design specifications. Prepare contracts and interagency/landowner agreements to authorize reclamation activities. Prepare relevant permits. Complete baseline survey and staking. Oversight of construction throughout the project.

Task 2: Stream Restoration

Excavate, load, haul, and place placer/dredge mine tailings in adjacent dredge cuts. Finish rough grading of floodplain. Salvage native vegetation and stockpile on site before haul activities. Rough grading and shaping of stream channel alignment. Enhance existing historic floodplain and low terrace microtopography. Construct 3,700 linear feet of graded channel and constructed riffle using on-site screened alluvium. Construct large woody debris jams, and/or log and rock steps, incorporating imported 18"-24" boulders and on-site screened alluvium. Construct 2,200 linear feet of vegetated wood and brush fascine along riffle margins.

Task 3: Revegetation

Revegetate streambanks using clump and sod transplants. Spread native grass and wetland seed on disturbed areas where appropriate. Revegetate floodplain using nursery stock and transplants.

Task 4: Mobilization and Demobilization

Site preparation. Improve road and haul routes to facilitate equipment mobilization. Construct clearwater diversions for stream channel and best management practices (BMPs). Decommission clear water diversion. Decompact and reclaim access roads and haul routes. Straw and mulch disturbed areas.

Monitoring Plan

Trout Unlimited will monitor the following parameters under the frequency and terms listed below. Monitoring reports will be provided to project partners and funding agencies.

Parameter	Frequency	Location	Timeframe	Term
Bank Erosion	Bi-annual multiple sites	Multiple sites through project reach	Summer	4 years
Fish Populations	Bi-annual 3 sites	1 site each above, within, and below project section	Summer	4 years
Temperature	Annual 2 sites	1 site each above and below project section	Summer and Fall	4 years
Vegetation	Annual 3 sites	Multiple sites through project reach	Summer	4 years

Public Benefits Assessment

The project will repair a significant amount of damage to Ninemile Creek and its floodplain caused by historic placer mining. Restoration will be sufficient to restore stream and floodplain function. When completed, the project will improve floodplain function which will increase water storage reducing the severity of downstream flooding and erosion. The project will also preserve or improve water quality and improve terrestrial and aquatic habitat. The impacts to be remediated occurred long ago, and are not generally worsening, but no action would permit chronic harms to continue accruing. Public health and safety will benefit by elimination of potentially dangerous, tall eroding slopes. The number of resources affected are multiple and benefits to Ninemile Creek and the larger watershed will be substantial. The local economy will benefit through local commerce and spending associated with project implementation. The regional economy will benefit through improved water quality, aesthetics, and recreational opportunities. Project benefits are certain and expected to be long-term.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Task 1: Engineering, Design, and Oversight	$50,000	$112,000	**$162,000**
Task 2: Stream Restoration	$220,000	$234,220	**$454,220**
Task 3: Revegetation	$7,500	$25,000	**$32,500**
Task 4: Mobilization and Demobilization	$15,000	$84,400	**$99,400**
Administration	$29,250	$41,300	**$70,550**
10% Contingency	$29,250	$45,562	**$74,812**
Total	**$351,000**	**$542,482**	**$893,482**

The project is a continuation of previous work that has been successfully scoped, costed, and implemented. Gross costs provided were comparable to similar projects in other watersheds.

Funding Recommendation

DNRC recommends grant funding of $351,000 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 4

Applicant Name	Harlowton, City of	
Project Name	Contaminated Soils and Free Product Removal at the Harlowton Roundhouse in Harlowton, MT, Phase 4	
Amount Requested	$ 500,000	
Other Funding Sources	$ 30,332	EPA Brownfields Grant (DEQ 128a)
	$ 1,215	City of Harlowton
	$ 500,000	EPA Brownfields Revolving Loan Fund Grant
Total Project Cost	$ 1,031,547	
Amount Recommended	$ 500,000	

Project Summary

The City of Harlowton will address the remaining metals and petroleum-impacted soils and floating diesel at the bankrupt Chicago Milwaukee St. Paul Railroad's Harlowton Roundhouse Facility (Facility). The site is located near surface water sources that feed directly to the Musselshell River. Petroleum impacts have been observed on surface water during high water flood events. Two previous excavations have removed approximately 13,600 cubic yards of contaminated soil. This phase will remove additional contaminated soil and allow restoration of the historical wetlands located in the heart of the contaminated railyard. This project will improve soil and water quality, restore a historic wetland, and mitigate flood impacts along the Musselshell River.

Project History

The Harlowton Roundhouse, adjacent to the Musselshell River, operated as a railroad repair and refueling operation from 1900 to 1979. Overfills and leaking fuel lines at the facility contaminated soil and groundwater over approximately 5 acres of the railyard. Since 2015, multiple investigations led to the excavation of 8,000 cubic yards of contamination in 2016 and 5,600 yards of contamination in 2019. The discovery of asbestos debris in the surficial overburden covering the largest source of petroleum contamination postponed part of the planned excavation. Additional investigation of potential source areas was conducted in 2018. Approximately 11,500 cubic yards of impacted soil remain at the site and petroleum product floating on the groundwater surface occurs across an area of approximately 5 acres. This fourth phase of remediation will permanently remove an estimated 11,500 cubic yards of contaminated soil and free product at the Facility.

Proposed Solution

Goals and Objectives

The goal of the project is to restore the following impacted natural resources including surface and subsurface soil, the regional aquifer, adjacent and historic wetlands, a tributary of the Musselshell river, and aquatic and terrestrial habitat. The project objectives are to 1) excavate contaminated soil and petroleum product from the site and haul it to an off-site landfarm where it will be treated so that it can be returned to beneficial use; 2) treat soil beneath historical rail structures by injecting a chemical oxidant; 3) prepare the site for wetland restoration; and 4) conduct soil, groundwater, and surface water monitoring to evaluate effectiveness of the remedial actions.

Tasks or Activities

Task 1: Preliminary Coordination and Progress Reporting

Activities include coordination between the City, Montana Department of Environmental Quality (DEQ), and DNRC; preparation of monthly status reports; and permit applications.

Task 2: Development of a Scope of Work

The scope of work will include a detailed plan for soil removal and treatment, confirmation sampling, oxidant injection, and groundwater monitoring.

Task 3: Bid and Specification Package Preparation
A bid and specification package for soil excavation and site regrading will be developed.

Task 4: Subcontract Procurement
Subcontracted services will be procured.

Task 5: Excavation and Disposal of Contaminated Soils
Excavation of all accessible soils exceeding DEQ action levels and disposal at the nearby landfarm.

Task 6: Chemical Oxidant Injection
Chemical oxidants will be injected to treat inaccessible impacted soil located beneath historically significant rail facility structures.

Task 7: Final Remedial Activities
Confirmation samples will be collected to document post-cleanup conditions. Physical hazards will be removed and the site regraded.

Task 8: Project Reporting
A corrective action report will be prepared describing the results of the remedial actions and confirmation sampling.

Monitoring plan
Soil, groundwater, and surface water confirmation sampling will occur once all remedial actions have been completed. This will include one round of both high and low groundwater monitoring. Sampling will determine the effectiveness of the remedial actions on affected natural resources (soils, groundwater, and surface water).

Public Benefits Assessment
This project repairs damage from petroleum hydrocarbon releases to soil and groundwater incurred during operation of the former Milwaukee Roundhouse Comprehensive Environmental Cleanup and Responsibility Act (CECRA) Facility. The project permanently removes contaminants from the floodplain of the Musselshell River resulting in conservation of soil, water, vegetation, and fish/wildlife resources and protection of public health, safety, and welfare. Excavated soil will be treated in a landfarm, after which it can be returned to beneficial use. The local community will benefit through construction jobs as well as development of a regional nature trail/wetland wildlife viewing park. The regional economy will benefit through improved water quality, aesthetics, and recreational opportunities. Restoration of the project area to a wetland will improve flood retention and reduce sediment delivery down river.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Task 1: Preliminary Coordination and Progress Reporting	$6,222	$0	**$6,222**
Task 2: Development of a Scope of Work	$5,301	$0	**$5,301**
Task 3: Bid and Specification Package Preparation	$7,178	$0	**$7,178**
Task 4: Subcontract Procurement	$8,809	$0	**$8,809**
Task 5: Excavation and Disposal of Contaminated Soils	$275,458	$250,000	**$525,458**
Task 6: Chemical Oxidation Injection	$150,043	$0	**$150,043**
Task 7: Final Remedial Activities	$39,350	$250,000	**$289,350**
Task 8: Project Reporting	$7,639	$0	**$7,639**
Administration	$0	$31,547	**$31,547**
Total	**$500,000**	**$531,547**	**$1,031,547**

The project budget is adequate and comparable to prior phases. Estimated costs appear reasonable for these tasks.

Funding Recommendation
DNRC recommends grant funding of $500,000 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 5

Applicant Name	Mineral County	
Project Name	Interim Remedial Action at Milwaukee Road – Haugan State Superfund Facility	
Amount Requested	$ 499,324	
Other Funding Sources	$ 21,482	Montana Department of Environmental Quality
	$ 4,400	Mineral County
Total Project Cost	$ 525,206	
Amount Recommended	$ 499,324	

Project Summary

The Milwaukee Road – Haugan State Superfund Facility (Facility) is 40-acres in a sparsely populated area near Haugan, Montana along the St. Regis River. The Route of the Olympian Recreational Trail runs directly though the Facility near an open pit of fuel oil waste. The fuel oil pit contains a very viscous, asphaltic material, and solid waste that poses hazard to people, pets, and wildlife through risk of direct contact with petroleum hydrocarbons. The pit is also a potential source of localized groundwater and surface water contamination. The applicant proposes to use these DNRC RDGP funds to excavate and remove fuel oil and soil contamination associated with the fuel oil pit, eliminating the risks threatening human health and the environment.

Project History

The Milwaukee Road – Haugan State Superfund Facility is an abandoned railyard that operated from approximately 1910 until 1980. Around 1910, use of coal and wood in steam engines was switched to fuel oil to heat engine boilers. A 1989 preliminary assessment by the United States Environmental Protection Agency (EPA) indicated possible contamination. A site investigation in 1990 by the Montana Department of Environmental Quality (DEQ) found elevated levels of petroleum hydrocarbons, volatile organics and semi-volatile organics in onsite soil, sediment, and sludge. The CECRA (Comprehensive Environmental Cleanup and Responsibility Act) Program ranked the site a high priority because of extensive soil and sludge contamination and uncontrolled facility access. In 1999, an estimated 150-gallon underground storage tank was removed from the site under DEQ oversight. DEQ inspected the site in both 2018 and 2019 and found that most of the earlier discovered environmental issues, including the open fuel oil pit, remained.

Proposed Solution

Project Goals and Objectives

The goals of the project are to 1) mitigate direct contact risk to people and animals posed by the open pit of fuel oil and contaminated soil and 2) eliminate a source of groundwater and potential surface water contamination from the Facility. The objective is to remove the fuel oil waste and contaminated soil present at the Facility and backfill the area with clean fill.

Tasks or Activities

Task 1: Monthly Reporting and Project Coordination

Applicant will schedule and coordinate with DEQ and develop an approved health and safety plan.

