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Renewable Resource Grant and Loan Program

Department of Natural Resources and Conservation

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Renewable Resource Grant and Loan Program

Project Evaluations and Funding Recommendations
For the 2019 Biennium

and

2017 Biennium Status Report

Prepared by the

Montana
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Conservation and Resource Development Division
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LIST OF ABBREVIATIONS

AC ..... asbestos cement
AOC..... Administrative Order on Consent
BNSF..... Burlington Northern Santa Fe
BRIPD1 ..... Buffalo Rapids Irrigation Project District, Phase 1
BRIPD2 ..... Buffalo Rapids Irrigation Project District, Phase 2
CARDD..... Conservation and Resource Development Division, DNRC
CD ..... Conservation District
CDBG ..... Community Development Block Grant
cfs..... cubic feet per second
CIPP ..... cast-in-place pipe
CMZ..... Channel Migration Zone
CST ..... Coal Severance Tax
cy..... cubic yards
DEQ..... Montana Department of Environmental Quality
DNRC ..... Montana Department of Natural Resources and Conservation
EWM..... Eurasian Watermilfoil
FEMA ..... Federal Emergency Management Agency
FSID ..... Fort Shaw Irrigation District
FWP ..... Montana Department of Fish, Wildlife and Parks
FY..... Fiscal Year
GLID ..... Glen Lake Irrigation District
GSC..... Geological Survey of Canada
gpd ..... gallons per day
gpm ..... gallons per minute
HDPE ..... high-density polyethylene
HPID..... Huntley Project Irrigation District
HVID..... Helena Valley Irrigation District
ID..... Irrigation District
IDG ..... Irrigation Development Grant
IR..... Irrigation
kW ..... kilowatt
kWh ..... kilowatt-hours
LID..... Lockwood Irrigation District
LUST ..... leaking underground storage tank
LYIP..... Lower Yellowstone Irrigation Project
MBMG ..... Montana Bureau of Mines and Geology
MCA ..... Montana Code Annotated
mg ..... million gallons
mg/l..... milligrams per liter
NCMRWA..... North Central Montana Regional Water Authority
NRCS ..... Natural Resources Conservation Service, U.S. Department of Agriculture
NRDP ..... Montana Natural Resources Damages Program
O&M ..... operation and maintenance
PCCRC..... Pondera County Canal and Reservoir Company
PER ..... Preliminary Engineering Report
PVC ..... polyvinyl chloride
RD ..... Rural Development
RDB..... Resource Development Bureau
RRGL ..... Renewable Resource Grant and Loan
SCADA..... supervisory control and data acquisition
SD ..... Sewer District
SRF ..... State Revolving Fund
SWUID ..... Sidney Water Users Irrigation District
TID..... Toston Irrigation District

TSEP ..... Treasure State Endowment Program
TSS ..... total suspended solids
USACE ..... U.S. Army Corps of Engineers
USBR ..... U.S. Bureau of Reclamation, U.S. Department of the Interior
US HUD ICDBG ..... Indian Community Development Block Grant Program
UV ..... ultraviolet
VCP ..... vitrified clay pipe
VFD ..... variable frequency drive
W ..... Water
WM ..... Water Management
WMG ..... Watershed Management Grants
WQD ..... Water Quality District
WRDA ..... Water Resources Development Act
WSD ..... Water and Sewer District
WTP ..... water treatment plant
WUA ..... Water Users Association
WW ..... Wastewater

ALPHABETICAL INDEX OF PROJECTS

Applications for Funding During the 2019 Biennium

This table provides an alphabetical list (by applicant) of the 94 grant and loan proposals submitted in 2016 that have requested funds during the 2019 biennium. Page numbers correspond to the project evaluation contained in this report.

CHAPTER I
The Renewable Resource Grant and Loan Program

Background
The Renewable Resource Grant and Loan (RRGL) program is the product of two earlier resource management programs: the Renewable Resource Development program established in 1975 and the Water Development program established in 1981. In 1993, the two natural resource grant programs were combined to form the RRGL program. At that time, the Department of Natural Resources and Conservation (DNRC) Resource Development Bureau assumed responsibility for administering the RRGL program as stipulated under Title 85, part 6, MCA. Combining the two programs streamlined program administration but did not change applicant and project eligibility criteria.

The 2007 Legislature revised the funding structure of the RRGL program by establishing two Special State Revenue Accounts (SSRA): the Natural Resources Projects SSRA and the Natural Resources Operations SSRA. The projects SSRA receives revenue to be used exclusively for grant projects and programs authorized in statute. Funds from this account are shared by the RRGL and the Reclamation and Development Grants programs. The Natural Resources Operations SSRA funds expenses necessarily incurred in the administration of these two grant programs.

Purpose
The purpose of the RRGL program is to further the state's policies, set forth in Section 85-1-101, MCA, regarding the conservation, development, and beneficial use of renewable resources and to invest in renewable resource projects that will preserve for the citizens of Montana the economic and other benefits of the state's natural heritage.

Project and Applicant Eligibility
Grants and loans are available for projects that conserve, manage, develop, or preserve the state's water, land, vegetation, fish, wildlife, recreation, and other renewable resources. The majority of projects funded under this program are water resource projects followed by forestry, soil conservation, renewable energy, and solid waste projects. Project funding is available for construction, research, design, demonstration, and planning.

Chapters II and III of this report present information on RRGL grants and loans to public entities. Chapter IV describes loans and grants to private entities. Chapter V presents the Irrigation Development Grants program for public and private entities, and Chapter VI describes emergency grants and loans to public entities. Chapter VII presents the Planning Grant program for public entities. Chapter VIII presents the Watershed Management Grants program, Chapter IX addresses the Septic Loan Grant program, and Chapter X of this report summarizes public grants and projects funded by previous Legislatures that remained active during the 2017 biennium.

Funding Limitations
The law does not impose specific limitations on the amount of grant funding that the Legislature may provide for renewable resource projects proposed by governmental entities. Grant recommendations presented to the Long-Range Planning Subcommittee by DNRC are for limited amounts. Project grant limits are $125,000. Grant limits are put in place to obtain optimal public benefit from the investment of public funds. Proposed funding levels do not constrain legislative authority to appropriate grants and loans in amounts the Legislature deems appropriate.

Funding Authority
The public and private renewable resource loan programs are funded through the issuance of general obligation and coal severance tax bonds.

In 2015, the Legislature appropriated $4,172,615 for Renewable Resource Project Grants; $700,000 was appropriated for planning grants, $200,000 for irrigation development grants, $100,000 for emergency grants, $300,000 for watershed management grants, and $100,000 for septic loan grants.

Program Implementation
DNRC's role in the management of the RRGL program is specified in Part 6 of Title 85. By statute (85-1-605, MCA), DNRC only makes project-funding recommendations. The Legislature appropriates the actual awards of those grants and authorizes loans to governmental entities that it finds consistent with the policies and purposes of the program. In presenting recommendations to the Legislature, DNRC provides information about each project for legislative consideration. All public grant requests are ranked by DNRC to demonstrate the potential value of a given project compared to all other grant requests. Grant requests that do not meet minimum technical and financial standards are not recommended by DNRC for funding. DNRC manages the grants and loans according to conditions set out in the DNRC report to the Legislature and in the legislative appropriations bill.

DNRC provides the staffing necessary to administer state and local government assistance under the RRGL program. DNRC administers grants and loans to private entities within specific parameters for the award of these funds (85-1-606-614, MCA). DNRC publicizes the statutes and rules that govern these loans and sets application deadlines. Private entities also comply with additional eligibility criteria, as set forth in 85-1-609 and 610, MCA.

Rule-Making Authority
DNRC may propose and adopt rules to clarify statutory requirements. DNRC cannot expand or limit the mission of the RRGL beyond legislative intent. DNRC does not have the authority to limit the amount of public grants or to narrow the range of eligible grants based on DNRC priorities. Title 85, MCA, directs DNRC to adopt rules that prescribe the application fee and content for grant and loan applications. DNRC also determines the ranking criteria used to evaluate and prioritize public grant applications and the process for awarding grants and loans to private entities according to statute. DNRC authority provides for the servicing of loans and determination of the terms and conditions for making grants and loans.

Program Goals
DNRC seeks to meet program purpose through the following practices:

- Inform the public and private sectors that grant and loan funding for water and other renewable resource projects is available, that certain applicant eligibility criteria for obtaining funds exist, and that projects that meet the purposes of Title 85, MCA, qualify for funding;
- Coordinate with other state and federal agencies to support projects requiring multiple funding sources, facilitate a uniform application process for infrastructure projects, and to award funds without duplication;
- Solicit public comment and suggestions for improvements to the program;
- Evaluate grant projects on the basis of technical merit and the resource benefits established in statute;
- Effectively administer grants and loans to ensure that funds are used for allowable costs and that projects are executed in accordance with conditions set by the Legislature and in compliance with Title 85, MCA, and other applicable laws, without undue burden to the recipient;
- Offer loans at the most affordable rates available through the sale of bonds;
- Adequately secure loans to protect the investment of public funds; and
- Advise the Legislature concerning DNRC efforts to effectively administer the program according to statute and legislative intent.

CHAPTER II
Renewable Resource Grants to Public Entities

Application Administration and Project Review Procedures

Typically the DNRC Resource Development Bureau accepts applications for public grants and loans submitted or postmarked by May 15 of each even-numbered year. Because May 15, 2016 fell on a Sunday, the application deadline for projects described in this chapter was extended to May 16. DNRC requires a $250 fee with each application.

Project Solicitation

DNRC solicits project applications broadly because it seeks to maintain the competitive nature of the program. Those projects that most closely meet statutory priorities rank the highest and are most likely to rank above the cut-off point for available funding.

DNRC maintains an extensive mailing list to promote the program and to solicit applications from eligible applicants. Mailing lists include Montana county governments, cities and towns, the university system, state agencies, environmental organizations, water users associations, irrigation districts, water and sewer districts, Tribal governments, and conservation districts.

Promotion for the 2016 application cycle began with press releases in February 2016. DNRC sent postcards to local governments and nonprofits with general program information, a telephone number, e-mail address, and mailing address to request more information and application forms and guidelines. In addition, DNRC staff conducted nine workshops throughout Montana in 2015 and 2016 to present funding opportunities to local governments. Application guidelines are available in hard copy and online on the DNRC website. Applications must be submitted online through www.fundingmt.org.

The DNRC received 94 applications in May 2016 requesting a total of $11.5 million. In the previous 2014 cycle, 101 applicants requested $12.5 million in grant funding.

The RRGL application requests the following information for each project:

- A proposal abstract summarizing the project and its merits;
- A technical narrative describing the project's purpose, history, and prior efforts; specific goals and objectives, as well as a discussion of project alternatives; and documentation supporting the technical narrative;
- A financial narrative and budget forms describing the project's funding structure;
- Affordability data used to evaluate the local financial commitment for infrastructure projects, including a description of the applicant's ability to pay, such as potential to generate revenue through fees or taxes;
- A project management plan which outlines the steps that will be made to ensure successful project implementation;
- A discussion of public and natural resource benefits achieved by the proposed project; and
- An environmental checklist identifying adverse environmental impacts that may occur as a result of the project.

Application Review

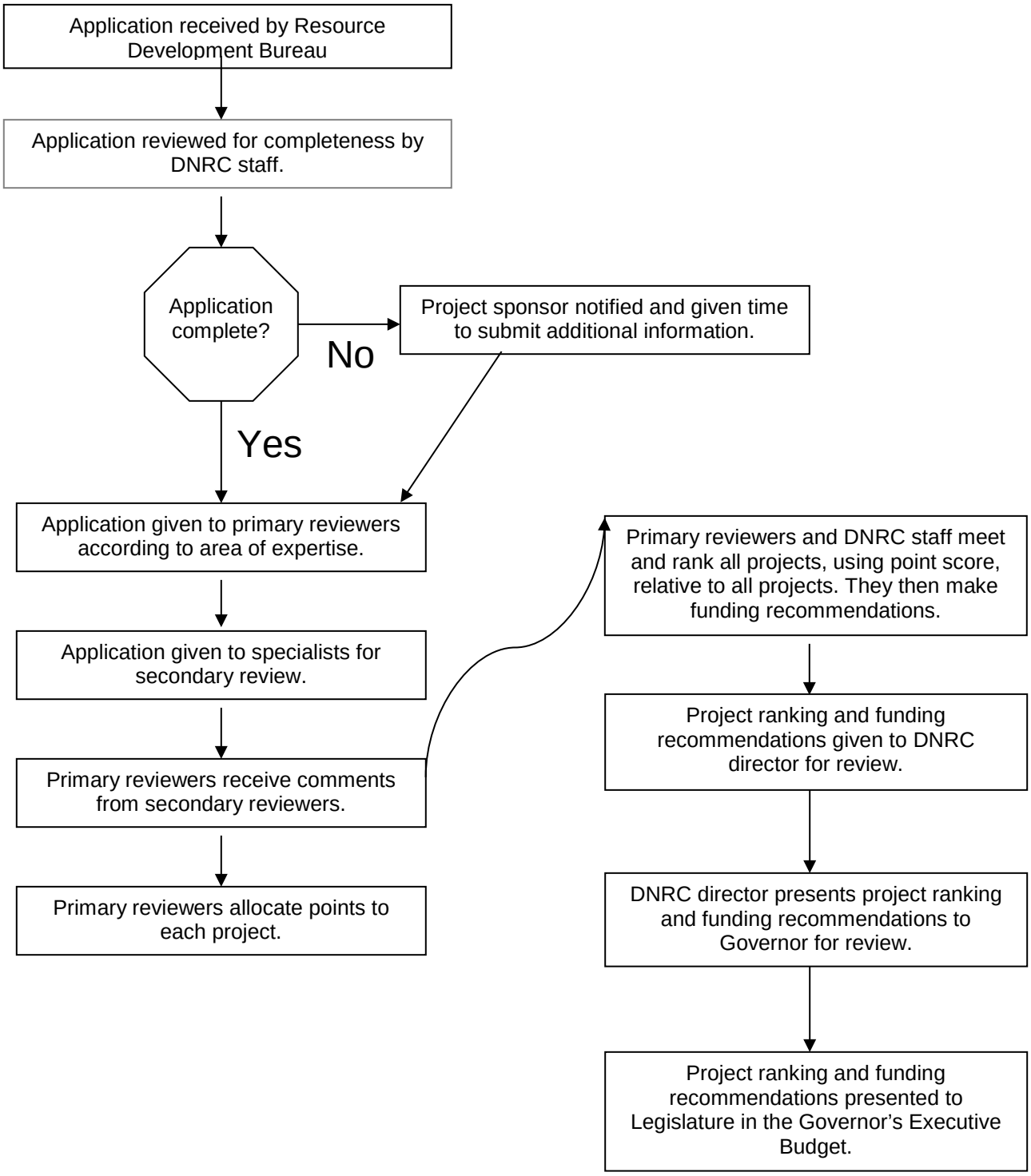
All applications received by the deadline were evaluated for completeness. The DNRC notified applicants concerning missing documentation, application fees, or other basic requirements and provided time for applicants to submit additional material. The DNRC then distributed the applications to a team of primary reviewers for evaluation. Primary reviewers included DNRC staff, engineers, and consultants procured by DNRC. Projects were assigned based on the reviewer's area of expertise.

Applications also underwent one or more secondary reviews. Secondary reviewers provided information on regulatory requirements, existing natural resource management plans, and specialized technical issues. Secondary reviewers included staff from DNRC, other state agencies, and contracted specialists.

Figure 1 shows the flow of the grant application review and ranking process. The technical review team evaluated each application by project type to ensure that the proposal was technically and financially feasible. During project review, the reviewer could request additional detailed technical and financial information from applicants. With the results of their own evaluations and comments from secondary reviewers, key reviewers assessed and documented the merits of each proposal based on standard review criteria outlined in the ranking form.

During application review, DNRC also sought views of interested and affected parties. Local, state, and federal agencies, environmental groups, private organizations, and universities are solicited for input during the technical review of applications. DNRC developed guidelines specifically for application review to ensure a consistent basis for reviewing applications.

FIGURE 1 Flowchart of Grant Application Review and Ranking Process



Project Ranking Criteria

To obtain an objective evaluation of all applications, DNRC developed a standard ranking form containing review instructions and guidelines. Each key reviewer completes a ranking form for each application to document the merits of the proposal and the resulting score.

Each key reviewer assigns a score to reflect project merit under the following five primary categories:

1. Resource and Citizen Benefits

This criterion carries the heaviest weight when scoring a project, and evaluates how well the project meets program purpose as set forth in 85-1-101, MCA, regarding the conservation, development, and beneficial use of water resources. Resource and citizen benefits associated with each application are evaluated by DNRC staff on the basis of the following:

A. How the project would measurably enhance renewable resources in Montana through implementing resource conservation, development, preservation, and/or management practices;
B. How the project would contribute to economic development in Montana or help existing businesses;
C. How the project increases understanding of how a renewable resource would benefit Montana citizens;
D. How the project coordinates with ongoing or planned actions;
E. How the project benefits multiple uses; and
F. Evidence of public support.

2. Technical Feasibility

Each application is evaluated based on:

A. Compliance with application requirements;
B. Adequacy of the alternatives analysis;
C. Adequacy of cost estimates for potential alternatives and the preferred alternative;
D. Soundness of the basis used in selecting the preferred alternative;
E. Feasibility of the project's implementation schedule; and
F. The quality of supporting technical data.

3. Project Management and Implementation

How well the application provides for the management of the proposed project. Applicants are expected to address staffing and coordination, public involvement, and contract management, contracts with consultants, and construction contracts.

4. Financial Feasibility

Is the budget reasonable, is the project affordable to the users, and is the funding package feasible?

5. Environmental Impact

Each project was evaluated for the potential to cause adverse environmental impacts. In the event that long-term environmental impacts could occur as a result of the project, contingencies were attached to the funding recommendations to minimize impacts and to ensure that appropriate steps would be taken to protect the environment.

Key reviewers score project applications individually based on project feasibility, project management, and implementation, then meet to compare like projects (such as irrigation projects, for example). Key reviewers discuss the merits and deficiencies of all like projects and reconcile scores. Discussion by the entire review committee increases ranking fairness by minimizing inconsistencies between scores given by individual reviewers. After scores are reconciled, DNRC staff meets to reconcile scores based on the degree to which a project will conserve, develop, manage, or preserve renewable resources. Finally, DNRC staff develops a final ranked list based on all scoring criteria, for recommendation to the DNRC director.

DNRC's ranking system is used to determine the relative merit of every proposal submitted for grant funding. Ranking scores are used as a guide for the staff to select projects that best serve the programs objectives as stipulated by statute.

Either DNRC's director or the Governor may make adjustments to the recommendations to reflect their assessment of state natural resource needs and other policy priorities. An appropriations bill containing project ranking recommendations is drafted and introduced to the Legislature. Actual funding decisions are made by the Legislature. Not bound by DNRC's review criteria or the Governor's final ranking, the Legislature ultimately authorizes funding for the projects in the order of priority and in the amounts it judges will best serve the state.

Funding Recommendations
All feasible grant requests were ranked according to standard criteria to select those that would meet the program's purpose as defined in state statute. In conjunction with its recommendation for funding priority, DNRC made its recommendations concerning the amount of funding to be awarded to each project. Funding recommendations are presented to the Legislature as part of this report **(Table 1)**. Grant applications recommended for funding during the 2019 biennium included seven types of projects **(Figure 2):** drinking water, wastewater, irrigation, dams, groundwater, studies and research, and water management. A map showing project locations is presented as **(Figure 3)**.

With the Governor's approval, final funding recommendations are presented to the Legislature as part of this report. These recommendations do not impose limits on the amount of funding the Legislature may provide to any governmental entity for a single grant project.

Project Management
After the appropriations bill is enacted to authorize grants and loans, DNRC will notify applicants of their funding status. Sponsors of funded projects are reminded that work on their projects may not begin before entering into a grant or loan agreement with DNRC. DNRC will not reimburse any project cost incurred before legislative authorization is given or before a formal funding agreement is executed.

Project Monitoring
Procedures for monitoring projects are governed by a grant contract agreement between DNRC and the project sponsor. The equivalent of four full-time staff oversees 300–400 active projects at any given time. DNRC attempts to make site inspection visits to all large projects during the construction phase. Site visits are made to spot check for problems or to respond to a request for assistance from the project sponsor. Budget and staffing constraints preclude DNRC site involvement at every project site.

Grant agreements require progress reports, expenditure reports, and a final report. Program staff document decisions and conversations that affect ongoing projects. DNRC is flexible when considering scope changes as long as the project achieves the goals described in this document's project write-up. Amendments to grant agreements are prepared and issued in response to any problems that require changes to the timeline or budget.

Project sponsors submit claims and obtain reimbursement of allowable costs from DNRC. Invoices may be submitted monthly, and all costs must be fully supported by an invoice or receipt.

Project Evaluation
DNRC evaluates the ultimate success of renewable resource grants through a final report. Upon project completion, DNRC requires a report that documents project history and results of the expenditure of grant dollars. Evaluation through a final project report enables DNRC to measure how well the project implemented program goals. Projects are considered successful if they complete the scope of work outlined in the grant agreement and achieve predicted renewable resource benefits.

Table 1 2016 Grant Applications by Order of Ranking Recommendation

Ranked Order	Project Sponsor/Project Name	Recommended Grant Funding	Cumulative Recommended	Recommended Loan Funding
1	**Helena Valley Irrigation District** Gate Automation	$125,000	$125,000	
2	**Granite County** Flint Creek Dam Resource Enhancement	$125,000	$250,000	
3	**Bozeman, City of** Sunset Hills Cemetery and Lindley Park Water Conservation	$125,000	$375,000	
4	**Broadwater Conservation District** Avalanche Irrigation District Irrigation System Improvements	$125,000	$500,000	$6,000,000
5	**Medicine Lake, Town of** Wastewater System Improvements	$125,000	$625,000	
6	**Ward Irrigation District** Ward Canal Intake Improvements	$125,000	$750,000	
7	**Sweet Grass County Conservation District** Boe-Engle Ditch Diversion Infrastructure Improvements	$106,640	$856,640	
8	**Beaverhead Conservation District** Poindexter Slough Fishery Enhancement, Phase 3	$125,000	$981,640	
9	**Crow Tribe of Indians** Wastewater Collection System Improvements, Phase 3	$125,000	$1,106,640	
10	**Stillwater Conservation District** Yanzick/Brey-Riddle Ditches Irrigation System Improvements	$125,000	$1,231,640	
11	**Lewis and Clark County Sewer District** Wastewater System Improvements	$125,000	$1,356,640	
12	**Froid, Town of** Wastewater System Improvements	$125,000	$1,481,640	
13	**Townsend, City of** Wastewater System Improvements	$125,000	$1,606,640	
14	**South Wind Water and Sewer District** Water and Wastewater System Improvements, Phase 3	$125,000	$1,731,640	
15	**Poplar, City of** Wastewater System Improvements	$125,000	$1,856,640	
16	**Lower Yellowstone Irrigation Project** Lateral O Check and Terminal Wasteway Rehabilitation	$125,000	$1,981,640	
17	**Stillwater County-Absarokee Sewer Rural Special Improvement District** Wastewater System Improvements	$125,000	$2,106,640	
18	**Ryegate, Town of** Wastewater System Improvements	$125,000	$2,231,640	
19	**Huntley Project Irrigation District** Lower Main Canal Lining, Phase 2	$125,000	$2,356,640	
20	**Helena Valley Irrigation District** Lateral 14.8 Rehabilitation, Phase 1	$125,000	$2,481,640	
21	**Broadwater Conservation District** Big Springs Ditch Water Conservation, Phase 2	$125,000	$2,606,640	

Ranked Order	Project Sponsor/Project Name	Recommended Grant Funding	Cumulative Recommended	Recommended Loan Funding
22	**Thompson Falls, City of** Wastewater System Improvements	$125,000	$2,731,640	
23	**Pondera County Conservation District** Pondera County Canal and Reservoir Company KB2 Canal Rehabilitation, Phase 2	$125,000	$2,856,640	
24	**Malta Irrigation District** Exeter Siphon Replacement	$125,000	$2,981,640	
25	**Sidney Water Users Irrigation District** Main Canal Pipeline Conversion	$125,000	$3,106,640	
26	**Buffalo Rapids Irrigation District 2** Shirley Main Canal Rehabilitation	$125,000	$3,231,640	
27	**Fort Shaw Irrigation District** D-System Water Conservation	$125,000	$3,356,640	
28	**Cascade, Town of** Wastewater System Improvements	$125,000	$3,481,640	
29	**Helena, City of** Westside Wastewater System Improvements	$125,000	$3,606,640	
30	**Eureka, Town of** Wastewater Expansion and Improvement, Phase 1B	$100,000	$3,706,640	
31	**Whitefish, City of** Wastewater System Improvements	$125,000	$3,831,640	
32	**Black Eagle-Cascade County Water and Sewer District** Sewer Main Slip Mining	$125,000	$3,956,640	
33	**Thompson Falls, City of** Water System Improvements	$125,000	$4,081,640	
34	**Dutton, Town of** Water System Improvements	$125,000	$4,206,640	
35	**Fallon County** Baker Lake Restoration	$100,000	$4,306,640	
36	**Madison County** Big Hole River Streambank Rehabilitation	$125,000	$4,431,640	
37	**Glen Lake Irrigation District** Costich Drop Rehabilitation, Phase 1	$125,000	$4,556,640	
38	**Harlowton, City of** Water System Improvements, Phase 4	$125,000	$4,681,640	
39	**Alberton, Town of** Water System Improvements	$125,000	$4,806,640	
40	**Buffalo Rapids Irrigation District 1** Lateral 20.6 Pipeline Conversion, Phase 2	$125,000	$4,931,640	
41	**Chouteau County Conservation District** Ranching for Rivers: Cost Share to Landowners for Infrastructure Improvements for Grazing Management on the Missouri River	$125,000	$5,056,640	
42	**Judith Gap, Town of** Wastewater System Improvements, Phase 2	$125,000	$5,181,640	
43	**Flathead Conservation District** Krause Creek Restoration	$116,000	$5,297,640	
44	**Sanders County Sewer District at Paradise** Wastewater System Improvements	$125,000	$5,422,640	
45	**Jefferson County** Jefferson Slough Eurasian Watermilfoil Control	$96,530	$5,519,170	

Ranked Order	Project Sponsor/Project Name	Recommended Grant Funding	Cumulative Recommended	Recommended Loan Funding
46	**Huntley Project Irrigation District** Tunnel 2- Discharge Line Rehabilitation	$125,000	$5,644,170	$13,586,820
47	**Simms County Sewer District** Wastewater System Improvements	$125,000	$5,769,170	
48	**Cut Bank, City of** Water System Improvements	$125,000	$5,894,170	
49	**Montana Department of Natural Resources and Conservation-Water Resources Division State Water Projects Bureau** Flint Creek Water Project-Allendale Canal Intake and Fish Screen	$125,000	$6,019,170	
50	**Sheridan, Town of** Water System Improvements	$125,000	$6,144,170	
51	**Fort Peck Tribes** Lateral L-42M Rehabilitation, Phase 1	$125,000	$6,269,170	
52	**Toston Irrigation District** Main Canal Rehabilitation	$125,000	$6,394,170	
53	**Laurel, City of** Water System Improvements	$125,000	$6,519,170	
54	**Clinton Irrigation District** Main Canal Wasteway Rehabilitation and Intake Canal Improvements	$125,000	$6,644,170	
55	**Tin Cup Water and Sewer District** Water Conservation	$125,000	$6,769,170	
56	**Jordan, Town of** Wastewater System Improvements	$125,000	$6,894,170	
57	**Lincoln County** Ksanka Creek Restoration-Highway 93 to Osloski Road	$125,000	$7,019,170	
58	**Manhattan, Town of** Wastewater System Improvements	$125,000	$7,144,170	
59	**Lower Musselshell Conservation District** Musselshell River Channel Migration Zone Mapping	$125,000	$7,269,170	
60	**Shelby, City of** Water System Improvements	$125,000	$7,394,170	
61	**Montana Department of Natural Resources and Conservation-Water Resources Division State Water Projects Bureau** Broadwater Missouri Canal System Study and Masterplan	$100,000	$7,494,170	
62	**Montana Department of Natural Resources and Conservation-Water Resources Division State Water Projects Bureau** East Fork Rock Creek Main Canal Lining	$125,000	$7,619,170	
63	**Roundup, City of** Water System Improvements	$125,000	$7,744,170	
64	**Custer County** Custer County Miles City Flood Control	$125,000	$7,869,170	
65	**Scobey, City of** Water System Improvements	$125,000	$7,994,170	
66	**Wilsall Water District** Water System Improvements	$125,000	$8,119,170	