Task 2: Developing an Interim Action Scope of Work

This task includes performing a laser induced fluorescence (LIF) investigation; developing a scope of work to excavate and dispose of fuel oil and contaminated soil, perform confirmation sampling, and backfill excavated areas with clean fill; measure free product thicknesses (if existing) and perform groundwater sampling; obtain necessary permits; clean, dispose, or repurpose any tanks or waste barrels; sample any fill materials prior to use; and obtain approval of a weed control plan.

Task 3: Bid Preparation and Procurement
A bid and specification package for surveys and removal of contaminated soils, sludge, and debris will be developed.

Task 4: Implementation of Interim Action Scope of Work
Implement approved activities from Task 2. This will include excavation of an estimated 1,930 cubic yards of contaminated soils and fuel oil from the fuel pit and hauling to a disposal facility in Missoula, confirmation sampling, backfilling, and revegetation.

Task 5: Closeout and Final Reporting
An interim action construction completion report will describe the results of the excavation, disposal, and confirmation sampling, backfilling, revegetation, and weed control.

Monitoring Plan
The contractor will perform soil confirmation once removal activities have been completed and compare samples with DEQ-approved interim action levels listed in the scope of work.

Public Benefits Assessment
The project will remove contaminated fuel oils and soil associated with railroad activity thereby repairing environmental damage to the area adjacent to the St. Regis River and a public recreational path. Once the contamination is removed and clean backfill brought in, the benefits to the area are certain and long term. Removal of contaminants from the project area will result in preservation of soil and water quality and protection of public health, safety, and welfare. The project will create short-term jobs for engineering consultants, technicians, and site construction operators, and laborers. The economic benefits include short term remediation jobs and associated support of local businesses.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Task 1: Monthly Reporting and Project Scheduling and Coordination	$6,754	$0	**$6,754**
Task 2: Develop an Interim Action Scope of Work	$6,182	$0	**$6,182**
Task 3: Bid and Subcontract Preparation and Procurement	$14,190	$0	**$14,190**
Task 4: Implementation of Interim Action Scope of Work	$465,560	$0	**$465,560**
Task 5: Closeout and Final Reporting	$6,638	$0	**$6,638**
Administration	$0	$25,882	**$25,882**
Total	**$499,324**	**$25,882**	**$525,206**

The budget presented in the application is reasonable and complete; however, additional expense for LIF during removal has not been fully justified since the field screening during excavation would produce real time information regarding removal completeness.

Funding Recommendation
DNRC recommends grant funding of $499,324 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 6

Applicant Name	Powell County	
Project Name	Milwaukee Roundhouse Area Remediation, Phase 2	
Amount Requested	$ 500,000	
Other Funding Source	$ 5,000	Applicant
Total Project Cost	$ 505,000	
Amount Recommended	$ 500,000	

Project Summary
Historical railroad operations at the former Milwaukee Roundhouse Facility (MRH) in Deer Lodge, Montana released diesel and other contaminants impacting soil, groundwater, surface water, and aquatic habitat. This project will continue ongoing efforts by Powell County to remediate contamination at the MRH Facility. The proposed project will remove at least 2,800 cubic yards of metals-contaminated soil. Removal of metals-contaminated soils will repair, reclaim and mitigate damage to soil and groundwater resources along the Clark Fork River.

Project History
The MRH Facility once served as headquarters for the Milwaukee Railroad's Rocky Mountain Division and included a railroad roundhouse and other maintenance structures. The project site encompasses approximately 14.5 acres of former MRH railway industrial area. It is situated west of, and immediately adjacent to, the Deer Lodge City limits and abuts the Clark Fork River (east and north) and Tin Cup Joe Creek (west). Locomotive repair and refueling operations conducted at the former MRH Facility resulted in widespread soil and groundwater contamination. Surface and subsurface soils, groundwater, wetlands, and surface water are all affected by the historic contamination that occurred at the site, and still require cleanup. The Montana Department of Environmental Quality (DEQ) has classified the site as a high priority for cleanup under the State's Comprehensive Environmental Cleanup and Responsibility Act (CECRA). The site has sat vacant and unusable since the bankruptcy of the Chicago-Milwaukee Railroad Company in 1980. In 2005, Powell County took the title to the MRH property and began pursuing site-cleanup funding to minimize the potential for human exposure to the onsite hazardous materials, and to repair the environmental damage to natural resources.

Proposed Solution
Goals and Objectives
The goal for the project is to remove and securely dispose of at least 2,800 cubic yards of metals-contaminated soil.

Tasks or Activities
Task 1: Engineering, Construction Oversight, Weed Control and Seeding, and Monitoring
Task 1 incorporates personnel costs from several parts of the scope of work described in the application. The final design and engineering will include a topographic survey, engineering design and specifications, engineers cost estimate and permitting. The County will advertise for and obtain competitive bids in selection of a contractor. The County will oversee work and prepare a completion report to document the remediation activities and confirmation sampling. Weed control and seeding are included in Task 1. This task also includes monitoring as described in the monitoring plan below.

Task 2: Excavation and Disposal
Excavated soils will be disposed of at the Powell County Landfill, if possible, or the Butte-Silver Bow Landfill.

Task 3: Backfill
The source of the backfill has yet to be determined. This task includes backfill for the excavated area.

Task 4: Topsoil, Seeding, Barrier Fence, Water Truck and Silt Fence

This task includes dust control during construction, best management practices (BMPs) and revegetation (topsoil, seeding).

Task 5: Confirmation Sampling and Testing
Confirmation sampling will take place to ensure the extent of the contamination has been captured and removed. Confirmation sampling and work plans will be developed and approved by the DEQ prior to work commencing.

Task 6: Mobilization
Mobilization and demobilization shall include all activities and associated costs for transportation of contractor's personnel, equipment, and operating supplies to and off of the site; and other necessary general facilities for the contractor's operations.

Monitoring Plan
Confirmation samples will be collected from the sides and bottom of the excavation to ensure contamination is reduced to acceptable concentrations. DEQ will review and approve the sampling methods and number of confirmation samples.

Public Benefits Assessment
The project repairs damage from metals and petroleum hydrocarbon releases to soil and groundwater incurred during operation of the MRH facility. The Facility is adjacent to residential properties and downtown Deer Lodge and the Clark Fork River and Tin Cup Joe Creek. While the site is fenced, it has not stopped trespassing. Contaminated surface soil poses a health threat to those accessing the property, creating a liability for the County. The project will place contaminated soil in a secure landfill, thereby eliminating exposure pathways for human health and the environment. Removal of contaminated soil will directly benefit soil, groundwater, and surface water resources. The project will indirectly benefit aquatic and terrestrial habitat that rely on ground and surface water resources. The economic benefits include short term remediation jobs and project-associated support of local businesses.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Task 1: Engineering, Construction Oversight, Weed Control and Seeding, and Monitoring	$96,000	$0	**$96,000**
Task 2: Excavation and Disposal	$154,000	$0	**$154,000**
Task 3: Backfill	$51,000	$0	**$51,000**
Task 4: Topsoil, Seeding, Barrier Fence, Water Truck and Silt Fence	$41,000	$0	**$41,000**
Task 5: Confirmation Sampling and Testing	$69,000	$0	**$69,000**
Task 6: Mobilization	$25,000	$0	**$25,000**
Contingency	$52,000	$0	**$52,000**
Administration	$12,000	$5,000	**$17,000**
Total	**$500,000**	**$5,000**	**$505,000**

The proposed budget was not outlined by the tasks described in the scope of work section of the application. The project contains excessive costs for engineering design and confirmation sampling when compared to the construction costs.

Funding Recommendation
DNRC recommends grant funding of $500,000 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 7

Applicant Name	Montana Tech – Montana Bureau of Mines and Geology	
Project Name	Modernization of Montana's Regional Seismic Network	
Amount Requested	$ 499,739	
Other Funding Source	$ 345,511	Applicant
Total Project Cost	$ 845,250	
Amount Recommended	$ 499,739	

Project Summary

The Montana Bureau of Mines and Geology (MBMG) operates the Montana Regional Seismic Network (MRSN) to monitor, record, and analyze seismic activity across Montana. State and federal agencies and engineers use MRSN earthquake history data to protect critical infrastructure and natural resources downgradient of 197 high-hazard and 201 significant-hazard dams and associated reservoirs. Data from the MRSN are used to construct state and national probabilistic earthquake hazard maps. Dam safety engineers also use MRSN data to prioritize inspections at Montana's dams following major earthquakes. Properly designed and maintained dams both ensure public safety and protect downstream resources, including irrigation systems, agricultural land and production, and aquatic and terrestrial habitat. The work proposed here fills a crucial statewide need and includes modernization of 12 seismic stations in the MRSN. These will replace obsolete analog instrumentation, transitioning the network to a total of 20 optimally placed, modern, digital, and strong motion stations. The work will improve coverage of Montana's seismically active regions, ensure the reliability of the network, and the MBMG's capacity to sustain and efficiently operate it into the future.

Project History

The MRSN was established in 1980 by the MBMG Earthquake Studies Office. The MRSN has been using FM radio telemetry since its formation in 1980 and continues its use to the present. These analog telemetry systems require line-of-sight data transmission to relay signals from station to station to the Earthquake Studies Office. Station locations were limited by the line-of-sight requirement, resulting in many stations located at high elevations on remote peaks where difficult access and harsh weather conditions hamper maintenance and repair. Modern communication technology, such as cellular or internet-based data transmission, allows stations to be located optimally to target seismically active areas, because line-of-sight back to the recording center is not required. Modern digital stations provide better, more high-quality, on-scale seismic records over a broad range of frequencies that are essential for engineering design, emergency response, and research. Upgrading these stations will provide Montana with the station density and data quality necessary to sustain the MRSN and support the protection of Montana's infrastructure, communities, and economic assets.

Proposed Solution

Project Goals and Objectives

The goal of this project is to modernize and upgrade 12 analog stations because the parts needed to maintain the older analog systems are no longer readily available.

Tasks or Activities

Task 1: Project Management and Administration

During this task the project manager will 1) make final site selections from 17 potential sites based on ideal coverage of seismic regions and site considerations; 2) obtain or update permits and/or access agreements from site owners; 3) solicit bids and award contract for equipment installation; 4) solicit bids and purchase seismic equipment and site infrastructure and power systems; 5) configure, test, and install equipment; 6) optimize data recording on MBMG computer systems; 7) survey stations and update GIS databases with station information; 8) oversee, manage, track, and report budget and project progress.

Task 2: Seismic Equipment

Purchase seismic equipment for the project.

Task 3: Cell Modems
Purchase cell modems for the project.

Task 4: Installation
Procure contracted services to install systems at 12 locations.

Task 5: Power Systems and Miscellaneous Supplies
Purchase of power systems and miscellaneous supplies.

Task 6: MBMG Travel
MBMG travel to the site locations to oversee installation and to initiate and calibrate equipment.

Monitoring Plan
The project will be deemed successful when equipment is installed and operable at each station with real-time data transmission and recording. MBMG will manage day-to-day aspects of the project and will be responsible for monitoring progress at each site.