Ranked Order	Project Sponsor/Project Name	Recommended Grant Funding	Cumulative Recommended	Recommended Loan Funding
67	**Hot Springs, Town of** Water System Improvements	$125,000	$8,244,170	
68	**Winifred, Town of** Water System Improvements	$125,000	$8,369,170	
69	**Montana Department of Natural Resources and Conservation-Water Resources Division State Water Projects Bureau** Nevada Creek Water Project-Douglas Canal Lining Replacement	$125,000	$8,494,170	
70	**Denton, Town of** Water System Improvements	$125,000	$8,619,170	
71	**Fort Benton, City of** Water System Improvements	$125,000	$8,744,170	
72	**Absarokee Water and Sewer District** Water System Improvements	$125,000	$8,869,170	
73	**Hysham Irrigation District** Re-Lift Canal Improvement	$125,000	$8,994,170	
74	**Deer Lodge, City of** Municipal Well Replacement	$125,000	$9,119,170	
75	**Flathead Conservation District** Whitefish Water Treatment Plan and Resource Optimization	$ 86,000	$9,205,170	
76	**Toole County Conservation District** Eagle Aquifer Evaluation, North-Central Montana	$116,230	$9,321,400	
77	**Missoula County** Sunset West Water System Improvements	$125,000	$9,446,400	
78	**Gallatin Local Water Quality District** Bridger Range Front Hydrogeologic Investigation	$125,000	$9,571,400	
79	**Missoula, City of** Restoration and Migration of Public Access Damage-Clark Fork River, Phase 1	$125,000	$9,696,400	
80	**Circle, Town of** Water System Improvements	$125,000	$9,821,400	
81	**Stanford, Town of** Water System Improvements	$125,000	$9,946,400	
82	**West Great Falls Flood Control and Drainage District** Riverbank Erosion Rehabilitation and Repairs	$125,000	$10,071,400	
83	**Nine Mile Water and Sewer District** Water System Improvements	$125,000	$10,196,400	
84	**Montana Bureau of Mines and Geology-Montana Tech** Irrigation Efficiencies and Domestic Groundwater Supplies	$125,000	$10,321,400	
85	**Brady County Water and Sewer District** Water System Improvements	$109,400	$10,430,800	
86	**Bigfork County Water and Sewer District** Water Storage and Distribution Improvements	$125,000	$10,555,800	
87	**Chinook, City of** Water System Upgrades	$125,000	$10,680,800	

Ranked Order	Project Sponsor/Project Name	Recommended Grant Funding	Cumulative Recommended	Recommended Loan Funding
88	**Lockwood Irrigation District** Pump Station Rehabilitation	$125,000	$10,805,800	
89	**RAE County Water and Sewer District** Falcon Hollow #2 Well	$125,000	$10,930,800	
90	**Malta, City of** Water System Improvements	$125,000	$11,055,800	
91	**Lockwood Water and Sewer District** Water System Improvements	$125,000	$11,180,800	
92	**Ekalaka, Town of** Flood Study	$125,000	$11,305,800	
93	**Conrad, City of** Water System Improvements	$125,000	$11,430,800	
94	**Sweet Grass County Conservation District** Yellowstone River Channel Stabilization and Surface Water Protection, Phase 2	$125,000	$11,555,800	

Figure 2 Requested Funding by Project Type

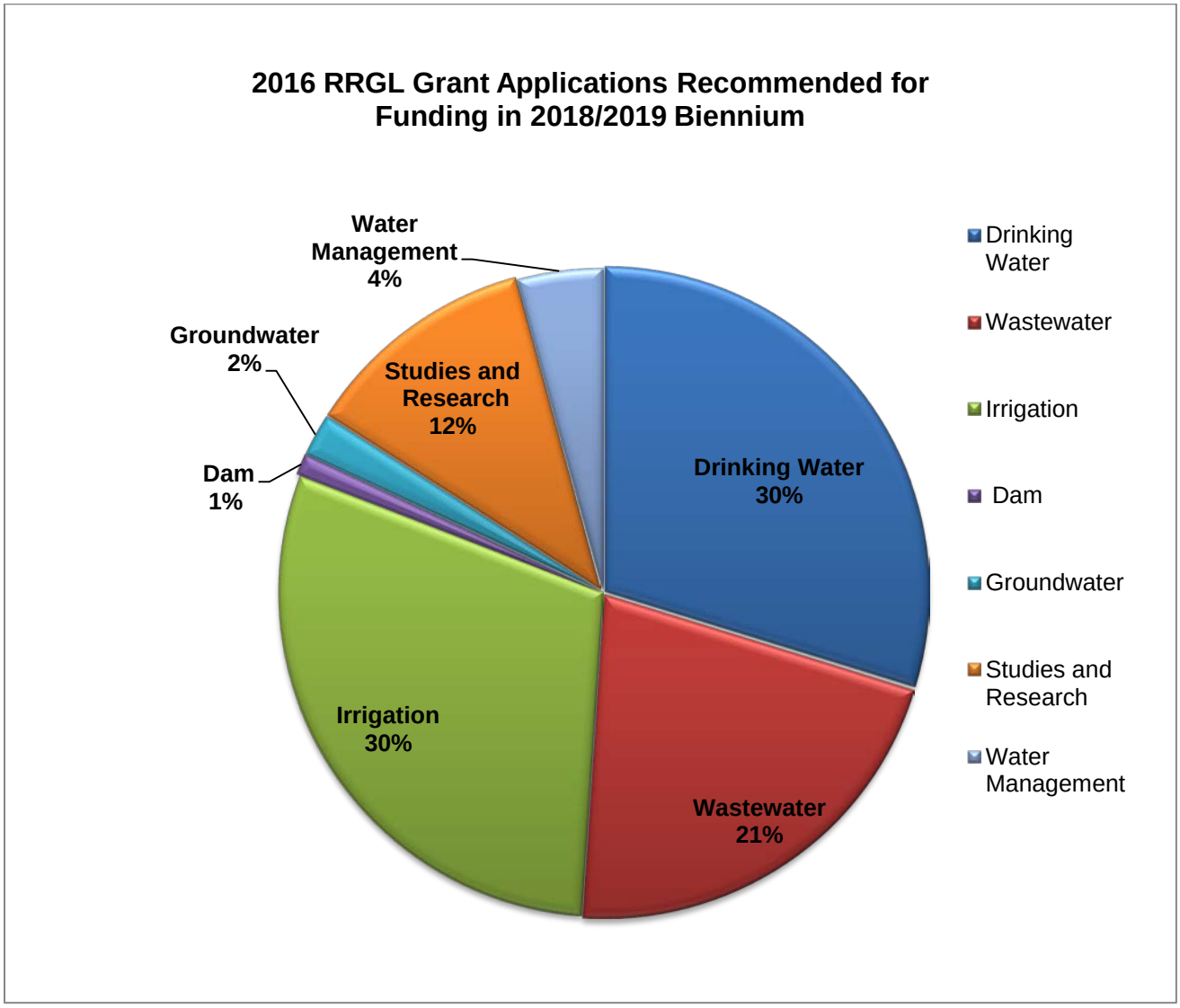
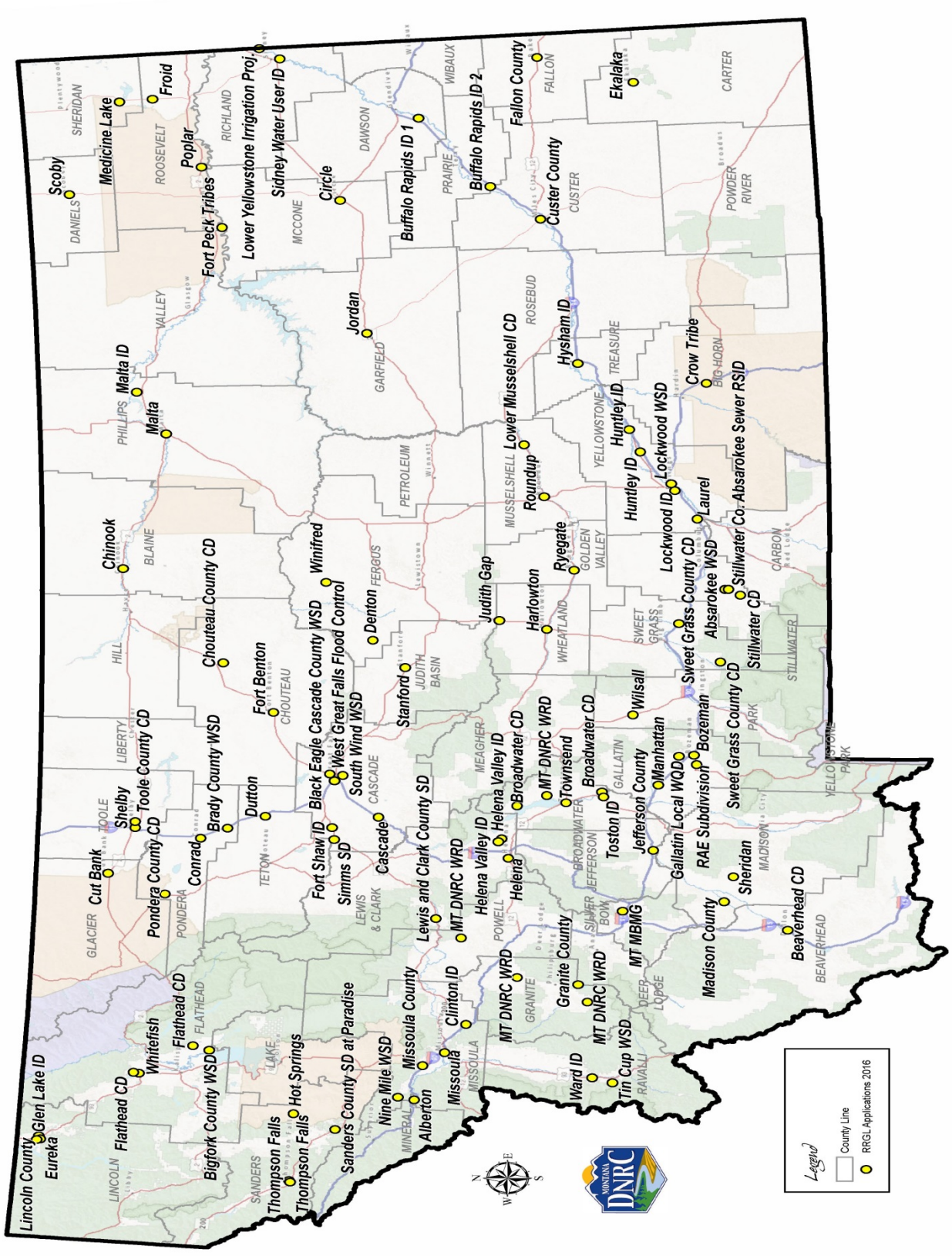


Figure 3 2016 RRGL Applications – Location Map



Project No. 1

Applicant Name	Helena Valley Irrigation District	
Project Name	Gate Automation	
Amount Requested	$ 125,000	
Other Funding Source	$ 36,900	Applicant In-kind
Total Project Cost	$ 161,900	
Amount Recommended	$ 125,000	

Project History
The Helena Valley Irrigation District (HVID) is in Lewis and Clark County. It provides water to the irrigation district and to the Helena drinking water supply. The proposed gate automation has been identified by HVID and the U.S. Bureau of Reclamation (USBR) as a priority for the HVID system due to high operation and maintenance costs, safety hazards, and water conservation struggles. The proposed project aims to ensure water delivery to existing users, reduce operation and maintenance costs, and provide a safe operating condition for HVID personnel. The proposed improvements will conserve water and result in a savings of approximately 175 man-hours per year.

Proposed Solution
The HVID Gate Automation project involves implementation of an electronic system to allow remote control and monitoring of the gates that control the outflow from the Helena Valley Regulating Reservoir.

Specific task includes:

- Retrofit the existing gate to include a monitoring and control (supervisory control and data acquisition) known as a SCADA system.

Resource and Citizen Benefits Analysis
HVID estimates that installation of a SCADA system will conserve 10,284 acre-feet of water annually. Although the proposal does not include imminent plans for resource development, it does identify the potential for the HVID system to service additional agricultural and domestic water uses in the Helena Valley. Better regulation of the Helena Valley Regulating Reservoir will benefit its kokanee salmon population by preserving habitat stability. This project will also improve the reliability of HVID to preserve streamflows in Prickly Pear Creek, which is classified by FWP as a dewatered concern area, by providing an alternative source for irrigators with rights to draw approximately 2,000 acre-feet from that stream. The enhanced system efficiency and conservation will help to preserve irrigated acres during drought, and improve the reliability of the 11,300 acre-feet that HVID provides annually to the city of Helena.

HVID will improve its own economic efficiency by eliminating 175 man-hours per year spent commuting 20 miles round trip for each adjustment of the gate on the Helena Valley Regulating Reservoir. The avoided fuel and labor costs and increased productivity are positive economic benefits for HVID. HVID estimates that greater system efficiency will result in a 7% increase in production for existing irrigated acres and $672,017 in additional annual revenue for producers on the system.

The project will provide recreational benefits by preserving the kokanee salmon habitat in the Helena Valley Regulating Reservoir, and preserving the reliability of streamflows in Prickly Pear Creek. The amount of water conserved could also indirectly benefit recreation on other reservoirs by allowing them to conserve water. Improving the drought resilience of HVID's system is a public health benefit to all of its water users. This proposal does a thorough job of quantifying all claimed benefits, identifying how public and citizen benefits will be measured and documented. The measurable public and citizen benefits are substantial and significant on many levels.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 2

Applicant Name	Granite County	
Project Name	Flint Creek Dam Resource Enhancement	
Amount Requested	$ 125,000	
Other Funding Sources	$ 43,560	Applicant
	$ 3,360	Applicant In-kind
Total Project Cost	$ 171,920	
Amount Recommended	$ 125,000	

Project History
Flint Creek Dam on Georgetown Lake provides water for recreation, agriculture, and hydropower for the Flint Creek Hydroelectric Facility downstream from the dam. The outlet structure of the dam has a leaking gate valve on the hydropower water line and the stilling basin at the downstream toe of the dam is experiencing erosional damage from outflows. The goals of this project are to replace the leaking valve and to repair damage to the stilling basin in order to maintain the dam's safety and to provide uninterrupted water flow for downstream hydropower generation.

Proposed Solution
Specific tasks include:

- Select and hire an engineering firm to complete the final engineering design, prepare construction contract documents and assist with bids, and conduct construction oversight and administration;
- Select and hire a construction contractor to replace the valve and repair the stilling basin; and
- Close out the project by developing record drawings and a final project report.

Resource and Citizen Benefits Analysis
This project will develop the Flint Creek Hydroelectric Facility's ability to produce renewable energy that is used on a regional scale. The project benefits resources by preserving surface water quality and aquatic habitat in Flint Creek through erosion reduction.

The public benefits from this project include: economic development, safety, and recreation. Should the gate fail and the lake have to be lowered, the regional economic and recreational impacts would be significant, since repairs would likely take months to complete and for the lake to refill. Minor safety benefits will result from the removal of a hazard by replacing the unstable gabions with stable rock riprap.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 3

Applicant Name	Bozeman, City of	
Project Name	Sunset Hills Cemetery and Lindley Park Water Conservation	
Amount Requested	$ 125,000	
Other Funding Sources	$ 450,000	Applicant
	$ 300,000	USBR
Total Project Cost	$ 875,000	
Amount Recommended	$ 125,000	

Project History
The city of Bozeman owns the Sunset Hills Cemetery and Lindley Park (86 acres), which are adjoining lands on the east side of Bozeman. The city is presently irrigating the grounds of both areas using a combination of groundwater from a single well and treated water from the potable distribution system. The city is also the owner of an unused irrigation water right on Bozeman Creek (also known as Sourdough Creek), historically used to irrigate the same 86 acres.

Proposed Solution
The city desires to complete a project to utilize the Bozeman Creek irrigation water right via the Story Ditch diversion, discontinuing the use of potable water and groundwater. The project would improve the diversion on Bozeman Creek, partially line the ditch, construct a pump station to lift water from Story Ditch to the park and cemetery areas, construct pipelines connecting the pump station to the irrigation system, and complete irrigation system leak detection and repairs. Due to these improvements, the annual diversion from Bozeman Creek would be reduced by approximately 1,082 acre-feet.

Specific tasks include:

- Replace the Bozeman Creek diversion to Story Ditch with a new automated diversion and aquatic species passage rock ramp;
- Line 1,100 feet of Story Ditch using primarily 36-inch diameter half-pipe construction;
- Construct a 1,250 gallon per minute (minimum) pump station on Story Ditch;
- Construct 1,220 feet of PVC pipeline from the pump station to the irrigation system; and
- Complete leak detection and repair of the existing irrigation system.

Resource and Citizen Benefits Analysis
The proposed project will conserve water through: (1) replacement of a diversion structure on Bozeman Creek with an automated headgate adds an additional 1,082 acre-feet/year in the creek; (2) lining Story Ditch to eliminate carriage loss will add 3.6 cfs; (3) fixing leakage in the Sunset Hills Cemetery irrigation distribution system will add 8.4 acre-feet per irrigation season; (4) replacing the existing source of treated drinking water originating from Hyalite Reservoir with the new source of surface water directly from Bozeman Creek will free up 42.7 acre-feet per year of reservoir water for other uses; and (5) reducing the use of groundwater for supplemental irrigation of the Sunset Hills Cemetery and Lindley Park saves 25 acre-feet of groundwater per year. This project will also conserve energy by eliminating the use of treated water for irrigation, and preserve connectivity of fish habitat in Bozeman Creek by eliminating the existing stop log diversion barrier.

Economic benefits to the city of Bozeman are estimated to be at least $25,618 per year. Replacing the diversion structure will benefit the health and safety of city of Bozeman employees. The project will also benefit the public health and safety of Bozeman residents by improving the reliability of the city's drinking water supply. Resource-based recreation may benefit to a small degree because the project will improve fish habitat connectivity.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 4

Applicant Name	Broadwater Conservation District	
Project Name	Avalanche Irrigation District Irrigation System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$6,000,000	RRGL Loan
	$2,293,200	Private Loans
	$ 79,800	Applicant
Total Project Cost	$8,498,000	
Amount Recommended	$ 125,000	

Project History
This project includes the design and construction of a new irrigation system to deliver water to 8,863 acres of privately owned land immediately east of Canyon Ferry Reservoir with provisions included to allow an additional 1.985 acres of State land. The irrigation water will be taken from Canyon Ferry Reservoir and is included in water set aside for this purpose as part of the Canyon Ferry Dam Construction Mitigation program. The total water that will be pumped from the reservoir at full development is estimated at 15,700 acre-feet. The project will replace about 900 acre-feet of water presently being withdrawn from Avalanche and Confederate Creeks for irrigation allowing this water to remain in the creeks. Water will be withdrawn from the lake by six pump stations and delivered to the landowner's pivot irrigation equipment.

Proposed Solution
Specific tasks include:

- Complete the formation of the Avalanche ID;
- Obtain a bridge loan to fund permitting and design;
- Advertise and bid the project in accordance with applicable state statutes;
- Construct the project; and
- Submit progress reports and a Closeout Report to DNRC.

Resource and Citizen Benefits Analysis
This project will provide multiple benefits to multiple resources. The project will benefit arable land by developing up to 10,000 acres plus of irrigation. A preservation benefit for restoration of the natural flow to Avalanche and Confederate Creeks will happen when the new source of water is developed out of Canyon Ferry Reservoir. This is also a conservation of surface water from these creeks. A preservation benefit for the fish and wildlife habitats on the creeks will occur as the natural flow is restored. The creeks are identified as rainbow trout spawning channels.

This project creates a large economic benefit for the area producers, which has been valued at up to $27-million and new production with an additional 38 full time and 175 seasonal positions.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

This grant will be available to applicant contingent on the following conditions:

- The Avalanche Irrigation District becomes a legal entity and acquires a feasible funding package for the entire project; and
- The grant scope of work is for activities that result in renewable resource benefits.

Project No. 5

Applicant Name	Medicine Lake, Town of	
Project Name	Wastewater System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 625,000	TSEP
	$1,455,450	RD Loan
	$ 485,150	RD Grant
	$ 40,000	Local
Total Project Cost	$2,730,600	
Amount Recommended	$ 125,000	

Project History
Medicine Lake's wastewater collection system was constructed in the 1940s and the facultative treatment lagoons were constructed in 1971. In 1998 a lift station was installed near the treatment lagoons to pump the collected wastewater into the treatment lagoons. The system has severe leakage, excessive sludge depth, erosion on the interior lagoon slopes, no acceptable way to measure the discharge flow rate, no additional hydraulic capacity, unreliable lift station pumps, and clogged or broken lagoon piping. Further, this system will not be able to meet the future discharge permit limits for disinfection and nutrients without significant improvements.

Proposed Solution
Specific tasks include:

- Remove, dry, and land-apply existing lagoon sludge;
- Rehabilitate the existing lift station;
- Perform video inspection of the collection system;
- Create a collection system replacement plan;
- Rehabilitate the existing facultative lagoons;
- Construct a new storage lagoon cell;
- Construct a new pump station and UV disinfection system; and
- Retrofit an existing center pivot land application of the treated wastewater.

Resource and Citizen Benefits
This project preserves groundwater quality by eliminating 4.8 million-gallons per year of leakage of untreated sewage from treatment lagoons and decreases the risk of release of untreated sewage surface discharge to Big Muddy Ditch and the Medicine Lake Wildlife Refuge. It conserves energy by installing a more efficient pump at the lift station and conserves groundwater by reducing withdrawals for field irrigation by 16.7% or 11 million-gallons per year and sustains local crop production to a small degree.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 6

Applicant Name	Ward Irrigation District	
Project Name	Ward Canal Intake Improvements	
Amount Requested	$ 125,000	
Other Funding Source	$ 3,850	Applicant In-kind
Total Project Cost	$ 128,850	
Amount Recommended	$ 125,000	

Project History
The Ward Irrigation District is in Ravalli County near Hamilton. The district serves 101 irrigators and 965 acres of irrigated land in the Bitterroot Valley. The Ward Canal Intake Improvements project involves replacement of the upstream side of the intake structure and floor and investigation of the natural migration of the Bitterroot River to define potential solutions for delivering the water to the intake more reliably. Currently, the intake structure is in poor condition and not able to completely seal river water from entering the irrigation system. Additionally, natural migration of the Bitterroot River away from the intake structure through accretion is putting the entire system at risk of not accessing its irrigation water right.

Proposed Solution
The proposed project aims to preserve a reliable supply of irrigation water, preserve aquatic habitat through elimination of unnecessary diversion of flows during the non-irrigation season, reduce annual maintenance, and find a solution to the migration of the river away from the intake structure. The proposed improvements will save approximately 1,752 acre-feet of water per year diverted from the Bitterroot River.

Specific tasks include:

- Demolish and remove all existing concrete on the upstream side of the intake structure;
- Salvage and reuse both headgates on the structure;
- Excavate additional soil to below scour depth line;
- Place concrete footings and walls;
- Place concrete wing walls to match existing wall elevations; and
- Study the Bitterroot River's recent migration due to accretion.

Resource and Citizen Benefits Analysis
The proposed project will conserve surface water and energy through upgrades to the irrigation delivery system by reducing seepage. The reduced leakage will result in less surface water diversion and pump usage. The project will also preserve water quality and protect habitat by allowing more water to stay in the Bitterroot River.

This project will enable the farmers and ranchers in the Ward Irrigation District to benefit economically through increased production and will continue to allow recreational opportunities on the Bitterroot River.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 7

Applicant Name	Sweetgrass County Conservation District
Project Name	Boe-Engle Ditch Diversion Infrastructure Improvements
Amount Requested	$ 106,640
Total Project Cost	$ 106,640
Amount Recommended	$ 106,640

Project History
The current Boe-Engle Ditch diversion structure in the East Boulder River is dilapidated and in danger of failure. The structure leaks water during the non-irrigation season and requires annual in-stream machine work to capture flow from the river. The ditch serves five water users who irrigate about 1,500 acres of hayground.

Proposed Solution
Specific tasks include:

- Demolish the existing headgate structure;
- Form and pour a new rebar enforced headgate structure and re-use the existing steel slide gates;
- Construct a new rock vane U-weir diversion structure;
- Riprap 50 feet of the bank upstream and downstream of the new headgate; and
- Install a new wastegate structure and return channel to the river downstream from the headgate.

Resource and Citizen Benefits Analysis
This project will conserve surface water in the East Boulder River by replacing the headgate and eliminating leakage of river water into the Boe-Engle Ditch during the nonirrigation season, and by installing a wastegate to return excess ditch flows back to the river during the irrigation season. Replacing the headgate to mitigate the risk of avulsion of the East Boulder River into the Boe-Engle Ditch will also preserve surface water quality, the East Boulder River fishery, irrigated agricultural land, and stream geomorphology and functionality.

The economic benefits of the project stem from reduction of maintenance costs associated with upkeep of the current dilapidated Boe-Engle diversion infrastructure, and ensuring that the five water users on the Boe-Engle Ditch can continue to put water to beneficial use and contribute to the local economy in Sweet Grass County. Public safety will benefit from reduced risk of diversion structure failure which would result in damage to property and infrastructure, and reduced occupational risk to managers tasked with operation and maintenance of the structure. The East Boulder River fishery is classified by Montana Department of Fish, Wildlife, & Parks (FWP) as having outstanding fisheries value, and this project's benefits to the fishery will also benefit the quality of angling recreation.

Funding Recommendation
DNRC recommends grant funding of $106,640 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 8

Applicant Name	Beaverhead Conservation District	
Project Name	Poindexter Slough Fishery Enhancement, Phase 3	
Amount Requested	$ 124,199	
Other Funding Source	$ 15,000	Applicant In-kind
Total Project Cost	$ 139,199	
Amount Recommended	$ 125,000	

Project History
Poindexter Slough is a historic, spring-enhanced channel of the Beaverhead River. The slough is isolated from the river and flows are controlled with a headgate that provides irrigation water for the Dillon Canal. Flows in Poindexter Slough are currently quite low and lack the energy to scour and maintain historic bed features such as pools. The Montana Department of Fish, Wildlife & Parks (FWP) has documented a significant decline in the trout fishery over the last two decades. The initial two phases of the project, one of which was partially funded with RRGL funds, restored 22,000 feet of the stream using sediment removal, gravel placement, pool creation, channel narrowing, and woody vegetation plantings. The first two phases also replaced the diversion structure connecting Poindexter to the Beaverhead River and the headgate for the Dillon Canal. Recent sampling by FWP has found that significant numbers of adult brown trout have moved into the restored portion of Poindexter Slough from the Beaverhead River. This application is to complete the lower 3,100 feet of the restoration which will connect the restored stream to the Beaverhead River.

Proposed Solution
Specific tasks include:

- Construct pool and riffle habitat;
- Reduce channel width with sod mats;
- Remove silt deposition layers;
- Stabilize eroding banks;
- Transplant willows; and
- Post project monitoring and maintenance.