Public Benefits Assessment
The MSRN project fits the definition of Crucial State Need because of the significant amount of seismic activity throughout Montana can impact natural resources throughout the state. Data from the MSRN can be used to both prevent severe and unacceptable damage to natural resources from dam failures. The data from the MSRN network conserves natural resources by helping to prevent failures of impounded water or mine tailings. Impoundment failures could result in significant loss of resources in the breach area, including water, soil, vegetation, and aquatic and terrestrial habitat. In addition, the MSRN project protects public health and safety by providing the data for proper design and management of many hazardous structures, petroleum tanks, oil and gas pipelines, highway bridges, and railroad overpasses.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Task 1: Project Management and Administration	$0	$345,511	**$345,511**
Task 1: Seismic equipment	$276,000	$0	**$276,000**
Task 2: Cell modems	$7,800	$0	**$7,800**
Task 3: Installation	$156,000	$0	**$156,000**
Task 4: Power systems	$48,000	$0	**$48,000**
Task 5: MBMG travel	$6,939	$0	**$6,939**
Task 6: Miscellaneous supplies	$5,000	$0	**$5,000**
Total	**$499,739**	**$345,511**	**$845,250**

The budget is thorough and appears reasonable.

Funding Recommendation
DNRC recommends grant funding of $499,739 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 8

Applicant Name	Montana Department of Environmental Quality	
Project Name	Landusky Swift Gulch High Flow Treatment System and Stream Rehabilitation	
Amount Requested	$ 411,199	
Other Funding Sources	$ 4,978	Applicant
Total Project Cost	$ 416,177	
Amount Recommended	$ 411,199	

Project Summary

This project is part of a cooperative effort by Montana Department of Environmental Quality (DEQ), United Stated Bureau of Land Management (BLM), and the Fort Belknap Indian Community to remedy mining impacts in the Swift Gulch watershed. The project will install an acid mine drainage treatment system and improve stream and floodplain functions to 3,000 feet of Swift Gulch, a tributary of Little Peoples Creek, near Hays, Montana. The treatment system will be used during high flow runoff or unplanned outages at the existing Swift Gulch water treatment plant. Hydro-mulch and seed will be applied to unvegetated areas, and log dams and rock weirs will be installed in the creek to improve sediment retention and reduce stream velocities. These stream improvements will reduce iron staining from migrating onto the Fort Belknap Indian Reservation and improve water quality in Swift Gulch. This project will also improve aesthetics of the surrounding terrain by improving riparian features such as planting native grasses, willows, and trees, along with the reclamation of sludge-drying beds.

Project History

Mining began in the Little Rocky Mountains in the 1880s and persisted until the 1990s, including a combination of placer and hard rock mining methods. The placer operations left sections of the Swift Gulch channelized with large piles of gravel adjacent to the stream, causing the stream to flow subsurface during portions of the year. Open pit mining operations were conducted from 1979-1996. The Pegasus Gold Corporation declared bankruptcy in 1998, leaving behind a disturbed area with inadequate reclamation bonds for remediation or water treatment. The open pit areas create oxidizing conditions that generate acid mine drainage which discharges into Swift Gulch resulting in an iron-stained stream channel. Partial backfill of the open pit areas has led to some improvements in water quality, but acid mine drainage continues to discharge into Swift Gulch. In 2008, a water treatment system was installed to capture and treat Swift Gulch water. The system presently operates as a high-density sludge plant which requires the use of four drying beds. The current treatment system operates effectively during low flow conditions, but high flow events create scouring that transports iron precipitates downstream into an area with high recreational use and cultural significance.

Proposed Solution

Goals and Objectives

The primary goal of this project is to improve water quality and riparian health by addressing anthropogenic impacts on Swift Gulch Basin. The objectives to achieve this goal are to: 1) increase water treatment capacity during high flow events, 2) restore impacted areas of Swift Gulch and 3 stabilize the sludge drying beds to reduce erosion.

Tasks or Activities

Task 1: Data Collection, Investigation and Final Design

This task includes data collection and field investigation necessary to complete the final design of both the treatment system and stream restoration.

Task 2: High Flow Treatment System Construction

The automated high flow treatment system will involve the installation of a building and two 8,000 gallon tanks for storage of sodium hydroxide solution. A pipeline will be installed to the upper capture system, which will deliver caustic solution via an automated system during high flow events. The treated water will

enter the existing sediment retention structure where precipitated metals and sediment can accumulate for disposal when water levels subside.

Task 3: Stream Rehabilitation
Approximately 8,000 linear feet of the Swift Gulch channel will be restored with drop structures and hardened banks using native materials (boulders, rock weirs, logs) to increase hydraulic retention time and reduce stream bank. The bank of the sludge drying beds will be stabilized to prevent erosion and improve aesthetics. This will include installation of topsoil and seeding the disturbed areas to promote vegetative cover.

Task 4: Grant Administration and Reporting
The grant will be administered by DEQ and its site manager. This task includes all reporting requirements for DNRC.

Monitoring plan
The project will be monitored by the engineering firm presently contracted to operate the treatment facility, with oversight from DEQ and BLM. Monitoring will include routine monthly samples which are presently collected as part of the existing monitoring program. Data are submitted to DEQ in quarterly monitoring reports, or more frequently as required. Project success will be measured by comparing analytical results to water quality criteria and comparing recent data with previous results from prior to project implementation.

Public Benefits Assessment
The project will mitigate mining related damage by installing a supplemental treatment facility to raise the pH of Swift Gulch water. Raising the pH will promote the precipitation and settling of dissolved metals, ultimately conserving the surface water quality. The project will also reclaim the Swift Gulch stream channel using natural materials and restoration strategies to help mitigate the damage to the channel from historic placer mining, as well as reduce scour through the creation of drop pools and armored banks. The project will also reclaim the sludge drying beds currently used for water treatment by revegetating to restore the riparian habitat.

The project protects public health by treating and capturing pollutants before they are transported downstream into traditional Pow Wow grounds and a popular recreational area. The project may also mitigate property damage to downstream landowners by improving water originating in the project area during high flow, and by capturing sediment. The project will create short-term jobs for contractors involved with project implementation and long-term jobs for maintenance and monitoring following implementation. The economic benefits also include project-associated support of local businesses.

The project has a degree of urgency as there is presently no backup system in the event of shutdown to the primary system, but the need for caustic treatment of high flow water was not well supported in the application . Scouring from high flows is presently mitigated with the use of the existing sediment reduction structure, although additional benefits would be realized through stream restoration and sludge bed revegetation practices.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Task 1: Data Collection, Investigation, and Final Design	$45,600	$0	**$45,600**
Task 2: High Flow Treatment System	$118,550	$0	**$118,550**
Task 3: Creek Rehabilitation	$229,000	$0	**$229,000**
Administration	$18,049	$4,978	**$23,027**
Total	**$411,199**	**$4,978**	**$416,177**

The project appears to be financially feasible with good details on construction and maintenance costs. Provisions are provided for grant administration and reporting.

Funding Recommendation
DNRC recommends grant funding of $411,199 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 9

Applicant Name	Lewis and Clark County	
Project Name	Grizzly Gulch Reclamation Project	
Amount Requested	$ 292,611	
Other Funding Sources	$ 17,340	Applicant
	$ 10,000	Montana Department of Environmental Quality
	$ 11,725	Landowner
Total Project Cost:	$ 331,676	
Amount Recommended:	$ 292,611	

Project Summary
The Grizzly Gulch Reclamation Project will reclaim the Pretty Girl Placer Mine located in Grizzly Gulch, just south of Helena, Montana. Mining activities have obliterated Grizzly Creek and disturbed four acres of historic floodplain. The site contains several deep open pits and unstable embankments that have disrupted the surface water and groundwater flows through Grizzly Gulch, as well as created unsafe conditions for the public along Grizzly Gulch Drive. Grizzly Gulch is a recreation corridor for cyclists, walkers, and joggers in the Helena valley. In its current state, the project area is a hazard for pedestrian and vehicular traffic. The project will reclaim Grizzly Creek to a functional stream and floodplain, improve water quality by eliminating erosion, increase water quantity by reducing evaporative losses in existing impoundments, and improve public safety and access. Reclaiming the mining-impacted area and establishing public access areas in the reclaimed area will benefit all users of the Grizzly Gulch corridor.

Project History
The Grizzly Gulch project site has an extensive mining history dating back to the 1870s, with mining activities occurring off and on until the early 2000s. Grizzly Gulch conveys surface water although ephemeral, and intermittent. Excavation activities have created highly variable topography throughout the project area, disrupting surface water flow patterns. The area is almost entirely devoid of riparian and wetland vegetation. The stream currently flows into a pit that fills until it spills into the secondary pit. Embankments at the downstream ends of each pit typically fail during annual spring runoff, releasing sediment into the system. In addition, side slopes along the east and west side of the site are prone to erosion and failure, threatening to undermine Grizzly Gulch Drive.

Proposed Solution
Goals and Objectives
The goal of the Grizzly Gulch Placer Mine Reclamation Project is to restore Grizzly Creek to a functioning stream with connection to a floodplain and riparian area; as well as to improve the safety of the public that uses Grizzly Gulch Drive. Objectives include reclaiming natural surface and groundwater interactions; creating riparian and wetland habitat; and improving public safety and providing public access.

Tasks or Activities
Task 1: Contract Administration and Project Management
Manage all contracts associated with the project.

Task 2: Project Permitting
Acquire all necessary permits.

Task 3: Construction Management
Provide construction management services, including procurement of construction services, technical oversight and field inspections, issuing certificates of substantial completion, reviewing and approving final payment, and assisting in contract closeout.

Task 4: Construction and Implementation
Construct the project as designed. Construction will be contracted to a low-bid contractor, but a portion of this task will be completed by the landowner.

Task 5: Monitoring
Develop a monitoring plan to document stream, wetland, and riparian functions.

Monitoring plan
Monitoring will include an assessment of vegetation establishment, surface water and groundwater function and interaction, as well as observations related to wildlife utilization and public access. Monitoring will occur annually in August.

Public Benefits Assessment
The project will conserve natural resources by restoring hydrologic connections between surface water and groundwater and restoring riparian and wetland habitat. The project will also improve public safety by stabilizing and reducing hazardous steep slopes along Grizzly Gulch Drive. The area impacted by placer mining is relatively small, comprising approximately 4 acres of floodplain and 1,055 feet of stream channel. No contamination is thought to be present.

Direct benefits of the project will primarily be enjoyed by residents and visitors to the area. These benefits are expected to be easily achieved and long-lasting. Temporary jobs will be created for engineers and professional consultants, government and non-profit agencies, and construction crews and the local economy will benefit from project-associated support of local businesses.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Task 1: Contract Administration and Project Management	$29,020	$3,000	**$22,020**
Task 2: Project Permitting	$8,200	$12,300	**$20,500**
Task 3: Construction Management	$24,840	$0	**$24,840**
Task 4: Construction and Implementation	$230,551	$18,725	**$249,726**
Task 5: Monitoring	$0	$5,040	**$5,040**
Total	**$292,611**	**$39,065**	**$331,676**

The budget is presented in a clear, understandable fashion, and estimated costs are reasonable and comparable to similar projects. However, the stream channel seems to be higher priced than projects of a similar scope.

Funding Recommendation
DNRC recommends grant funding of $292,611 upon approval of the project scope of work, administration, budget, and funding package.

Project No. 10

Applicant Name	Lewistown, City of	
Project Name	Central Post and Treating Company CECRA Facility Phase 2, Capping and Site Reclamation	
Amount Requested	$ 500,000	
Other Funding Sources	$ 27,086	Montana Dept. of Environmental Quality Brownfields
	$ 1,634	Applicant
Total Project Cost	$ 528,720	
Amount Recommended	$ 500,000	

Project Summary

Contaminated soils are being removed from the Central Post and Treating Company CECRA (Comprehensive Environmental Cleanup and responsibility Ac) Facility (Facility), but the soils at the facility still exceed levels for pentachlorophenol that pose a threat to groundwater. This project will construct a protective soil cap that will cover approximately 4.4 acres of the Facility in Lewistown, Montana. This soil cap will eliminate current and future impacts to local and regional natural resources by reducing the potential for contaminant leaching to groundwater and eliminating direct contact for native plants, wildlife, and humans. The cap will be seeded to restore native vegetation and provide native pollinator habitat, which will benefit the local ecosystem and agricultural lands. Completion of this project will allow the site to be closed and removed from the CECRA list.

Project History

The Facility is located on the City of Lewistown's original municipal landfill, which received household refuse from the early 20th century until operations ceased in the early 1960s. The Central Post and Treating Company, which operated at the Facility from 1968 until 1973, prepared and treated posts with pentachlorophenol. An environmental investigation conducted in 2016 found soil samples containing concentrations of pentachlorophenol and dioxins/furans that exceeded cleanup levels for human exposure and leaching to groundwater. A removal was conducted for the soils impacted by pentachlorophenol in November 2018; however, confirmation samples indicated the extent of contamination was greater than initially thought. The Montana Department of Environmental Quality (DEQ) conducted additional sampling to fully delineate the contamination. An additional 80 cubic yards of soil with the highest concentrations was excavated in 2020. Minimal soil cover remains on the landfill, precluding further excavation. Dioxins/furans are still present in surface soil at concentrations exceeding Facility cleanup levels.

Proposed Solution

Goals and Objectives

The goals of this project are to eliminate the risks to human health and damage to natural resources including regional groundwater, surface and subsurface soils, and native vegetation and terrestrial habitat from contamination at the Facility.

The project objectives are to 1) design and construct a protective soil cap that will eliminate the direct contact pathway for site receptors and establish native pollinator habitat on site and 2) document and report all actions completed to achieve the project goal.

Tasks or Activities

Engineering and design for the project will be completed through other funding sources. This project will include the following tasks:

Task 1: Cap Construction

Contractor will properly prepare the site for receipt of 18 inches of clean fill and 6 inches of topsoil. Soil will be trucked to the site by DEQ's subcontractor and installed, compacted, and graded in accordance with the DEQ-approved cap design. Oversight will be performed by DEQ's contractor and on-site progress meetings

with DEQ will be held every 10 days. After the cap is inspected, mechanical seeding will be implemented for revegetation with native pollinator habitat. Progress of vegetation will be observed on a monthly basis until the end of the growing season. This task includes the following subtasks: clean fill, topsoil, and compaction, final grading, mechanical seeding, and dust control.

Task 2: Grant Administration, Reporting, and Institutional Controls
DEQ's project manager will provide grant oversight and reporting to DNRC. A final report will be submitted by DEQ upon project completion. DEQ will coordinate with the City of Lewistown to prepare institutional controls restricting residential use of the site

Monitoring plan
Soils used to construct the cap will be sampled prior to cap installation. Vegetation will be certified weed-free in accordance with Fergus County Weed Control Board. The City of Lewistown will conduct cap and vegetation inspections after site closure.

Public Benefits Assessment
Soil contamination and extreme disturbance has limited the site's ability to support vegetation, leaving the soil prone to erosion through wind and stormwater. A vegetated cap will eliminate exposure risk through inhalation and ingestion of contaminated dust transported by wind. The soil cap will be revegetated with native pollinator habitat, which will benefit local agricultural lands and native plants. Capping will reduce infiltration of precipitation which will preserve groundwater resources. The benefits to onsite and regional natural resources are certain as the cap will permanently prevent impacts to natural resources. The economic benefits include short term remediation jobs and project-associated support of local businesses.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Task 1: Cap Construction			
Task 1a: Clean Fill	$294,486	$0	**$294,486**
Task 1b: Topsoil	$152,893	$0	**$152,893**
Task 1c: Compaction, Final Grading, Mechanical Seeding, and Dust Control	$52,621	$0	**$52,621**
Task 2: Grant Administration, Reporting, and Implementation of Institutional Controls	$0	$28,720	**$28,720**
Total	**$500,000**	**$28,720**	**$528,720**

The project budget is adequate and estimated costs are reasonable for these tasks.

Funding Recommendation
DNRC recommends grant funding of $500,000 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 11

Applicant Name	Sunburst, Town of	
Project Name	Suta South Petroleum Cleanup	
Amount Requested	$ 185,805	
Other Funding Sources	$ 1,300	Town of Sunburst
	$ 33,495	Sweetgrass Development
Total Project Cost	$ 220,600	
Amount Recommended	$ 185,805	

Project Summary
The Town of Sunburst would like to acquire the currently vacant Suta South property and redevelop it as a community park, traveler rest stop, and a battery charging facility for electric vehicles as they enter/leave Canada. This project will determine the extent and severity of the soil contamination at the Suta South site, and permanently remove petroleum contaminants in the soil and groundwater at the site. Redevelopment of the Suta South site will create a public space to encourage recreation and tourism within a small community. In addition, reducing the level of petroleum contamination in the soils and groundwater will move the Suta South site to closure with the Montana Department of Environmental Quality (DEQ).

Project History
The Suta South site was formerly operated as a gas station from the 1930s until 1998. A petroleum release was discovered in the underground storage tank basin in 1996. Despite a 2015 excavation, a substantial amount of petroleum impacted soil was left onsite as full removal was hindered by the presence of subsurface utilities. Remaining contaminants have caused benzene levels in groundwater to exceed the Montana DEQ's Risk Based Screening Level for benzene by 1,500 times.

Proposed Solution
Goals and Objectives
The goals of the project are to 1) determine the eastern extent of soil impacts on the site; 2) remove subsurface soils contamination; 3) reduce impacts to groundwater; and 4) achieve DEQ closure of the petroleum release at the site. The objectives include 1) complete test pitting to the east of monitoring well NFMW-2; 2) complete soil excavation and remove all petroleum impacted soil to the east of the 2015 excavation area; 3) reroute existing sewer line to excavate the maximum amount of impacted soil; and 4) document reduction of petroleum impacts to groundwater at the site via groundwater compliance monitoring.

Tasks or Activities
Task 1: Corrective Action Work Plan
Prepare a corrective action work plan addressing sewer line modifications, excavation, and compliance monitoring for DEQ approval.

Task 2: Montana Environmental Policy Act (MEPA) Environmental Assessment
Prepare a MEPA Environmental Assessment that evaluates potential natural resource and cultural impacts of the cleanup project.

Task 3: Soil Excavation and Hauling
Remove impacted soil east and south of the 2015 excavation area.

Task 4: Soil Treatment
Treat excavated, contaminated soil at a landfarm by spreading it in a 6-inch lift, tilling it monthly, and collecting cleanup confirmation samples after one treatment season.

Task 5: Monitoring Well Installation
Install a replacement source area well and a well down-gradient of the excavation area.

Task 6: Groundwater Compliance Monitoring
Conduct groundwater compliance monitoring on a semi-annual basis for three years.

Task 7: Reporting
Prepare a Soil Excavation Report, Initial Groundwater Monitoring Report, and five Groundwater Data Transmittal Reports for submittal to DEQ.

Task 8: Project Management
Complete project management activities that will include obtaining permits, communication with DEQ throughout the project, managing subcontractors and providing monthly status updates to the Town of Sunburst.

Monitoring plan
Post-cleanup monitoring includes soil confirmation sampling of the excavation and three years of groundwater compliance monitoring.

Public Benefits Assessment
This project repairs damage from petroleum hydrocarbon releases to soil and groundwater incurred during operations of a former gas station. The project permanently removes residual hydrocarbons in soil that pose a vapor intrusion threat and are currently leaching to groundwater. Excavated soil will be treated in a landfarm, after which it can be returned to beneficial use. The local community will benefit through short term construction jobs and commerce associated with the project. The community of Sunburst, a town with no parks or greenspace, will also directly benefit from this project through the development of the property as a rest area with future plans to construct solar powered electric car charging stations. This will result in increased revenue generation at local restaurants and shops that will be frequented by tourists using the rest area and vehicle charging facility.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Task 1: Corrective Action Work Plan	$0	$4,875	**$4,875**
Task 2: MEPA Compliance Document	$4,990	$0	**$4,990**
Task 3: Soil Excavation and Hauling	$118,336	$0	**$118,336**
Task 4: Soil Treatment	$14,370	$0	**$14,370**
Task 5: Monitoring Well Installations	$13,137	$0	**$13,137**
Task 6: Groundwater Compliance Monitoring	$0	$27,420	**$27,420**
Task 7: Reporting	$15,145	$0	**$15,145**
Task 8: Project Management	$19,827	$0	**$19,874**
Administration	$0	$2,500	**$2,500**
Total	**$185,805**	**$34,795**	**$220,600**

The project budget is adequate and estimated costs are reasonable for these tasks.

Funding Recommendation
DNRC recommends grant funding of $185,805 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 12

Applicant Name	Butte-Silver Bow Government	
Project Name	Butte Mining District: Reclamation and Protection Project, Phase V	
Amount Requested	$ 355,130	
Other Funding Source	$ 49,340	Applicant
Total Project Cost	$ 404,470	
Amount Recommended	$ 224,680	

Project Summary

This project is part of an ongoing effort to reclaim various public facilities and natural resources affected by the historic mineral development in Butte, Montana. This project includes rehabilitation work at the Anselmo and Steward historic mine yards that feature deteriorating infrastructure and buildings. Utility chases in both mine yards have begun to collapse and will require excavation and backfill to prevent further collection and routing of contaminated stormwater. This project proposes to remediate a deteriorating timbered delivery tunnel located under a busy main street at the Steward mine yard. Additional repairs and site improvements are proposed, including installation of parking lots and walking paths, rehabilitation of mine yard buildings, and increased safety infrastructure.

Project History

Historic mining in Butte left behind significant amounts of mine infrastructure and contamination. In 1990, the Butte Regional Historic Preservation Plan was created to recommend cleanup and preservation of the historic mine yards within the city. The Anselmo and Steward mine yards contain several aging infrastructure and buildings and are considered Phase V of the Preservation Plan. If these buildings and infrastructure are repaired, the Butte Regional Historic Preservation Plan would be steps closer to meeting their goals of remediating the significant damage from the historic mining development and ensure the continued survival and reuse of various mine yard buildings for the benefit of Butte and the public.