Resource and Citizen Benefits Analysis
The purpose of this project is to restore renewable resources by improving fish habitat and water quality in Poindexter Slough. The preferred alternative identified by the preliminary engineering report (PER) is to employ an active approach to channel enhancement by increasing the quantity and depth of pool habitat, restoring appropriate width-to-depth ratios for riffles and pools, removing or isolating fine sediment deposits from the stream bed, and encouraging natural recruitment of willows and other woody riparian vegetation. The proposed project would restore resources by improving fish habitat and water quality in Poindexter Slough.

The primary purpose of this project is to conserve water quality and quantity, maintain a regionally significant fishery, and protect public safety.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 9

Applicant Name	Crow Tribe of Indians	
Project Name	Wastewater Collection System Improvements, Phase 3	
Amount Requested	$ 125,000	
Other Funding Sources	$ 750,000	TSEP
	$ 200,000	Coal Board
	$ 450,000	CDBG
	$1,000,000	US HUD ICDBG
	$1,615,000	Applicant
Total Project Cost	$4,140,000	
Amount Recommended	$ 125,000	

Project History
Failures of the Crow Agency wastewater collection system have resulted in raw sewage surfacing as well as backing up into homes. The failing lines are being replaced through a multi-phase project approach. The East Frontage Road lift station serves the hospital, nursing home, daycare, police department, casino, and four private businesses. During the flood event in May 2011, the East Frontage Road lift station was inundated with flood water and was rendered inoperable and inaccessible for repairs. All facilities served by the East Frontage Road lift station were without sewer service for 10 days. Patients in the hospital and residents of the nursing home had to be evacuated. The goal of the project is to eliminate the public health and safety issues associated with the failing sewer mains and the flooding potential at the lift station.

Proposed Solution
Specific tasks include:

- Replace approximately 6,720 linear feet of existing 8- to 10-inch clay tile wastewater pipe with 8- to 12-inch PVC pipe; and
- Construct a new East Frontage Road lift station in a new location outside of the flood-prone area.

Resource and Citizen Benefits Analysis
The project will eliminate the potential for raw sewage to reach surface water, and result in preservation of water, fish, and wildlife habitat. Resource benefits are locally significant. The benefits cannot be quantified, although a previous significant flood and surfacing of raw sewage is documented.

The project has multiple regional public and citizen benefits. The project will mitigate risks to human health and safety. The lift station serves critical health care facilities and other businesses and supports over 200 jobs. The project will ensure that the sewer system continues to support the community.

The project will implement community planning efforts. The Tribe has demonstrated long-term commitment to community planning to develop and prepare improvements to its wastewater system.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 10

Applicant Name	Stillwater Conservation District	
Project Name	Yanzick/Brey-Riddle Ditches Irrigation System Improvements	
Amount Requested	$ 125,000	
Other Funding Source	$ 30,342	Yanzick/Brey Riddle Ditch Users
Total Project Cost	$ 155,342	
Amount Recommended	$ 125,000	

Project History
The Yanzick and Brey-Riddle are irrigation ditches with points of diversion on the Stillwater River, approximately 20 miles upstream of where the Stillwater River discharges into the Yellowstone River. Infrastructure associated with both ditches generally consists of a large, unstable rock wing diversion and concrete headgate/wastegate structure. Typical maintenance consists of removing debris from the diversions and headgates and reconstructing the diversion structures with motorized equipment following spring runoff. The headworks for both ditches are nearing the end of their serviceable lives and significantly impede sediment transport, fish passage, and boater passage on the adjacent river reach. The Stillwater Valley Watershed Council, Stillwater Conservation District, Yanzick Ditch users, and Brey-Riddle Ditch users require a long-term solution for both ditches to improve management, ensure continued water delivery to existing Yanzick and Brey-Riddle irrigation systems, reduce annual operation and maintenance efforts, and maintain stream function and water quality in the Stillwater River.

Proposed Solution
Specific tasks include:

- Enlarge and lower about 2,000 feet of the Yanzick Ditch from the current point of diversion;
- Replace 3 culverts to accommodate the Yanzick Ditch and Brey-Riddle Ditch water rights;
- Install a new rock vane structure capable of diverting full water rights during low flow;
- Replace the Yanzick Ditch headgate with a new concrete structure;
- Install a new concrete gate in the Yanzick Ditch to divert water to the Brey-Riddle Ditch;
- Lower the Yanzick Ditch and replace a culvert between the new gate and the ditch pump house to accommodate only the Yanzick water rights; and
- Demolish and reclaim the Brey-Riddle diversion and headgate structures.

Resource and Citizen Benefits Analysis
This project will have multiple benefits to multiple resources. Conservation of surface water will result with the installation of the new headgate to stop the unintentional diversion of water. Without the need for the twice annual disturbance in the Stillwater River by building and removing the diversion dam in the streambed, the water quality, aquatic life and fish habitat will experience a preservation benefit. The project will preserve 76 irrigated acres.

The project will have an economic public benefit through increased and sustained agricultural revenues. Installation of a permanent rock vane wall in the Stillwater River benefits employee safety by no longer requiring installation of the rock diversion structure every year. A recreation and safety benefit will result when the diversion structure no longer blocks 70% of the river during the irrigation season.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 11

Applicant Name	Lewis and Clark County Sewer District	
Project Name	Wastewater System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 280,000	TSEP
	$ 155,000	SRF Loan
Total Project Cost	$ 560,000	
Amount Recommended	$ 125,000	

Project History
The Lincoln Sewer System was constructed in 1986. The system includes a collection system, pump stations, and a wastewater treatment plant. The majority of the pump station components date back to the original construction date. The Center Avenue and Blackfoot pump stations are unreliable due to age. Failures at either pump station will negatively affect area groundwater and surface water. The proposed project will rehabilitate the Center Avenue and Blackfoot pump stations.

Proposed Solution
Specific tasks include:

- Replace mechanical and electrical components in the wet wells and valve vaults of the Blackfoot and Center Avenue lift stations;
- Clean and repair the interior of the wet wells;
- Replace the electrical and control systems;
- Implement flow monitoring at each station; and
- Provide an emergency portable bypass pumping system.

Resource and Citizen Benefits Analysis
The proposed project is primarily a public health and safety project. The project will protect groundwater and surface water by preventing wastewater leakage or back-flow of sewage into private residences. The project is locally significant given the proximity to the Blackfoot River and local water supply. The project will address pathogen and nitrogen direct contributions to the drinking water supply.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 12

Applicant Name	Froid, Town of	
Project Name	Wastewater System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 750,000	TSEP
	$ 608,350	RD Grant
	$1,825,200	RD Loan
	$ 5,000	Applicant In-kind
Total Project Cost	$3,313,550	
Amount Recommended	$ 125,000	

Project History
In 1994 the town of Froid improved its wastewater treatment system by replacing it with a three-cell lagoon system discharging to Sheep Creek, updating the existing lift station, and adding a new lift station at the lagoon site. Since the 1994 improvements to the wastewater system, the clay lagoon liners have deteriorated to the point where they are no longer containing the wastewater allowing direct transmission of untreated wastewater to underlying groundwater. Sheep Creek is eroding the bank next to the treatment lagoon dike and has the potential to cause the dike to fail allowing direct surface water contamination within Sheep Creek. The town has received an Administrative Order on Consent (AOC) from the Montana Department of Environmental Quality (DEQ) to address its wastewater problem. The project is proposed to protect groundwater and surface water.

In July of 2004 the collection system was rehabilitated by replacing 8,290 linear feet of mains and replacing 16 manholes. The lift station pumps at both sites within the collection system are reaching the end of their useful life and are lacking a backup power source. There are several manholes throughout the wastewater system that are allowing significant infiltration of clear water into the collection system. The additional flow is causing additional costs for treatment and producing extra demand on the lift station pumps.

Proposed Solution
The proposed solution is to rehabilitate portions of the collection system and install a new wastewater treatment plant.

Specific tasks include:
- Replace 12 manholes within the collection system;
- Replace one of the pumps at the lagoon lift station;
- Replace both pumps at the First Avenue lift station;
- Install backup power at both lift stations;
- Install a two-cell total retention lagoon system with PVC liners; and
- Test project components and put into use.

Resource and Citizen Benefits Analysis
Groundwater quality will be preserved and protected from contamination from raw sewage by converting the lagoon to a two-cell total retention lagoon. The installation of new pumps at the lift stations will conserve energy by improving efficiency. The installation of emergency generators at each of the lift stations will provide safety benefits and potentially preserve surface water quality during power outages or extreme storm events. All of these improvements will provide public health benefits to the local community.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 13

Applicant Name	Townsend, City of	
Project Name	Wastewater System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 625,000	TSEP
	$4,322,725	SRF Loan
Total Project Cost	$5,072,725	
Amount Recommended	$ 125,000	

Project History
The wastewater system operated and maintained by the applicant consists of about 50,000 feet of gravity collection system pipeline, a master lift station, and an aerated pond system for treatment. A majority of the problematic areas of the collection system has been rehabilitated using a cured-in-place pipe (CIPP) lining system, but areas of the system with leaking vitrified clay pipe remain to be lined. The master lift station requires excessive maintenance and poses an unsafe work environment to operators because of confined space issues and improper ventilation. The aerated pond system is unable to consistently meet the requirements of the current Montana Department of Environmental Quality permit, and new limits will require disinfection, which is not provided by the existing system.

Proposed Solution
Specific tasks include:

- Rehabilitate the remaining 4,880 linear feet of leaking collection system with a cured-in-place pipe lining system;
- Install a new wet well with submersible pumps and retrofit the upper levels of the existing lift station with new piping and controls;
- Remove and dispose accumulated sludge from the existing aerated pond system; and
- Enhance the performance of the wastewater treatment system by adding headworks and mechanical screen equipment, a fine bubble aeration system, and ultraviolet light disinfection.

Resource and Citizen Benefits Analysis
The project will benefit the safety and health of the residents in and around Townsend. The project will preserve groundwater by replacing leaking sewer collection main piping. The project will also preserve fish and wildlife habitat by the reduction of leakage and ammonia discharged to the Missouri River.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 14

Applicant Name	South Wind Water and Sewer District	
Project Name	Water and Wastewater System Improvements, Phase 3	
Amount Requested	$ 125,000	
Other Funding Sources	$ 750,000	TSEP
	$ 683,500	SRF Loan
Total Project Cost	$1,558,500	
Amount Recommended	$ 125,000	

Project History
Trailer Terrace is a mobile home court located outside of Great Falls that was originally created to house Minuteman Missile construction workers. In 2011, a petition for creation of a water and sewer district (WSD) was successfully circulated to residents and creation of the South Wind WSD followed. At the time the district was created there were multiple issues with both the water and sewer system. Water deficiencies included inadequate drinking water quality, water storage, and water supply. Wastewater deficiencies included inadequate lagoon volume, leaking collection system piping, inadequate or missing manholes, and hydrogen sulfide attack on concrete pipes and manholes. The proposed project is the third phase of a larger project to address these deficiencies. Phase 1 included a new well, pump, well house, water storage tank, water distribution, and sewer collection improvements to the south half of the district. Phase 2 is currently ongoing and will include improvements to the wastewater treatment system. The Phase 3 improvements include installation, replacement, rehabilitation of the water distribution system, and sewer collection system on the north half of the district. This project will be the project's final phase and is designed to increase water pressure, water supply, wastewater capacity, and protect groundwater by reducing raw wastewater seepage.

Proposed Solution
Specific tasks include:

- Install 2,980 feet of 4-inch and 6-inch PVC water main piping, with gate valves, and flushing hydrants;
- Install 5,200 feet of ¾-inch water service lines;
- Clean and televise existing sewer mains;
- Replace or rehabilitate 1,940 feet of sewer main;
- Install 10 manholes; and
- Install 5,200 feet of sewer service including cleanouts.

Resource and Citizen Benefits Analysis
The project will provide energy conservation benefits by eliminating leakage and reducing pumping run times for the water distribution system. Additionally, groundwater, which is the drinking water source for the system, will be protected from raw sewage contamination by eliminating exfiltration of raw sewage from the existing wastewater system collection lines. Raw sewage backups and the potential contamination of the groundwater aquifer from which the system draws its drinking water will be reduced or eliminated, providing significant public health benefits.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 15

Applicant Name	Poplar, City of	
Project Name	Wastewater System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 750,000	TSEP
	$ 450,000	CDBG
	$ 700,000	RD Loan
	$2,000,000	RD Indian Set-Aside Grant
	$ 300,000	RD Grant
Total Project Cost	$4,325,000	
Amount Recommended	$ 125,000	

Project History
Poplar is on the north bank of the Missouri River and is bounded on the north and west by the Poplar River. The confluence of the Poplar River with the Missouri River is approximately one mile upstream from Poplar. The purpose of this wastewater project is to upgrade aging wastewater collection infrastructure throughout Poplar. The mains to be upgraded (lined or replaced) were inventoried through video inspection in April 2016. Poplar prioritized upgrades due to broken and/or sagging sewer mains to address the highest priority problems. This project will greatly reduce inflow of groundwater into the sewer mains and manholes, increasing the capacity of the treatment system. Area groundwater contamination from the sewer main leakage will also be reduced. There are approximately 90 water wells in the project area with depths ranging 19 feet to 140 feet. These wells are used for domestic water, public water supply, monitoring, test wells, livestock, and irrigation. The groundwater contamination from the failing sewer mains has the potential to affect the environment and the health of Poplar's citizens as well as residents downstream from Poplar. This wastewater improvement project will improve the groundwater quality in the area, benefiting people, livestock, wildlife, and the environment.

Proposed Solution
Specific tasks include:

- Install 40,000 linear feet of sewer main; and
- Install 200 manholes.

Resource and Citizen Benefits Analysis
The proposed project will make improvements to the collection system and reduce infiltration and inflow. The project will conserve energy and groundwater and protect groundwater from contamination. The proposed project will benefit renewable resources by preserving groundwater from wastewater contamination and by conserving groundwater from removing groundwater inflow into the wastewater collection system.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 16

Applicant Name	Lower Yellowstone Irrigation Project	
Project Name	Lateral O Check and Terminal Wasteway Rehabilitation	
Amount Requested	$ 125,000	
Other Funding Source	$ 47,140	Applicant In-kind
Total Project Cost	$ 172,140	
Amount Recommended	$ 125,000	

Project History
The Lower Yellowstone Irrigation Project (LYIP) is in Richland County near Sidney. The LYIP Lateral O Check and Terminal Wasteway Rehabilitation project involves retrofitting the two structures to include new gates. The existing structures are in remote areas and consist of wooden check boards that require manual operation, creating dangerous operating conditions and inefficient irrigation management. The proposed project aims to improve management of the irrigation system, conserve water diverted from the Yellowstone River, preserve the water quality of return discharge to the Missouri River, and improve control of the flow within the irrigation system. The proposed improvements would conserve approximately 526 million-gallons of water per year diverted from the Yellowstone River.