Proposed Solution

Goals and Objectives

The goals of the project are to 1) remediate portions of the Anselmo and Steward Mine yards to eliminate stormwater and erosion caused by degradation of historic utility infrastructure that threaten public health and safety and 2) restore mine yard buildings and structures to interpret the history of mineral development in Butte.

Tasks or Activities

Task 1: Buried Hazard Remediation

This task will remediate approximately 75 linear feet of buried utility chase and two associated access boxes situated along the west wall of the timekeeper's office in the Anselmo Mine yard and will remediate utility chases at the Steward Mine yard.

Task 2: Building Conservation

Repair and conservation work at the Anselmo Carpentry Shop will include repair of windows and shop doors. At the Steward Main Hoist House, work will include reroofing the main hoist house and encapsulating asbestos.

Task 3: Timber Delivery Tunnel

A timber delivery tunnel under North Main Street shows evidence of deterioration and decay. This task includes stabilization and rehabilitation of the timber tunnel and remediation of a subsided section.

Task 4: Institutional Controls

This task aims to improve visitor accessibility to the mine yards by installing walkways at the Anselmo and a paved parking lot and walkways at the Steward Mine yard.

Task 5: Engineering
An engineering firm specializing in excavation and compaction, carpentry, and roofing will be contracted to design the project.

Monitoring plan
The monitoring plan for the project was not specified in the application. Regular meetings will occur during on-site construction and construction tasks will be documented in the project completion report.

Public Benefits Assessment
Mine yard reclamation at the Anselmo and Steward mines will address an immediate public safety concern regarding the timber delivery tunnel under North Main Street and subsiding utility chases. Excavation and backfilling the utility chases will reduce safety hazards and the potential for direct conveyance of stormwater potentially impacted by mine waste. Building conservation will benefit the public through preservation of historic resources, benefit the local economy through an increase in tourism, and safety for any visitors to the mine yards.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Task 1: Buried Hazard Remediation	$20,700	$0	**$20,700**
Task 2: Building Conservation	$106,180	$0	**$106,180**
Task 3: Timber Delivery Tunnel	$30,000	$0	**$30,000**
Task 4: Institutional Controls	$130,450	$0	**$130,450**
Task 5: Engineering	$24,700	$0	**$24,700**
Contingency	$43,100	$0	**$43,100**
Administration	$0	$49,340	**$49,340**
Total	**$355,130**	**$49,340**	**$404,470**

The proposed budget appears reasonable and cost-effective.

Funding Recommendation
RDGP statute defines public resources as “the natural resources of the state, including air, water, soil, minerals, vegetation, fish, and wildlife, and the economic, social, and cultural conditions of Montana.” Benefits to public resources from tasks 1-3 are clearly outlined in the application. The application did not adequately address the natural and public resource benefits of Task 4: Institutional Controls, therefore task 4 is not recommended for funding.

DNRC recommends grant funding of $224,680 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 13

Applicant Name	Ruby Valley Conservation District	
Project Name	Granite Creek Reclamation and Realignment Project	
Amount Requested	$ 461,500	
Other Funding Sources	$ 3,000,000	Montana Department of Transportation
	$ 10,000	Montana Fish, Wildlife, and Parks Future Fisheries
Total Project Cost	$ 3,471,500	
Amount Recommended	$ 461,500	

Project Summary

Past mining impacts on Alder Gulch and Granite Creek have disconnected Granite Creek and reduced its sediment transport capacity. The result has been a gradual aggradation and reduction of hydraulic capacity at the Highway 287 bridge over Granite Creek. The proposed project includes construction of a new bridge, realignment of approximately 1,660 feet of Granite Creek to accommodate the new bridge alignment, and construction of a new fish barrier. This will improve public safety on Highway 287 and improve water quality and aquatic and terrestrial resources in Granite Creek. The addition of a fish barrier in Granite Creek will also preserve native Westslope Cutthroat Trout.

Project History

Virginia City and Alder Gulch were the location of extensive floodplain dredging to mine placer gold deposits. Dredging activities left large waste rock piles in the Alder Gulch floodplain. The extensive dredge piles severely impacted the confluence of Granite Creek with Alder Gulch, preventing the development of new channels, inhibiting channel movement, and in some cases, creating impoundments that stop movement of surface water altogether. Because the confluence is significantly changed, the aggradation of sediment around the Highway 287 bridge frequently causes water to pass over the bridge during high-flow events and ice-buildup, making for dangerous road conditions and undermining the bridge structure.

Proposed Solution

Project Goals and Objectives

The goals of this project are to improve public safety on Highway 287 and enhance water quality, sediment transport, and fish habitat in Granite Creek. The objectives include 1) repositioning the bridge over Granite Creek; 2) realigning Granite Creek; 3) reclaim and restore the confluence of Granite Creek to Alder Gulch to improve sediment transport and ecological connectivity; 4) perform contaminant sampling in areas of previous mining activity; 5) prepare contaminant reclamation plan; and 6) remove contaminated material and replace with clean material.

Tasks or Activities

Task 1: Soils Characterization

Soils will be sampled in areas that will be excavated as part of the project, including the existing stream bed and floodplain.

Task 2: Remedial Action Plan Preparation

Preparation of a soil remediation plan will be necessary if the results from Task 1 indicate contaminated soils exist within the project area.

Task 3: Remedial Action

If needed, contaminated soils excavated during the project will be removed from the site and replaced with clean material.

Task 4: Relocate Granite Creek

Relocate 1,600 feet of Granite Creek to a more appropriate alignment and restore the downstream end of the creek to reconnect with Alder Gulch.

Task 5: Construction of Fish Barrier
Once the channel restoration, floodplain reclamation, and bridge relocation phases of the project are completed, the applicant will work with Montana Fish, Wildlife, and Parks to install a fish passage barrier to protect native fish assemblages in the upper portions of the Granite Creek drainage. This barrier will prevent the upstream migration of non-native species, preventing them from competition and genetic introgression with native Westslope Cutthroat Trout. This effort will involve installing a wooden or concrete barrier high enough to prevent fish from jumping past the barrier.

Task 6: Relocation of Highway 287 Bridge (performed by Montana Department of Transportation)
Montana Department of Transportation (MDT) will be responsible for constructing a new bridge over Granite Creek in a location that is more appropriate to alleviate aggradation and flooding issues. A segment of Highway 287 may also be realigned in the vicinity of the bridge to improve driver visibility and sight lines.

Monitoring Plan
Post project monitoring will include assessment of vegetation cover, photo points, streambed pool/riffle substrate, and contamination levels in floodplain and streambed sediments.

Public Benefits Assessment
Restoration of the Granite Creek confluence with Alder Gulch will improve aquatic habitat, floodplain functions, and sediment transport. If contaminated sediment is found, its removal could contribute to improved water quality. The fish barrier is necessary to preserve native species in Granite Creek. The relocation of Highway 287 bridge will improve public safety. The bridge and stream relocation are long term, and certain to improve habitat, sediment transport, and public safety for the design life of the bridge. The project will create temporary jobs for engineering and technical professionals, and construction workers.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Task 1: Soils Characterization	$30,000	$0	**$30,000**
Task 2: Remedial Action Plan	$50,000	$0	**$50,000**
Task 3: Remedial Action	$118,000	$0	**$118,000**
Task 4: Relocation Granite Creek	$200,000	$0	**$200,000**
Task 5: Fish Barrier	$50,000	$10,000	**$60,000**
Task 6: Relocate Highway 287 Bridge	$0	$3,000,000	**$3,000,000**
Administration	$13,500	$0	**$13,500**
Total	**$461,500**	**$3,010,000**	**$3,471,500**

The project budget is reasonable and clear. The Montana Department of Transportation provided a letter of support committing funding to relocate the Highway 287 bridge.

Funding Recommendation
DNRC recommends grant funding of $461,500 upon DNRC approval of the project scope of work, administration, budget, and funding package. Award of grant funds for Tasks 3 - 6 are contingent upon completion of Tasks 1 - 2 and determination that the project remains viable.

Project No. 14

Applicant Name	Deer Lodge Valley Conservation District	
Project Name	Upper French Gulch Fish Passage and Restoration Project	
Amount Requested	$ 194,832	
Other Funding Sources	$ 20,000	Montana Fish, Wildlife and Parks Future Fisheries
	$ 5,000	Montana Fish, Wildlife and Parks (in kind)
Total Project Cost	$ 219,832	
Amount Recommended	$ 194,832	

Project Summary

Historic placer mining in French Gulch has resulted in a steep headwall that creates a barrier to fish migration and bank erosion that impairs water quality. A perched concrete culvert creates an additional barrier to fish passage. The project will restore passage for three native aquatic species (Westslope Cutthroat Trout, fluvial Arctic Grayling, and Western Pearlshell mussels) by constructing a sinuous, step-pool channel and removing the perched concrete culvert in French Gulch. The project will also use bioengineering techniques to restore two eroding streambanks downstream of the headwall to improve water quality in French Gulch.

Project History

French Creek was the location of the first gold strike in the Big Hole watershed in the 1860s, with mining continuing through the early 1900s. Placer mining activities resulted in disturbance to the channel and floodplain of French Creek and French Gulch, nearly all of which has been restored through a $1.2 million project that treated placer impairments along three miles of French Gulch. This project proposes to restore a 30- to 40-foot-high headwall at the upstream extent of placer mining, which creates a steep cascade that prevents fish from accessing 1.7 miles of nearly pristine, fishless habitat upstream of the cascade. In addition, a perched concrete culvert just upstream of the headwall presents an additional barrier to fish passage. Eroding banks downstream of the cascade contribute sediment and impair water quality in the watershed.

Proposed Solution

Goals and Objectives

The primary goal of the project is to restore fish passage to the upper reaches of French Gulch by constructing a step-pool channel. A secondary goal is to improve water quality by stabilizing two eroding banks using bioengineering techniques.

Tasks or Activities

Task 1: Project Design

A final survey of the existing cascade barrier and surrounding area will be completed and used for the final design to ensure accurate earthwork quantities.

Task 2: Permitting

Required permits will be obtained for the project.

Task 3: Bidding

The applicant will advertise for construction bids, host a pre-bid meeting, review bids, and award a construction contract following state procurement guidelines.

Task 4: Fish Passage Structure Construction

This task provides for construction of the project and includes construction oversight; mobilization; bonding and general requirements; diversion and care of stream; earthwork; boulder salvage; step-pool construction; reinforced concrete pipe removal; site restoration; machine time; and 10 % contingency.

Task 5: Restore Eroding Banks
Eroding banks will be stabilized using hand labor and tools to install bioengineered slope stabilization measures.

Task 6: Project Management
This task includes both grant administration and project management to maintain communication between project partners; manage contracts with DNRC and subcontracts with design engineers and construction contractors; and complete project reporting.

Monitoring plan
Post-project monitoring of fish passage success will be completed by Montana Fish, Wildlife, and Parks. Monitoring will begin after removal of non-native Brook Trout and reintroduction of Westslope Cutthroat Trout in the drainage. Monitoring of water quality and restoration success was not included in the application.

Public Benefits Assessment
The project will conserve natural resources by improving water quality, riparian vegetation and soils, natural aesthetics and aquatic and terrestrial habitat. The project is part of a much larger restoration/reclamation effort in the French Gulch watershed and may open up approximately 1.7 miles of cold headwaters stream habitat. The placer mining impacts to French Gulch have resulted in bank erosion and the isolation of the upper watershed from fish and mollusk populations, including three species of special concern that have declined and require active management and restoration to recover or persist. The project will benefit recreation through improved fish and wildlife habitat, improved recreation opportunities within the project area, and improved aesthetic values. The project will also create temporary jobs for engineering and technical professionals, and construction workers.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Task 1: Project Design	$15,250	$0	**$15,250**
Task 2: Permitting	$3,136	$0	**$3,136**
Task 3: Bidding	$5,499	$0	**$5,499**
Task 4: Fish Passage Construction	$151,772	$20,000	**$171,772**
Task 5: Restore Eroding Banks	$2,000	$0	**$2,000**
Task 6: Project Management	$11,500	$0	**$11,500**
Administration	$5,675	$5,000	**$10,675**
Total	**$194,832**	**$25,000**	**$219,832**

The project budget is reasonable and clear. Costs to meet DNRC reporting requirements were not explicitly stated, but reporting was included in the scope of work.

DNRC Concerns
The slope of the proposed step-pool channel for French Gulch is very steep (14%) and the sinuous, zig-zag plan form is a novel, unproven approach that could make it difficult for the stream to flow around the sharp turns through the corner step-pools, especially at high discharges. Reference reach natural step-pool channels are nearly straight. In addition, it is unclear whether hydraulic conditions in the step-pool channel will actually allow fish passage at flows during spawning migration. Finally, it is unclear how much of the 1.7 miles of channel upstream of the proposed step-pool structure is actually habitable by the target aquatic species. Additional data and analyses (e.g. design discharges (hydrology), hydraulics at varying flows, bed and bank stability, comparison of hydraulic conditions to fish swimming and jumping ability) should be provided to document likely success of the sinuous step-pool alternative. Additionally, the step-pool structure is above a historically significant “Chinese Wall” used in early mining in the drainage. The applicant will need to complete Section 106 consultation with the State Historic Preservation Office before proceeding with the project.

Funding Recommendation

DNRC recommends grant funding of $194,832 upon DNRC approval of the project scope of work, administration, budget, and funding package. Grant funds are contingent on the applicant providing more analysis demonstrating the selected alternative will succeed and demonstrating approval from the State Historic Preservation Office.

Project No. 15

Applicant Name	Fort Peck Assiniboine and Sioux Tribes	
Project Name	Orphaned Oil Well Abandonment and Reclamation	
Amount Requested	$ 498,862	
Other Funding Sources	$ 5,000	Applicant
Total Project Cost	$ 503,862	
Amount Recommended	$ 300,000	

Project Summary
The Fort Peck Assiniboine and Sioux Tribes (FPT) plan to plug and abandon three high priority orphaned oil well sites and return the disturbed land to its natural contours and function. The goals of this project are to eliminate the potential for surficial and/or down-hole fluid migration, naturalize the orphaned well sites by removing and properly disposing of all surface and near-surface infrastructure and debris, and reclaim disturbed areas by importing topsoil and seeding the topsoil with a native rangeland seed mix. Once implemented, these reclamation actions will reduce the potential for contamination of Montana's natural resources, including soils, groundwater, and wildlife.

Project History
The FPT have been leasing and/or managing oil and gas wells since the 1950s; however, many of the oil and gas wells no longer have a viable operator or do not have enough bonding to cover reclamation costs. Thus, the wells become orphaned and the maintenance, inspection, and/or reclamation becomes the responsibility of the FPT. The FPT applied for and was awarded a RDPG planning grant to inventory and rank over 900 wells by environmental and social risk factors. Twenty of the highest priority sites under the jurisdiction of the FPT were assessed and funds from this project will be used to develop reclamation plans to plug and abandon three of those twenty high priority sites.

Proposed Solution
Project Goals and Objectives
The goals of this project are to return all disturbed land surfaces from the orphaned oil wells, pits, oil field infrastructure and/or access roads to the original contours, shape, and function that existed before oil development.

The objectives are to 1) eliminate the potential for fluid or gas migration in the well bores and to ensure protection of groundwater and other mineral resources in the area; 2) minimize the potential for any further oil or brine water releases; 3) naturalize the orphaned well sites by removing and properly disposing of all surface and near-surface infrastructure and debris; 4) remove oil-impacted soil; and 5) import topsoil to disturbed areas and seed with a native rangeland seed mix.

Tasks or Activities
Task 1: Well Plugging and Abandonment
A licensed contractor will be selected by the FTP to isolate the production zones in a manner that prevents the escape and comingling of oil, gas, and brackish water into other stratums. The contractor will plug and abandon three well sites (Allotted Hall 2-29, EPU 54, Charles Track 1).

Task 2: Well Pad Cleanup and Reclamation
This task includes landfarm siting; pad decommissioning; soil assessment; characterization and development of a cleanup plan; soil excavation, hauling and well pad reclamation; and soil treatment. During this task, FPT and their contractor will remove infrastructure; excavate contaminated soil; properly dispose of contaminated soils; and return sites to their former land use for each of the three well sites.

Task 3: Reporting and Permits
Documentation of all cleanup activities will consist of a cleanup verification report for each well pad (three total) and a technical memorandum summarizing soil treatment, confirmation sampling, and revegetation

at the landfarm. In addition to reporting, contracted personnel would also be responsible for obtaining necessary permits; managing a subcontractor for excavation, hauling, and landfarming; and provide comprehensive project and status updates.

Monitoring Plan

Confirmation soil sampling is needed in areas where petroleum-contaminated soil is removed. Soil confirmation sampling will be conducted at a frequency of approximately one sample for every 625 square feet of the base of the excavations and every 20 linear feet of sidewall. Additional sampling will be required per the landfarm permit in accordance with regulatory requirements. Landfarmed soils will be tilled and inspected to ensure proper remediation has taken place.

Public Benefits Assessment

The project will properly plug and abandoned oil and gas wells and reclaim the surface by removing equipment, restoring the well pad and road, and remediating petroleum contaminated soil. This work will eliminate the potential impacts to groundwater and public health and safety from aging, inoperative oil well sites. The historic releases of oil and produced water hinder the establishment of native rangeland plants, cause sediment to offload into nearby waterways and streams, and threaten the health of the natural ecosystem. The project will also create temporary jobs for engineering and technical professionals.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Task 1: Well Plugging and Abandonment	$256,059	$0	**$256,059**
Task 2: Well Pad Cleanup and Reclamation	$192,350	$2,500	**$194,850**
Task 3: Reporting	$13,500	$0	**$13,500**
Administration	$36,953	$2,500	**$39,453**
Total	**$498,862**	**$5,000**	**$503,862**

The budget was clear, detailed, and outlined required costs. The overall cost of the project appears high in comparison to similar projects. Additionally, the costs and need for landfarm are not well documented in the application.

DNRC Concerns

Well EPU 54 has a potentially responsible party with bonding resources on file with the Montana Board of Oil and Gas Conservation. DNRC Statute (MCA 90-2-1112) states that a project is not eligible for funding "if there is a liable party who would be relieved of financial or legal responsibility and who can reasonably be expected to be held responsible." Therefore, funding for this well cannot be included in the project.

The proposed project uses landfarming for petroleum contaminated soil remediation; however, there are landfills licensed to receive contaminated soils in proximity to each site. These landfills may be a better long-term and cost-effective solution for soil remediation. The applicant should provide cost estimates for each alternative to justify the need for landfarming.

Funding Recommendation

DNRC recommends grant funding of $300,000 upon DNRC approval of the project scope of work, administration, budget, and funding package. This funding does not include EPU 54 or any well found to have a viable potentially liable party.

Project No. 16

Applicant Name	Town of Ryegate	
Project Name	Former Ryegate Conoco Groundwater Remediation	
Amount Requested	$ 232,504	
Other Funding Source	$ 2,969	Applicant
Total Project Cost	$ 235,473	
Amount Recommended	$ 232,504	

Project Summary
The abandoned Ryegate Conoco gas station is located on Highway 12 and Kemp Street in Ryegate, Montana. Releases of petroleum products from facility underground storage tank systems have contaminated soil and groundwater at the site. A dissolved phase hydrocarbon plume, with concentrations of petroleum hydrocarbons exceeding water quality standards, extends approximately 150 feet from the site beneath and south of Highway 12. The goal of this project is to remediate contaminated groundwater and allow the Town of Ryegate to redevelop the property.

Project History
Three underground storage tank systems were installed in two separate areas since the facility began operation in the 1930s. Historical underground storage tank systems were removed during the installation of replacement systems, and all remaining underground storage tank components were removed in May 1993. Petroleum hydrocarbon contamination was first discovered near the southern boundary of the site in 1992 during a Montana Department of Transportation right-of-way investigation on US Highway 12. The Town of Ryegate was awarded a grant from the DNRC RDGP in 2008 to remove accessible petroleum soil, install groundwater wells for potential future remedial measures, perform petroleum recovery, and further delineate the hydrocarbon plume. The work was conducted from September 2009 to July 2011. In 2013, the Town of Ryegate was awarded another RDGP project grant from the DNRC to install and operate a hydrogen peroxide remedial injection system, perform annual groundwater monitoring, decommission the remedial system, and abandon the wells once the groundwater was remediated. This system was unable to complete remediation at the site and the Town of Ryegate was awarded a RDGP project grant in 2018 to determine how to optimize the current system to further remediation at the site. This application builds on the understanding gained from the 2018 RDGP grant to improve remediation at the site and bring the site to closure.

Proposed Solution
Goals and Objectives
The goals of this project are to remediate impacted groundwater and rehabilitate the site property so that the property can be developed. The primary objective is to continue the biodegradation of the hydrocarbon plume using dissolved oxygen. The objective will be met by maintaining the operation of a previously installed remedial system, constructing three new injection wells, and injecting hydrogen peroxide, to act as an oxygen source, into the aquifer.

Tasks or Activities
Task 1: Remedial System Installation
Three horizontal injection wells will be installed parallel to and north of US Highway 12, and south of the water main to deliver oxygen to downgradient wells.

Task 2: Monitoring Well Installation
One additional monitoring well will be installed on the site to monitor the plume.

Task 3: Monthly Remedial System Operation and Maintenance
This task includes operation of the hydrogen peroxide system for two years and monthly site visits to inspect the system equipment and perform any maintenance during the project.

Task 4: Semiannual Groundwater Monitoring
Groundwater monitoring will be conducted semiannually for two years to assess the effectiveness of the injection system and monitor the concentrations of contaminants in groundwater.

Task 5: Remedial System Decommissioning and Monitoring Well Abandonment
After completion of the project the remedial system and monitoring and injection wells will be removed from the property and the site will be reclaimed.

Task 6: Reporting
The Town of Ryegate and its contractor will prepare and submit annual groundwater monitoring reports and regular progress reports throughout the project.

Monitoring Plan
Groundwater monitoring will be conducted semiannually for two years to monitor the effectiveness of the hydrogen peroxide injection system and monitor plume stability. Monitoring will include the field measurement of static water levels, dissolved oxygen, pH, specific conductivity, temperature, and oxidation-reduction potential in the wells prior to the collection of groundwater samples.