Proposed Solution
Specific tasks include:

- Retrofit the Lateral O Check and Terminal Wasteway with new gates and gate actuators;
- Install walkway grates and handrail for maintenance procedures; and
- Incorporate an automated flow data collection system known as SCADA (supervisory control and data acquisition) system.

Resource and Citizen Benefits Analysis
This project will have multiple benefits to multiple resources. The project will provide a development benefit through an increase in crop production by 10% and a possible increase in the number of acres irrigated. A preservation benefit will occur for the fish and wildlife habitat and water quality for both of the Yellowstone and Missouri Rivers through sediment reduction. An additional development of solar energy benefit will occur with the use of solar panels to operate and record data from the newly installed operation structures.

A local economic benefit will occur with the increase in crop production and added acres. A local safety benefit will occur with the new control structures that will keep the LYIP employees from operating dangerous and dilapidated control and check structures.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 17

Applicant Name	Stillwater County – Absarokee Sewer Rural Special Improvement District	
Project Name	Wastewater System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$1,192,250	RD Grant
	$3,576,750	RD Loan
Total Project Cost	$4,894,000	
Amount Recommended	$ 125,000	

Project History
Absarokee's lagoon system and the outdated ultraviolet (UV) disinfection system do not meet regulatory limits for biological oxygen demand, total suspended solids, *E. coli*, and ammonia limits as defined in its discharge permit. The discharge of inadequately treated wastewater greatly impacts the water quality of Rosebud Creek. It also endangers aquatic organisms and the health and safety of not only community residents, but also that of people living or recreating downstream from the wastewater facilities. Poor UV disinfection is also a threat to downstream users. Despite excessive inflow and infiltration for much of the year (500,000 gpd of 750,000 gpd during irrigation months), the system must be upgraded to meet existing and future limits. While excessive inflow and infiltration should be addressed, an administrative order requiring wastewater treatment upgrades must take precedence.

Proposed Solution
Specific tasks include:

- Replace the existing UV disinfection system with new UV disinfection system;
- Replace blower and aeration equipment;
- Rehabilitate the existing lagoons;
- Construct new lagoon cell; and
- Construct new Submerged Attached Growth Reactor treatment system.

Resource and Citizen Benefits Analysis
The project will preserve groundwater quality by rehabilitating the leaking sewage lagoons. The surface water quality and aquatic ecosystems of Rosebud Creek and the Stillwater River will also be preserved and protected from the harmful effects of inadequately treated wastewater effluent. These streams have recreational value and therefore resource-based recreation will benefit. Improving the sewage treatment system will benefit public health and safety.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 18

Applicant Name	Ryegate, Town of	
Project Name	Wastewater System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 500,000	TSEP
	$ 853,685	RD Grant
	$ 443,315	RD Loan
Total Project Cost	$1,922,000	
Amount Recommended	$ 125,000	

Project History
Ryegate is in Golden Valley County near the Musselshell River. The original wastewater system was construct in 1967 and includes collection mains, a lift station and facultative lagoons. The system is under a discharge permit to the Musselshell River via an unnamed slough, but the lagoons have reportedly not discharged since their original construction. A lagoon leakage test performed in 2012 indicates the lagoons are seeping at a rate which is greater than the current Montana Department of Environmental Quality (DEQ) standards. Groundwater models indicate leaking wastewater may be affecting six domestic water wells in the vicinity of the lagoons. The structural integrity of the lagoon dikes is also in question due to wave action erosion and rodent damage. DEQ inspections and correspondence have also indicated issues with the control structures, flow monitoring, and pH monitoring at the lagoons.

Proposed Solution
The town proposes to rehabilitate the wastewater lagoons, lift station, and provide a low-maintenance, non-discharging system to comply with DEQ recommendations.

Specific tasks include:
- Rehabilitate the existing lift station interior;
- Remove and dispose of existing lagoon sludge;
- Remove the existing facultative lagoons;
- Construct a new total retention lagoon system with liner, control structures, and flow meter; and
- Test project components and put into use.

Resource and Citizen Benefits Analysis
The proposed project would significantly benefit Montana's renewable resources through the preservation of the water resources of the Musselshell River. The proposed improvements will benefit groundwater through reducing wastewater leakage from lagoon. Groundwater modeling shows that at least six groundwater wells are in the lagoon's leakage zone. The leakage is a public threat to wells within 2,500 feet of the lagoon. Currently, there is no disinfection system in place to treat the wastewater stored in the lagoons. Energy will also be conserved due to upgrades to the system.

Due the lagoon leakage affecting the groundwater table, hydraulic effects from lagoon leakage, and the proximity to the Musselshell River, this project is of major local significance.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 19

Applicant Name	Huntley Project Irrigation District	
Project Name	Lower Main Canal Lining, Phase 2	
Amount Requested	$ 125,000	
Other Funding Source	$ 124,428	Applicant In-kind
Total Project Cost	$ 249,428	
Amount Recommended	$ 125,000	

Project History
The Huntley Project Irrigation District (HPID) diverts water from the Yellowstone River for irrigation on approximately 30,000 acres. The HPID is seeking to continue this lining project on the Lower Main Canal near the eastern end of the district's system. This 4,000-foot section of canal has been identified as losing about 6.8 cfs of flow to seepage during peak irrigation. The seepage has also caused damage to approximately 20 acres of adjacent lands due to saline soil conditions. The project seeks to design and install a liner to eliminate seepage losses from this section of canal. The HPID has been actively pursuing and completing projects to reduce seepage losses in the irrigation water delivery system for some time.

Proposed Solution
Specific tasks include:

- Reshape the existing canal to a trapezoidal cross section with 10-foot bottom;
- Install 15,541 square yards of canal liner along 4,000 feet of canal; and
- Place ballast rock in bottom of lined canal.

Resource and Citizen Benefits Analysis
This project has renewable resource benefits by increasing delivery efficiency of surface water through reshaping and lining ¾ of a mile of canal. The lining will eliminate an estimated 2,123 acre-feet of water lost to seepage during the irrigation season. The project also provides renewable resource conservation benefits through the savings of energy at the pumping station. As well, the lining will decrease sediment discharge into the Yellowstone River thus preserving water quality.

Economic benefits will accrue to the agriculture-based community through increased crop production of $94,176 per year and a stabilized bank along the Yellowstone will also benefit the public.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package

Project No. 20

Applicant Name	Helena Valley Irrigation District	
Project Name	Lateral 14.8 Rehabilitation, Phase1	
Amount Requested	$ 125,000	
Other Funding Source	$ 78,663	Applicant In-kind
Total Project Cost	$ 203,663	
Amount Recommended	$ 125,000	

Project History
The Helena Valley Irrigation District (HVID) is in Lewis and Clark County. Currently, the canal is experiencing severe seepage losses. Pier 5 was identified in a 2014 U.S. Bureau of Reclamation (USBR) report as a Category 2 item due to damaged concrete and grout which make the water delivery system susceptible to operational failure. The proposed project aims to conserve water, improve management of water resources in the both the delivery system and application, preserve soil quality in the region impacted by salinity damage due to seepage, and preserve water delivery. The proposed improvements conserve approximately 233 million-gallons of water annually.

Proposed Solution
The HVID Lateral 14.8 Project, Phase 2, and Pier 5 Replacement project involves canal reshaping and grading, installation of a canal liner, and making concrete repairs to a pipeline support pier.

Specific tasks include:
- Reshape and regrade a 5,000-foot canal reach;
- Install a geomembrane canal liner;
- Remove all damaged concrete and grout from Pier 5;
- Inspect embedded metalwork; and
- Replace metalwork if excessive corrosion or damage has occurred.

Resource and Citizen Benefits Analysis
The HVID will be converting from an open lateral ditch to a closed pipeline which will prevent current saline seepage. The district will realize energy conservation as pumping demands will be less. The irrigators in the district may be able to increase the acres that are currently in production.

This project also benefits the district to meet the contractual obligation of supplying drinking water to Helena without dewatering surface water resources.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 21

Applicant Name	Broadwater Conservation District	
Project Name	Big Springs Ditch Water Conservation, Phase 2	
Amount Requested	$ 125,000	
Other Funding Sources	$ 300,000	USBR
	$ 50,000	FWP
	$1,103,836	Big Springs Ditch
Total Project Cost	$1,578,836	
Amount Recommended	$ 125,000	

Project History
The Big Springs Ditch supplies irrigation water to approximately 2,646 acres of farmland. The ditch is for the most part an unlined open channel. Phase 1 of the Big Springs Ditch Water Conservation project included the construction of 3,050 linear feet of pipe at the beginning of the ditch. Phase 2 proposes to convert the next 6,300 feet of open channel to pipe. The ditch is located within Broadwater County, approximately 2.5 miles south of Toston. The irrigation distribution system delivers water from a natural artesian spring known as Big Springs for approximately nine miles in a northwesterly direction between the Missouri River and the Montana Rail Link rail line. Due to highly permeable soils within the project area, the ditch experiences a significant amount of water loss through seepage. Furthermore, due to the close proximity of the railroad and the Missouri River, the ditch has very steep slopes on either side that are susceptible to erosion and have shown signs of instability in the past. Additionally, water lost to seepage is negatively affecting a fish spawning channel that is used by native fish species in the Missouri River and Canyon Ferry Reservoir.

Proposed Solution
Specific tasks include:

- Complete final design of converting the open main canal to a pipeline;
- Dewater existing open channel to allow for clearing and excavation;
- Install 6,300 feet of new steel reinforced polyethylene pipe;
- Backfill pipeline and grade disturbed area to a more stable slope;
- Reclaim disturbed area by seeding using a native seed mixture;
- Establish a formal agreement or water lease between Big Springs Ditch and FWP to provide water for fish spawning areas; and
- Install a flow measuring device at the head of the Big Springs spawning channel.

Resource and Citizen Benefits Analysis
The proposed project allows for a more efficient delivery of water for irrigation and also conserves an estimated 5 cfs of water. Overall annual water savings is approximately 1,832 acre-feet per year of Missouri River water to be reused for irrigation and for preserving fish habitat in the Big Springs spawning channel. In addition the district should realize significant energy and cost savings due to reduced pumping requirements and elimination of labor intensive annual canal maintenance. Finally, the quantity of end-system wastewater flow will be reduced resulting in less sediment and other contaminants entering the river.

The project will result in an economic benefit to irrigators by reducing the amount of water purchased for irrigation. The canal lining will reduce the risk of bank failure benefitting water quality.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package. Funding for this project is contingent on finalization of an agreement with FWP to provide water for fish spawning areas.

Project No. 22

Applicant Name	Thompson Falls, City of	
Project Name	Wastewater System Improvements	
Amount Requested	$ 125,000	
Other Funding Source	$ 8,800	Applicant
Total Project Cost	$ 133,800	
Amount Recommended	$ 125,000	

Project History
Thompson Falls proposes to upgrade and improve two components of its existing wastewater system. An existing lift station located within 15 feet of the Clark Fork River is experiencing pump and control failures, which could impact the river in the event of an overflow. An existing clay sewer main was built in 1948 and has a history of blockages, which create the possibility of raw sewage surfacing in homes and overflowing into the Clark Fork River.

Proposed Solution
The project will address the wastewater improvements in two phases. The first phase is to replace the aging pumps and controls at the wastewater lift station.

Specific tasks include:
- Remove existing lift station pumps and controls; and
- Replace lift station pumps and controls with new products.

The second phase of the project will rehabilitate the existing sewer main.

Specific tasks include:
- Inspect clay sewer main with video camera for structural soundness;
- Repair any structural issues within the sewer main;
- Rehabilitate clay sewer main with CIPP.

The application completed an alternatives analysis that selected the proposed solution. An adequate project implementation plan was presented and cost estimates are reasonable. It should be verified that the sewer main can successfully be lined prior to mobilization of the pipe rehabilitation contractor. Completion of the tasks outlined will achieve the project goals of preventing the overflow of wastewater into the Clark Fork River, and eliminating sewer blockages and the potential for wastewater entering homes or the Clark Fork River.

Resource and Citizen Benefits Analysis
This project will preserve surface water quality in the Clark Fork River by repairing aging infrastructure that has a high potential to discharge raw wastewater into the river in the event of a backup and/or lift station pump failure. It will also conserve energy by replacing the aging lift station pumps with a newer and more efficient pump.

Public health and safety will benefit from a properly functioning wastewater system that has a lower risk of sewage backups into homes, businesses, and the Clark Fork River.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 23

Applicant Name	Pondera County Conservation District	
Project Name	Pondera County Canal and Reservoir Company KB2 Canal Rehabilitation, Phase 2	
Amount Requested	$ 125,000	
Other Funding Sources	$ 52,176	PCCRC In-kind
	$ 8,590	Applicant In-kind
Total Project Cost	$ 185,766	
Amount Recommended	$ 125,000	

Project History
The Pondera County Conservation District (CD), in coordination with the Pondera County Canal and Reservoir Company (PCCRC), is proposing a canal rehabilitation and lining project in the Birch Creek watershed. The PCCRC is located in Valier with this project located west of Valier along the southern boundary of the Blackfeet Reservation. This is the second phase of a three-phase project to install canal liner through a three-mile reach of the KB Canal identified as a major contributor to seepage losses in the delivery system. The proposed project will rehabilitate a one-mile reach of the KB Canal which was constructed in the late 1890s. The project will conserve diverted water, improve irrigation efficiency, and preserve soil quality through salinity mitigation.

Proposed Solution
A rehabilitation strategy for lining the one-mile reach was developed and is presented below.

Specific tasks include:

- Design and permit the canal lining project;
- Reshape and regrade the existing one-mile reach of canal;
- Rehabilitate the one-mile reach through installation of a geomembrane liner; and
- Test project components and put into use.