Public Benefits Assessment
The project will remove hydrocarbon compounds that have the potential to threaten the Town of Ryegate water supply well and the Musselshell River if the hydrocarbon plume migrates. However, the contamination plume appears stable and has persisted for a long time without directly threatening human or environmental health. The plume is experiencing some natural attenuation, but under existing conditions it is likely the contamination would persist without supplemental oxygenation to support breakdown of hydrocarbons.

Direct benefits of the project include protection of groundwater and the nearby Musselshell River. The project may indirectly benefit residents in the vicinity of the project area through preservation of property values as well as reduced exposure to contaminants. The benefits are primarily local, but contamination of the Musselshell Rive could have regional affects. The project would result in short-term jobs for contractors involved with well installation and for consultants involved with maintenance, operations, and monitoring of the site.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Task 1: Remedial System Installation	$45,705	$0	**$45,705**
Task 2: Monitoring Well Installation	$4,288	$0	**$4,288**
Task 3: Monthly Remedial System Operations and Maintenance	$78,155	$0	**$78,155**
Task 4: Semiannual Groundwater Monitoring	$51,965	$0	**$51,965**
Task 5: Remedial System Dismantling and Well Abandonment	$16,926	$0	**$16,925**
Task 6: Annual Reporting	$35,465	$0	**$35,465**
Administration	$0	$2,969	**$2,969**
Total	**$232,504**	**$2,969**	**$235,473**

The project appears to be financially feasible with good details on construction and maintenance costs. Provisions are provided for grant administration and reporting.

Funding Recommendation
DNRC recommends grant funding of $232,504 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Part 2. Other Projects Submitted for Funding Consideration

Applicant Name	Beaverhead Conservation District	
Project Name	Grasshopper Creek Mine Tailing Reclamation	
Amount Requested	$ 298,470	
Other Funding Sources	$ 2,859	Montana Fish, Wildlife, and Parks (in kind)
	$ 820	Applicant
	$ 5,000	Bureau of Land Management
	$ 5,000	Montana Fish, Wildlife, and Parks Future Fisheries
Total Project Cost	$ 312,149	
Amount Recommended	$0	

Project Summary
The proposed project is the beginning of a major effort to protect Grasshopper Creek from contaminated soil caused by historic mining and reduce the overall sediment load into the creek. The project proposes to repair and improve a berm structure that holds back tailings from the Gold Leaf/Priscilla tailings pond next to Grasshopper Creek. The project also proposes to restore two eroding streambanks by removing mine waste, placing in a repository, and restoring the channel by re-structuring and revegetation. The work will help mitigate the damage of historic mineral extraction by repairing breaches in the existing tailings impoundment structure, constructing armored spillways, deacidifying and revegetating the soil in the tailings pond, and stabilizing eroding streambanks containing mine waste.

Project History
The proposed project is located approximately 0.5 miles downstream of Bannack State Park. Gold was discovered at the mouth of Grasshopper Creek in 1862 leading to the creation of the town of Bannack. Extensive placer deposits were found and Grasshopper Creek experienced extensive dredge mining operations. Gold-bearing deposits were also discovered in the uplands around Bannack and along Grasshopper Creek. Numerous mines operated in these areas including the Gold Leaf/Priscilla Mine and Mill and associated tailings pond. The Gold Leaf/Priscilla tailings pond contains 89,000 cubic yards of heavy-metal-contaminated tailings. In the 1970s, a riprap berm was constructed along the edge of the Gold Leaf/Priscilla tailings pond to prevent erosion and release of tailings material into Grasshopper Creek. The Montana Department of Environmental Quality (DEQ) identified sediment in Grasshopper Creek, a tributary of the Beaverhead River, as impairing aquatic life. Primary sediment inputs along Grasshopper Creek identified during a 2019 assessment included upland ephemeral tributary channels, runoff from mine sites adjacent to the creek, and streambank erosion. Other minor inputs identified included residential development, cattle grazing, and roads. The assessment also revealed that the rip-rap berm constructed in the 1970s had been breached in multiple places, allowing contaminated tailings and sediment into Grasshopper Creek.

Proposed Solution
Goals and Objectives
The goals of this project are to 1) improve water quality in Grasshopper Creek and 2) raise awareness of reclamation efforts of historic mining. The objectives of this project are to 1) repair the breached tailings berm along the creek; 2) improve vegetation to minimize erosion of the berm; 3) improve the berm to avoid contamination when runoff overtops it; 4) construct armored spillways to channel large flows and reduce erosion; 5) restore eroding streambanks; and 6) install interpretive signs for Bannack State Park visitors.

Tasks or Activities
Task 1: Complete Necessary Permitting for Construction, Confirm Access Permission, Contact Adjacent Landowners, Public Outreach, Develop Interpretive Site Concepts

Task 2: Advertise, Rank and Procure Project Engineer

Task 3: Complete Final Project Design

Task 4: Advertise, Rank and Procure Construction Contractor

Task 5: Construction, Engineering, Project Management

Task 6: Contingency

Monitoring Plan
Additional tailings pond soil samples will be taken prior to construction to aid in detecting tailings sediment in Grasshopper Creek. Upstream and downstream water samples will be taken before, during, and immediately after project completion. Additional samples will be taken one year after completion. The applicant will monitor water quality for three years after completion.

Public Benefits Assessment
Active and abandoned mines dot the landscape all around the Grasshopper Creek project area. A 2019 assessment identified several sediment input areas downstream of Bannack State Park. These include two eroding streambanks containing mine waste and contributing excess sediment to Grasshopper Creek, and the former Gold Leaf/Priscilla Mine and Mill tailings pond located adjacent to Grasshopper Creek. The tailings are unconsolidated contaminated material, three to ten feet deep, and rest on old gravel dredge piles. The soil is too acidic for adequate plant growth to prevent erosion, and the hillsides above drain directly into the tailings pond before washing tailings and sediment material into the creek. Repairing the tailings pond berm and enhancing vegetation along the berm and other streambank erosional areas would decrease the volume of sediment entering Grasshopper Creek and preserve water quality, terrestrial and aquatic habitat, and the local ranching and fishing industries that rely on water quality.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Task 1: Project Startup	$300	$1,530	**$1,830**
Task 2: Procure Engineer	$300	$333	**$633**
Task 3: Final Design	$10,000	$5,000	**$15,000**
Task 4: Procure Construction Company	$300	$333	**$633**
Task 5: Construction, Engineering, Project Management	$250,912	$5,663	**$256,575**
Task 6: Contingency	$33,877	$0	**$33,185**
Administration	$2,781	$820	**$3,601**
Total	**$298,470**	**$13,679**	**$312,149**

The tasks listed in the application and the associated budget do not include a list of construction tasks necessary to complete various work items associated with the project. When evaluating the budget narrative, provided engineer's estimates, and budget summary form, the overall budget is unclear with no clear separation or display of proposed administration, engineering design, engineering/construction oversight, and monitoring costs. In addition, mobilization costs appear to be accounted for multiple times. There is no discussion or budget to locate a suitable repository and perform a repository investigation, and the engineer's estimate for these two locations is also missing costs for hauling, placing, and compacting mine waste within a repository.

Based on the information provided in the application, there is not enough information to comprehensively evaluate the financial or technical feasibility of the project to determine if all essential budget components have been included, or if the costs appear reasonable.

DNRC Concerns
The application demonstrates the intent of the project and conceptual benefits to natural resources. DNRC agrees with the need and potential benefits of the project, however, the application failed to demonstrate that it is both financially and technically feasible.

Technical feasibility means the project or activity can be designed, constructed, operated, or carried out to accomplish its objectives utilizing accepted engineering and other technical principles and concepts. The application does not contain a list or description of the tasks or activities necessary to accomplish the objectives. The tasks listed in the application are associated with overall administration, planning, and managing of the project and are not a list of remedial investigation, design, or construction tasks necessary to complete various work items associated with the project. There is no discussion of the work necessary to locate a suitable repository location and no description of the proposed tailings removal. There are three separate work areas associated with this project: Gold Leaf Pricilla tailings pond, River Mile 20.55, and River Mile 20.60. The Alternatives Analysis does not address alternatives for stream-side tailings removal, does not clearly identify the preferred alternative, and does not provide a clear explanation of the costs associated with each alternative or the cost/benefit of the preferred alternative.

Financial feasibility means that adequate funds are available to complete the project as approved. Because the application did not contain an adequate discussion of construction tasks including quantities, equipment, conceptual design, and locations, there is not enough information to justify the budget.

Funding Recommendation
DNRC does not recommend funding of the project as proposed. DNRC recommends that the applicant seek additional planning funds to address the deficiencies in the technical and financial proposal.

Applicant Name	Department of Natural Resources and Conservation, Water Rights Bureau	
Project Name	Development of a Groundwater Model Web Application for Existing Groundwater Models	
Amount Requested	$ 499,720	
Other Funding Sources	$ 51,844	Applicant
Total Project Cost	$ 551,564	
Amount Recommended	$0	

Project Summary
The goals of this project are to enhance the accessibility of existing groundwater information and facilitate broad use of the groundwater models through the web application, training, and outreach. The project will construct, modify, and calibrate existing groundwater models and integrate them into a user-friendly web application. This web application project will facilitate the consolidation of groundwater information and improve DNRC's ability to balance existing demands with new users while also providing for robust capacity to conduct predictive modeling for future scenarios. Ultimately, this project will save time and money for groundwater development applicants while vastly improving DNRC's ability to manage groundwater resources and benefit natural resources, public health, and the economy of Montana.

Funding Recommendation
This project was withdrawn by the applicant during the review period.

CHAPTER III
Status Report of Active 2011–2019 Projects

This chapter briefly summarizes the status (as of October 30, 2020) of active projects and projects completed this biennium. Projects are grouped according to the year in which they received legislative approval; within each grouping, projects are presented in the order of their relative funding priority.

Projects Approved by the 2019 Legislature – House Bill 7

1. Lincoln Conservation District – Tobacco River Restoration Project - Engineering and Implementation

The Tobacco River Restoration Project repairs impacts from instream gravel mining on a one-half-mile stretch of the Tobacco River. This project was completed in January 2020.

2. Richland Conservation District – Mitigating Impacts to the Fox Hills/Hell Creek Aquifer, Richland County

This project will reduce the volume of water wasted by free-flowing Fox Hills/Hell Creek wells in Richland County. The project sponsor has begun reaching out to landowners. This project will continue until 2023.

3. Musselshell County – Bair-Collins Mine (Meathouse Road) Reclamation and Musselshell River Restoration

The Bair-Collins Mine Reclamation and Musselshell River Restoration project will reclaim an abandoned coal mine; reduce impacts from flood events on the Musselshell River adjacent to Roundup, Montana; improve the fishery; and create recreational access to the river. Construction on the project began in August 2020 and is expected to be complete by the end of 2020.

4. Missoula County Community and Planning Services – Ninemile Creek Mine Reclamation

The goal of the Ninemile Creek Reclamation project is to reclaim mining impacts, improve water quality, and reconnect previously damaged tributaries. Construction began on this project in summer 2020 and will continue until fall 2021.