Resource and Citizen Benefits Analysis
This project will develop renewable resources by increasing delivery efficiency of surface water to 2,461 acres through the regrading, shaping, and lining of the canal. The rehabilitation efforts will eliminate an estimated 616 acre-feet of water lost to seepage during the irrigation season. The project also saves energy by reducing pumping operations.

The KB2 Canal Rehabilitation project will help the PCCRC develop acres from partial service to full service irrigation. Implementation of the project is projected to generate an additional $325,740 annually in increased production of irrigation land. This increase in production and revenue generation will benefit the local and state economies. Implementation of the KB2 Canal Rehabilitation project will help ensure the sustainability of the Canal Company and agricultural production within the Birch Creek Basin. As well, this canal lining will reduce erosion within the canal and preserve water quality in Birch Creek. The grant application received public and citizen benefit points for the economic value of the project and for safety by eliminating saturated canal banks.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 24

Applicant Name	Malta Irrigation District
Project Name	Exeter Siphon Replacement
Amount Requested	$ 125,000
Other Funding Source	$ 640,228
Total Project Cost	$ 765,228
Amount Recommended	$ 125,000

Project History
As part of the Milk River Project, the Exeter Siphon was constructed in 1914. The siphon is a 64-inch diameter, 400-foot long cast-in-place concrete structure that is buried beneath Exeter Creek. It is experiencing leakage problems in the barrel because of old and deteriorating concrete, and its size is too small to pass the full canal flow without spilling excess water over the inlet and causing erosion along the bank of Exeter Creek. Water losses due to leakage and spillage have been estimated to be as high as 2,500 acre-feet over an irrigation season. A preliminary engineering report concluded that the preferred alternative is to replace the failing siphon with a crossing that is comprised of a section of lined canal. The canal will be sized to pass the 100-year flood of Exeter Creek. The project goals are to eliminate leakage in the conveyance structure and spillage into Exeter Creek, preserve and better manage irrigation water, and improve water quality in the Milk River.

Proposed Solution
Specific tasks include:

- Select and hire an engineering firm to complete the final engineering design, prepare construction documents, secure environmental regulatory permits, and conduct construction oversight and administration;
- Construct the new replacement canal and stream crossing; and
- Close out the project by developing record drawings and a final project report.

Resource and Citizen Benefits Analysis
This project will provide multiple benefits to multiple resources. The project will promote conservation of surface water (Milk River) from an already compromised water basin. The project will have a preservation benefit to Exeter Creek through restoration and also to the local wildlife habitat. By increasing the reliability of delivered water, agricultural production will benefit with increased production or additional irrigated acreage.

The project will provide a local economic benefit from the increased production and additional irrigation.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 25

Applicant Name	Sidney Water Users Irrigation District	
Project Name	Main Canal Pipeline Conversion	
Amount Requested	$ 125,000	
Other Funding Source	$ 124,804	Applicant
Total Project Cost	$ 249,804	
Amount Recommended	$ 125,000	

Project History
The infrastructure for the Sidney Water Users Irrigation District (SWUID) was constructed in the 1930s as part of the federal Works Progress Administration. The project was owned by DNRC until it was transferred to the SWUID in 1995. The SWUID has completed several canal-to-pipeline conversion projects in its Districts 1 and 2 and now is moving to its District 3 Main Canal to implement more canal-to-pipeline projects. This project comprises Phase 1 of the Main Canal conversion. A preliminary engineering report was completed and the alternatives analysis concluded that the preferred alternative is the installation of 3,044 linear feet of polyvinyl chloride irrigation pipe. The goals of the project are to conserve water by reducing or eliminating conveyance leakage, improve water management in the system, reduce power consumption by reducing the volume of water to be pumped, and to preserve water quality and quantity in the Yellowstone River by reducing irrigation diversions.

Proposed Solution
Specific tasks include:

- Select and hire an engineering firm to complete the final engineering design, prepare construction documents, secure environmental regulatory permits, and conduct construction oversight and administration;
- Procure materials in accordance with State of Montana procurement procedures;
- Construct the pipeline using SWUID labor and equipment; and
- Close out the project by developing record drawings and a final project report.

Resource and Citizen Benefits Analysis
The proposed project will not only allow more efficient delivery of water for irrigation, but is also estimated to save up to 4.8 cfs of water during irrigation season, equating to an overall annual water savings of approximately 1,312-acre-feet per year of Yellowstone River water to be reused for irrigation development. The district should also realize significant energy and cost savings due to reduced pumping requirements and elimination of labor intensive annual canal maintenance. The quantity of end-system wastewater flow will be reduced resulting in preservation of surface water due to less sediment and other contaminants entering the Yellowstone River.

The project will result in short-term economic benefits associated with proposed construction. More important, the project will provide the economic benefits including the local tax base associated with the cropland served by this final phase of the Main Canal project. The project will also allow individual landowners to better control irrigation practices on their cropland, allowing higher crop yields and perhaps more diverse crop options.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 26

Applicant Name	Buffalo Rapids Irrigation District 2	
Project Name	Shirley Main Canal Rehabilitation	
Amount Requested	$ 125,000	
Other Funding Source	$ 83,463	Applicant
Total Project Cost	$ 208,463	
Amount Recommended	$ 125,000	

Project History
The Buffalo Rapids Irrigation District 2 (BRID2) proposes to rehabilitate 0.75 miles of the Shirley Canal by lining the canal and replacing existing headgate structures. The area has historically experienced significant seepage loss due to high permeability soils and poor condition of the ditch. It is estimated that up to 16-cfs (4,400 acre-feet) of water are presently lost through seepage, which could be conserved with the installation of a canal liner. Additionally, a saline seep occurs adjacent to the canal affecting nine acres of arable land.

Proposed Solution
The project proposes to install a geocomposite liner in the identified 0.75-mile reach.

Specific project tasks include:

- Design and engineer final rehabilitation design;
- Obtain permits to meet all regulatory requirements;
- Remove organic material from channel bottom;
- Reshape channel bottom to desired dimensions;
- Replace three existing headgates under guidance of project engineer;
- Install ¾ mile of Huesker canal liner according to specifications;
- Install 6-inch ballast layer on top of liner; and
- Return flows to channel during irrigation season and monitor effectiveness.

Resource and Citizen Benefits Analysis
This project will conserve surface water by eliminating an estimated 6- to 16 cfs of water lost to seepage during the irrigation season. This project has developed renewable resource benefits by increasing delivery efficiency of surface water to 2,000 acres through the regrading, shaping, and lining of the canal and through saline seep reclamation of nine acres into irrigated land. There will also be a small energy savings by reduced pumping.

Project implementation is estimated to generate an additional $166,700 annually in increased production of irrigation land. This increase in production and revenue generation will benefit the local economy. Implementation of the Main Canal Rehabilitation project will help ensure the sustainability of the ID and agricultural production within the lower Yellowstone Basin and improve safety by reducing saturated canal banks.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 27

Applicant Name	Fort Shaw Irrigation District	
Project Name	D-System Water Conservation	
Amount Requested	$ 125,000	
Other Funding Source	$ 40,904	Applicant
Total Project Cost	$ 165,904	
Amount Recommended	$ 125,000	

Project History
The Fort Shaw Irrigation District (FSID) is the second largest irrigation project on the Sun River. It distributes water to approximately 11,600 acres on 177 farms between the towns of Simms and Sun River. The irrigation project was originally completed in 1908, and aggressive improvement efforts began in 1996 with the district performing projects that included the installation of a remote operated head gate, canal lining, conversion of open ditches to pipelines, and installation of measuring devices. Despite all the work accomplished, after almost 100 years of service, this aging system of 12 miles of canal, 89 miles of laterals, hundreds of turnouts, and cement structures are still in dire need of repair.

Proposed Solution
Fort Shaw proposes to rehabilitate a 2,712-foot section of the D-System Canal which supplies irrigation water to approximately 11,600 acres of farmland. Once completed, the water conservation project on the D-System Canal will provide additional water conservation measures to better serve the canal system's end users. The project will reduce canal seepage in FSID's D-System, potentially increasing available water for irrigators for a full irrigation season and potentially increasing Sun River instream flow by reducing the amount of diverted water.

Specific tasks include:

- Complete final design of the canal lining project;
- Obtain regulatory approval from all applicable local, state, and federal agencies;
- Reshape the canal channel within a 2,712-foot length of the D-System Canal;
- Install a geocomposite liner material (consisting of nonwoven geotextile fabrics bonded to both the top and bottom of a 20-mil geomembrane) along the reshaped canal;
- Place 6-inches of ballast material on the liner bottom; and
- Perform final inspection and project closeout.

Resource and Citizen Benefits Analysis
This project will benefit the local economy by generating an additional $53,487 annually in increased production. The project will conserve an estimated 9.3 acre-feet of water per day during the irrigation season. Over the 180-day irrigation season this could conserve 1,668 acre-feet of surface water or approximately 3% of the FSID's 54,000 acre-feet diversion amount to be reused for irrigation. There will also be a small energy savings through reduced pumping. The project will also provide benefits to water quality preservation in the Sun River through the prevention of erosion and runoff into the river. These water quality benefits are not quantified; however, the Sun River Watershed Group has identified wasteways as a source of contamination.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 28

Applicant Name	Cascade, Town of	
Project Name	Wastewater System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 500,000	TSEP
	$ 418,001	SRF Loan
Total Project Cost	$1,043,001	
Amount Recommended	$ 125,000	

Project History
Cascade's wastewater system was installed in the 1940s. The original system consisted of a gravity collection network of clay pipe and a small pump station on Russell Drive South. The system was designed to discharge to the Missouri River and was connected to several storm drains. The storm drains have since been removed from the collection system. In 1963 a pair of facultative lagoons were constructed on an island within the Missouri River, but were abandoned in 1998 when the current lagoons were constructed. In the early 2000s the town began replacing sewer mains and have replaced approximately 2,200 linear feet of original 8-inch clay tile pipe. The town is currently spending a significant amount of time cleaning and jetting the remaining sections of clay tile pipe due to blockages. The blockages have led to several sewer backups which have surfaced onto roads within the town. The potential human and environmental contact with raw wastewater is a significant health and sanitary concern. During power outages untreated wastewater can overflow at Russell Drive lift station making its way to the Missouri River.

Proposed Solution
The proposed solution is to upgrade the wastewater system to meet present-day design standards and protect the environment by replacing existing clay tile sewer pipe.

Specific tasks include:

- Replacement of 2,450 linear feet of clay sewer pipe;
- Rehabilitation of 350 linear feet of sewer pipe using CIPP;
- Rehabilitation of Russell Drive lift station by installing a generator, and plugging the overflow pipe upstream;
- Rehabilitation of the main lift station by installing a generator, and replacing corroded piping;
- Replacement of air release valves along the town's 6-inch force main;
- Install land application of dewatered sludge using geo-fabric bags; and
- Test project components and put into use.

Resource and Citizen Benefits Analysis
This project will result in the preservation of water quality in the Missouri River; the elimination of the public health risk associated with sewer backups; minor energy conservation due to improved pumping efficiencies associated with flow line improvements, and improved wastewater treatment associated with sludge removal. The proposed project will protect the health of the community and reduce the opportunities for environmental contamination.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 29

Applicant Name	Helena, City of	
Project Name	Westside Wastewater System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 750,000	TSEP
	$1,925,000	SRF Loan
Total Project Cost	$2,800,000	
Amount Recommended	$ 125,000	

Project History
The project area was platted as small lots in the late 1800s and has a high urban density. All properties use individual on-site wastewater systems, primarily seepage pits, cesspools, and metal septic tanks. Drinking water is by individual wells. The small lots have resulted in high urban and wastewater treatment density and no room for replacement systems that meet current regulations. Because of the close proximity, fractured bedrock, and the topography of the area, untreated effluent is likely reaching Spring Meadow Lake and Ten Mile Creek. Construction of wastewater lines to connect with Helena's municipal system will eliminate discharge from the old septic systems and enable development curtailed by the lack of infrastructure serving empty lots.

Proposed Solution
The project will extend Helena's wastewater collection system to an area currently outside the city limits known as the Westside. Completion of the proposed project will divert approximately 32,400 gpd of untreated effluent to Helena's wastewater treatment facility to be effectively treated.

Specific tasks include:

- Install approximately 17,700 linear feet of 8-inch PVC sewage collection piping;
- Install 60 sanitary sewer manholes;
- Install 200 sewer service connections to new main line piping; and
- Restore asphalt and gravel surfacing disturbed by pipe and manhole installation.

Resource and Citizen Benefits Analysis
The project will preserve groundwater and surface water by eliminating sewage effluent currently mixing with near-surface groundwater and possibly Spring Meadow Lake. Discharge to the Helena Valley Aquifer, a sole source aquifer for Helena Valley residents, is the likely end point for the contaminant pathway. The primary contaminant of concern is nitrate. Estimated discharge of treated and untreated wastewater from the project area is 32,400 gpd.

The project would benefit public health by stopping documented discharges of untreated sewage and economically benefit Helena by enabling further development in the west side of town.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package

Project No. 30

Applicant Name	Eureka, Town of	
Project Name	Wastewater Expansion and Improvement, Phase 1B	
Amount Requested	$ 100,000	
Other Funding Sources	$ 555,000	TSEP
	$ 491,000	RD Loan
	$ 164,000	RD Grant
Total Project Cost	$1,310,000	
Amount Recommended	$ 100,000	

Project History
Midvale is an unsewered area north of Eureka that was recently annexed into the town. Residents and businesses currently rely on septic tank and drainfield systems for wastewater disposal. Most of the systems are 20 to 30 years old, with numerous instances of deteriorated or failing conditions. The soils in the area are not suitable for adequate wastewater treatment. Elevated nitrate levels and bacteriological contamination of the groundwater have been documented in the aquifer, utilized for drinking water. To address these issues, the construction of a centralized wastewater collection system in Midvale has been proposed. The project is being completed in two phases. The first phase was recently completed and consisted of extending a main trunk line sewer up through the Midvale area from the Eureka collection system and the replacement of the main wastewater pumping station in Eureka.