5. Harlowton, City of – Removal of Contaminated Soils and Free Product at the Harlowton Roundhouse in Harlowton, MT, Phase 3

This project will clean up diesel contaminated soils and groundwater at the Harlowton Roundhouse Facility, improve water quality, restore a historic wetland, and mitigate flooding along the Musselshell River in Harlowton, Montana. Construction on this project began in fall 2019 and will continue until fall 2021.

6. Granite Conservation District – Silver King Mine Reclamation

The Silver King Mine Reclamation project will remove waste rock from the Silver King Mine and regrade and reconstruct the site and reestablish the original Sluice Gulch channel. Construction began on this project in summer 2020 and will continue until fall 2021.

7. Powell County – Milwaukee Roundhouse Area Remediation

The Milwaukee Roundhouse Facility in Deer Lodge, Montana released diesel and other contaminants, impacting soil, groundwater, surface water, and aquatic habitat. This project will remove contaminated soil from the site to mitigate damage to soil and groundwater resources at the facility. This project is not yet contracted.

8. Montana Department of Environmental Quality – Upper Blackfoot Mining Complex Wetland Contamination Removal

This project will remove mine waste from a riparian wetland complex to restore natural connectivity within the wetland and the Blackfoot River headwaters. This project is not yet contracted.

Projects Approved by the 2019 Legislature – House Bill 652

9. Deer Lodge, City of – Milwaukee Roundhouse CECRA Site Passenger Refueling Area VCRA Program Remediation

Removal of contaminated soils at this site will repair damage to soils and groundwater resources from historic railroad operations. Work began on this project in fall 2019 and is expected to be complete by fall 2021.

10. Ryegate, Town of – Former Ryegate Conoco Groundwater Remediation

Releases of petroleum products from the gas station's underground storage tank systems have contaminated soil and groundwater at the site. Additional sampling at the site in 2019 and 2020 has refined the scope of work to the project. This project is expected to be complete in fall 2021. The town submitted a project grant application to continue work at the site.

11. Montana Department of Environmental Quality – Cottonwood #2 Acid Mine Drainage Diversion Project

This project will construct a new collection system to contain acid mine drainage that seeps to the ground surface in multiple locations in the town of Stockett, Montana. This project is contracted and will begin in summer 2021.

12. Montana Department of Environmental Quality – Basin Creek Mine - Phase 2 Site Stability Project

Oversized mine haul roads remaining at the Basin Creek Mine are responsible for sediment that migrates off-site and into the headwaters of Basin Creek. This project will reduce the size of the haul roads and reduce the sediment load to surface waters emanating from the former mine. Construction on this project began in summer 2020 and will be complete in fall 2020.

13. Montana Department of Environmental Quality – Upper Blackfoot Mining Complex Water Treatment Plant Bridge and Infrastructure Protection

This project is to replace a culvert at the water treatment plant at the Upper Blackfoot Mining Complex with a bridge. Installation of the bridge began in summer 2020 and is expected to be complete by the end of 2020.

Projects Approved by the 2017 Legislature

1. Granite Conservation District – Flint Creek Watershed Metals Remediation – Fred Burr Creek, Rumsey Mill Tailings

The Flint Creek Metals Remediation Project will assess and remove mercury contamination from the Rumsey Mill in the Fred Burr Creek watershed. Sampling has been completed on the site. This project is delayed due to COVID-19 and will resume in summer 2021.

2. Montana DEQ – Tramway Creek Mine Reclamation Project

The Tramway Creek Mine Reclamation Project is a partnership between the Montana DEQ, the USFS, and Trout Unlimited. To date the Engineering Evaluation / Cost Analysis has been completed as well as a cultural resource evaluation of potential reclamation sites. This project was delayed due to COVID-19 and is expected to be complete at the end of 2021.

3. Harlowton, City of – Removal of Contaminated Soils and Free Product at the Harlowton Roundhouse in Harlowton, MT

This project will remove diesel contaminated soils in the floodplain of the Musselshell River. Removal of soils began in fall 2019. Additional soils removal will take place in fall and winter 2020.

4. Lewistown, City of – Cleanup of the Central Post and Treating Company in Lewistown, MT

This project will remove contaminated soils from the Central Post and Treating Company. Soil removal began in summer 2018. The project was delayed due to the discovery of additional contamination and the need for additional planning. Work will resume in summer 2021.

5. East Helena Public Schools – Dartman Field Reclamation Project
Deep tilling of the Dartman Field site will reduce concentrations of contaminants on the site to allow construction of school facilities. Tilling on the site began in summer 2018. This project is complete.

6. Confederated Salish and Kootenai Tribes – Revais Creek Mine Tailings Reclamation
The goal of this project is to remove contaminated tailings near Revais Creek. Work on the project began in spring of 2020 but was delayed due to COVID-19. Work will resume in summer 2021.

7. Missoula County Community and Planning Services – Ninemile Creek Housem Placer Mine Reclamation
The goal of this project is to reclaim and restore placer impacted Ninemile Creek. Construction began in summer 2020 and will be complete by spring 2021.

Projects Approved by the 2015 Legislature

1. Montana DEQ – Belt Water Treatment Project
This grant is under contract and the project is proceeding with water treatability testing and engineering design in order to bid the construction of the water treatment plant in 2021.

7. Montana DEQ – Sand Coulee Acid Mine Drainage Source Control
Investigations to characterize mine adit flows, local hydrogeological conditions, and identify recommended interception well locations have been completed. Montana DEQ is currently conducting well permitting consultations and soliciting information from drilling companies to identify well design considerations and constraints. Work is anticipated to resume in 2021.

10. Madison County – North Willow Creek Reclamation
This project received partial funding from the 2015 Legislature. The primary goal of this project is to reclaim one abandoned mine in the Pony and Cataract Creek drainages within the North Willow Creek watershed. This project could not be completed because Golden Sunlight Mine is not accepting mine waste for reprocessing. Funds were reverted in fall 2020.

Active Projects Approved by the 2013 Legislature

10. Butte-Silver Bow Consolidated City – County Government Planning Department – Butte Mining District: Reclamation and Protection Project Phase 4 – Orphan Girl
The rebuild of the Orphan Girl decline tunnel has been designed and the surface runoff drainage system has been installed. Exterior repairs to the mine yard building are complete. Final construction and project reporting were completed in 2019.

11. Ryegate, Town of – Former Ryegate Conoco Groundwater Remediation
A dissolved phase hydrocarbon plume with concentrations of petroleum hydrocarbons exceeding water quality standards extends about 150 ft. from the abandoned Ryegate Conoco gas station beneath and south of Highway 12. Ryegate has installed fluid injection wells, a remedial system, and is in the process of monitoring the groundwater. The system has not been able to complete cleanup and the Town of Ryegate is seeking additional funds to continue work.

Active Projects Approved by the 2011 Legislature

22. Crow Tribe / Little Bighorn River Restoration
Phase 1 of this project, which entailed site survey and investigation, is complete. The Tribe received approval from FEMA for Phase 2 in February 2017. This grant expired without renewal by the applicant.

CHAPTER IV
Reclamation and Development Grants Program—Project Planning Grants

Program Information

The 2019 Legislature authorized $900,000 for RDGP project planning grants. These grants are intended to assist local governments with the planning and design of technically feasible natural resource projects eligible for funding consideration under the RDGP. Planning grant funds must be used primarily for contracted consulting or engineering services.

Planning grant applications were accepted in September 2019, October 2019, and March 2020. DNRC plans to conduct another grant cycle in early 2021. As of October 30, 2020, planning grant funding was used to assist 17 projects across Montana (Table 2). Review and ranking methodology were patterned after and was conducted similar to the RDGP projects grant program. The maximum amount for a planning grant is $50,000. Of the 17 planning grants, 6 planning projects resulted in an application for a RDGP project grant by the June 1, 2020 deadline. Some of the projects are still in planning stages and do not expect to submit applications for RDGP project grants until the 2022 cycle. Projects submitted by applicants that received a planning grant tended to rank higher relative to those that did not seek a planning grant.

Funding for the planning grant projects has proven invaluable for applicants in preparing and submitting a high quality and competitive project grant application.

Total Available 2021 Biennium	$ 900,000.00
Grants Awarded as of October 2020	$ 442,245.00
Amount Remaining 2021 Biennium	$ 457,755.00

Table 2. Project Planning Grants Awarded During the 2019 Biennium (as of October 30, 2020)

Project Sponsor	Project Title	Awarded Amount
Powell County	Milwaukee Roundhouse CECRA Facility Remediation Proposal – Milwaukee Roundhouse Area Portion	$49,907
Missoula, City of	EPA Revolving Loan Fund Grant Application Support	$6,000
Harlowton, City of	Investigation of the Historic Railyard Dump at the Harlowton Milwaukee Roundhouse CECRA Facility	$19,993
Lewistown, City of	Expanded Investigation of the Central Post and Treating Company CECRA Facility	$49,977
Missoula, City of	EPA Brownfields Grant Application Support	$6,000
Philipsburg, Town of	De-sludge Philipsburg Sewer Lagoons Cells 1 and 2	$30,000
Plains, Town of	Town of Plains Water Facilities Preliminary Engineering Report	$8,500
Powell County	Milwaukee Roundhouse CECRA Facility Remediation Project Grant Application	$6,000
Fort Benton, City of	Baker House Cultural and Lead Assessment	$19,870
Mineral County	Remedial Investigation of the Milwaukee Road - Haugan CECRA Facility	$49,998
Rosebud Conservation District	South Eastern Montana Coal Seam Fire Suppression Phase 1 and Phase 2 Planning	$50,000
Sand Coulee Water District	Sand Coulee Wastewater Preliminary Engineering Report	$40,000
Lewis and Clark County Water Quality Protection District	Grizzly Gulch Placer Mine Reclamation	$6,000
Beaverhead Conservation District	Elkhorn Mine and Mill Site Characterization and Investigative Alternatives Analysis	$42,500
Deer Lodge, City of	Milwaukee Roundhouse CECRA Facility/Passenger Refueling Area Portion Remediation Proposal for Groundwater	$13,000
Missoula County	Ninemile Creek Reclamation, Phase 7 Planning	$40,000
Ruby Valley Conservation District	Granite Creek Planning Phase 2	$4,500
	TOTAL	**$442,245**

Note: CECRA = Comprehensive Environmental Cleanup and Responsibility Act, also known as the State Superfund Program; EPA = Environmental Protection Agency

CHAPTER V
Reclamation and Development Grants Program
Montana Salinity Control Association

The 2015 Legislature authorized $214,000 to assist the Montana Salinity Control Association with one-time-only funding to upgrade aging vehicles and outdated office and field equipment and for staff salary to manage the project. Montana Salinity Control Association refurbished its drill rig in June 2016, expending $115,000. The remaining $99,000 was used to: 1) replace a field vehicle; 2) replace and upgrade existing field and office equipment; and 3) staff salaries. The project is complete.

2021

Montana Department of Natural Resources and Conservation

1539 Eleventh Avenue
PO Box 201601
Helena, Montana 59620
406/444-6668
www.dnrc.mt.gov