Proposed Solution
The second phase of the project will extend the collection system to the remaining residences and businesses in the area. The goal of the project is to protect and preserve groundwater quality and eliminate the public health and safety issues associated with contamination of the drinking water supply.

Specific tasks include:

- Construct approximately 10,300 feet of 8-inch gravity wastewater collection system piping and 107 service connections in the Midvale area. A small portion will be served by 12 individual grinder pumps and 2,000 feet of 2-inch diameter, low-pressure sewer lines due to the lower terrain; and
- Install a backup generator at Eureka's main wastewater pumping station.

Resource and Citizen Benefits Analysis
By installing a centralized sewer system and treating waste at the municipal treatment plant, this project will preserve groundwater quality in the Tobacco River Valley. Additionally, installing emergency power at the main lift station will prevent potential system failure during a power outage, thus providing a public health benefit.

Funding Recommendation
DNRC recommends grant funding of $100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 31

Applicant Name	Whitefish, City of	
Project Name	Wastewater System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 750,000	TSEP
	$16,491,666	SRF Loan
Total Project Cost	$17,366,666	
Amount Recommended	$ 125,000	

Project History:
Whitefish has a complex wastewater collection system that has over 58 miles of sewer main and 16 lift stations, with portions of the system over 100 years old. Wastewater treatment is provided by an aerated lagoon system followed by a flocculating clarifier, with discharge of treated effluent to the Whitefish River. The system has been modified several times over the last 35 years and much of the plant is at the end of its useful design life. Whitefish is under enforcement action from the Montana Department of Environmental Quality (DEQ) as a result of poor performance of the treatment facility and violations of permit limits. The city was required to submit a Compliance Plan and schedule outlining steps to achieve compliance with the conditions of the permit. The wastewater treatment facility cannot consistently meet the new limitations for ammonia and will have difficulty in meeting the limits for total nitrogen as the service area densifies and more users are added. The city must complete major wastewater treatment improvements to meet the permit limits. The goal of the project is to preserve surface water by protecting it from pollution.

Proposed Solution
Specific tasks include:

- Construct sequencing batch reactor treatment system on the site of the city's existing treatment facility.

Resource and Citizen Benefits Analysis
Whitefish will be treating sludge that has accumulated and will reduce current ammonia levels that have arisen. The city will also take advantage of using less energy as they will be using bubble diffusers and high energy blowers.

Whitefish will experience less odors by completing this project and it will also reduce the amount of outflow from the city.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 32

Applicant Name	Black Eagle-Cascade County Water and Sewer District	
Project Name	Sewer Main Slip Lining	
Amount Requested	$ 125,000	
Other Funding Sources	$ 2,500	TSEP
	$ 2,500	District Planning
	$ 8,500	District
Total Project Cost	$ 138,500	
Amount Recommended	$ 125,000	

Project History
The Black Eagle-Cascade County Water and Sewer District (WSD) sewer collection system was originally constructed in the 1920s by the Anaconda Copper Mining Company. The district sewage is treated and disposed by the Great Falls wastewater treatment plant. Sewer mains are in need of rehabilitation to prevent sewer infiltration to the groundwater and prevent sewer backups with possible overland flow to the Missouri River. The proposed project will rehabilitate a portion of the sewer system with future repairs necessary.

Proposed Solution
Specific tasks include:

- Install approximately 1,774 feet of cured-in-place pipe liner (CIPP);
- Excavate and repair one sewer service; and
- Remove five intruding service pipes.

Resource and Citizen Benefits Analysis
This project will preserve surface water quality in the Missouri River and groundwater quality in the aquifer adjacent to the river by repairing aging wastewater conveyance infrastructure which is experiencing both infiltration and exfiltration issues at various points in the system.

By reducing the amount of groundwater infiltration into its wastewater system, the Black Eagle WSD will be able to reduce the volume of wastewater it pays to have treated at the Great Falls wastewater treatment plant, thus providing economic benefits and energy conservation benefits. Public health and safety will also benefit by reducing the risk of sewer collection pipe collapses and backups which would expose local residences and businesses to raw sewage.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package. Prior to entering into a construction contract, Black Eagle must demonstrate that CIPP is an appropriate construction method for the project area.

Project No. 33

Applicant Name	Thompson Falls, City of	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 625,000	TSEP
	$ 450,000	CDBG
	$ 300,000	SRF Loan
Total Project Cost	$1,500,000	
Amount Recommended	$ 125,000	

Project History
The original water system operated and maintained by the applicant was built in the late 1800s and was acquired from the Northern Pacific Railroad in 1936. The system comprises a developed spring supply, groundwater wells, disinfection, two storage reservoirs, and a distribution system consisting of three pressure zones. Since 2006, a series of phased projects have been completed to address various deficiencies, and the proposed project represents the next phase of prioritized improvements. The applicant proposes to replace a water main in the upper pressure zone that consists of steel pipe with the tar wrap. The existing pipe is beyond its useful service life, undersized, and experiencing corrosion, which will cause insufficient capacity and pressure to meet fire flow requirements and excessive system leakage.

Proposed Solution
Specific tasks include:

- Replace 3,670 feet of water distribution main in the upper pressure zone;
- Install associated valves, hydrants, and fittings;
- Re-establish water service to 74 existing connections; and
- Complete surface restoration of disturbed areas.

Resource and Citizen Benefits Analysis
The proposed project will reduce leakage in the water distribution system and result in reduced energy consumption by the well pumps. Additionally, the surface waters of Ashley Creek, a small mountain stream, will be conserved, and aquatic habitat will be preserved, or protected, from chronic dewatering. By increasing pressure and flow capacity of the system, there will be health and safety benefits to the water users, particularly with respect to fire protection and backflow contamination caused by low system pressure.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 34

Applicant Name	Dutton, Town of	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 500,000	TSEP
	$ 535,000	SRF Loan
Total Project Cost	$1,160,000	
Amount Recommended	$ 125,000	

Project History
The applicant has completed several projects in the past to replace and improve its aging water system. Prioritized system deficiencies consist of chronic leaks on the existing water supply transmission pipeline between the well building and the chlorine vault and the deteriorated condition of various components of the pump house, including the well pumps, the polyphosphate feed system, and the heating and ventilation system. In combination with main breaks and leaks, metering inaccuracy at individual services is suspected of contributing to an estimated 49% difference between metered water supply readings and the total amount of water metered at individual services. The proposed project is intended to reduce the amount of unaccounted water in the system. Four water hydrants are also identified for replacement.

Proposed Solution
Specific tasks include:

- Install 4,400 feet of 8-inch transmission pipeline to address leaks experienced between the well building and chlorine vault;
- Replace the well pumps, polyphosphate feed system, and heating and ventilation equipment in the pump house;
- Install new water meters to address the excessive rate of unaccounted for water; and
- Replace four water hydrants in the distribution system to improve the reliability of providing adequate fire protection to the community.

Resource and Citizen Benefits Analysis
The project will conserve groundwater by replacing leaking transmission lines and through metering individual connections. Metering will enable better management by identifying significant differences between measurement of the water produced and the water consumed. Metering will also promote conservation by charging customers for water consumed instead of charging a flat monthly rate. The primary purpose of this project is to conserve water, provide adequate fire flows, and protect public safety.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 35

Applicant Name	Fallon County	
Project Name	Baker Lake Restoration	
Amount Requested	$ 100,000	
Other Funding Sources	$ 100,000	FWP
	$5,000,000	Applicant – Parks and Recreation CIP
	$ 6,500	Private Grant
Total Project Cost	$5,206,500	
Amount Recommended	$ 100,000	

Project History
The project involves improving both Upper and Lower Baker Lakes to improve water quality and associated fisheries. The existing bathymetric profile found average depths of 4 to 8 feet in Lower Baker Lake, which is insufficient to overwinter fish. Winterkills routinely decimate the fishery in Lower Baker Lake. Sediment inputs and siltation from the Upper Baker Lake drainage resulted in the shallow depths in Lower Baker Lake. Improving water quality in Upper Baker Lake and developing wetlands cells between the lakes will enable establishment of a year-round fishery.

Proposed Solution
The Baker Lake Restoration project will improve Upper Baker Lake, develop a series of wetlands for water quality improvements between the lakes, and deepen and aerate Lower Baker Lake to sustain a viable fishery. The area between the two lakes will be used to construct sediment retention ponds and a series of wetland complexes to remove the sediments typical of Upper Baker Lake.

Specific tasks include:

- Procure a qualified wetland consultant/contractor and/or professional engineer;
- Develop plans for disposal of dredged material;
- Develop final aeration plans based on fish oxygen needs and public safety concerns;
- Procure a construction contractor and construction materials for project implementation;
- Implement project in proposed phases and construct all aspects of the project;
- Continue to work with FWP on fish management in Lower Baker Lake; and
- Educate the public and interested groups on the benefits, care, and maintenance of the restored Lower Baker Lake and up-gradient wetland cells.

Resource and Citizen Benefits Analysis
The Baker Lake Restoration Project will develop the use of Lower Baker Lake as a recreational fishery by deepening and aerating the lake to improve overwinter habitat for species such as perch, pike, walleye, crappie, smallmouth and largemouth bass, and trout species. It will also develop 17 acres of new wetlands which will preserve water quality in Lower Baker Lake and the creek into which it discharges by trapping sediment transported from Upper Baker Lake. New wetlands will benefit migratory birds.

Citizens and businesses of Baker and surrounding areas will benefit economically from the enhanced resource-based recreation opportunities. The project also benefits public safety through flood control.

Funding Recommendation
DNRC recommends grant funding of $100,000 upon development and approval of the final scope of work, administration, budget, and funding package. Funding is contingent on a feasible funding package for a work plan that benefits renewable resources.

Project No. 36

Applicant Name	Madison County
Project Name	Big Hole River Streambank Rehabilitation
Amount Requested	$ 124,569
Total Project Cost	$ 124,569
Amount Recommended	$ 125,000

Project History
This project is on 6,000 feet of the Big Hole River southwest of Twin Bridges. Accelerated erosion, bank loss, and sediment deposition occur on the river stretch upstream of the Burma Road crossing. These actions have impaired water quality, widened the channel, rendered the public access boat ramp steep and unusable, and caused the use of an alternate access on the county road.

Irrigation flows are not sustained due to alluvial deposits from upstream hydraulic variations in the stream channel. Irrigators routinely maintain stream sediment levels to manage water delivery for irrigation. The increased turbidity levels also elevate ambient water temperature levels and contribute to decreased water quality. Resultant soil deposition beneath the Burma Bridge must be regularly excavated by the owner of the downstream water right to maintain flow to the headgate.

In 2015, Madison County stabilized 205 feet of eroding bank with riprap and later with riprap extensions above and below the Burma Bridge; yet accelerated erosion continues. This project proposes a riprap alternative to increase the resistance of channel banks to accelerated erosion and mitigate negative implications to the river.

Proposed Solution
Specific tasks include:

- Construct vegetated soil lifts along 690 feet of river bank;
- Construct a log or rock vane at the end of the riprap downstream of the Burma Bridge;
- Install cattle exclusion fencing; and
- Revegetate 0.18 acres of riparian corridor in various locations.

Resource and Citizen Benefits
The purpose of this project is to improve water quality, increase access to irrigation water, restore riparian and aquatic habitat, reduce soil loss, and enhance recreational access to a well-used stretch of the Big Hole River in the area of the Burma Road crossing.

The project resource benefits are to fish and aquatic habitat, surface water quality protection, irrigation water management, and sustenance of a regional recreation economy.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 37

Applicant Name	Glen Lake Irrigation District	
Project Name	Costich Drop Rehabilitation, Phase 1	
Amount Requested	$ 125,000	
Other Funding Sources	$ 5,312	Applicant
	$ 17,774	Applicant In-kind
Total Project Cost	$ 148,086	
Amount Recommended	$ 125,000	

Project History
The Glen Lake Irrigation District (GLID) stores irrigation water in Costich Lake and delivers water from the lake, through the Costich Drop, to its main canal for irrigation on 1,171 acres. The Costich Drop consists of a concrete inlet structure with headgate, 1,800 linear feet of 36-inch diameter high-density polyethylene (HDPE) pipe, and a concrete outlet structure for energy dissipation. The existing pipe has deformed and has joint separation occurring. The pipe is leaking significant amounts of water which is creating piping effects and visual observation of slope instability in the surrounding embankment. The project's goal is to replace the upper 650 feet of pipeline with reinforced concrete pipe connected to the existing inlet structure.

Proposed Solution
Specific tasks include:

- Remove the upper 650 feet of the existing 36-inch HDPE pipe;
- Install 650 feet of 36-inch reinforced concrete pipe;
- Install 2 new manholes for access;
- Backfill trench with compacted, engineered backfill;
- Complete surface restoration.

Resource and Citizen Benefits Analysis
This project will have multiple benefits to multiple resources. Replacement of a portion of the drop structure and repair of the dam will preserve arable land and fish and wildlife habitat. With the repair of a portion of the drop structure a water savings of up to 77 acre-feet per year will benefit the area producers by allowing additional water for crops. This additional water will allow for an increase in crop production and development of arable land.

An economic benefit will result from an increase in crop production. Public safety benefits result from a more stable dam structure for both the employees of the GLID and reduced flood risk for structures downstream of the dam.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 38

Applicant Name	Harlowton, City of	
Project Name	Water System Improvements, Phase 4	
Amount Requested	$ 125,000	
Other Funding Sources	$ 750,000	TSEP
	$ 628,000	SRF Loan
Total Project Cost	$1,503,000	
Amount Recommended	$ 125,000	

Project History
In 2011 Harlowton installed a new water storage tank and booster station. After construction of the new water storage tank, the resulting improved static pressures caused the existing and deteriorating cast iron distribution pipe to break with notable frequency. An estimated 30%-40% unaccounted water use is excessive and presents a threat to natural resource protection and to public health and safety. The city has been actively pursuing water distribution main replacements as funding allows.

Harlowton is a leaking underground storage tank (LUST) Trust Fund Site with hydrocarbon contaminated groundwater which poses a risk to the distribution system when breaks occur. Excessive leakage drives recharge of the shallow contaminated aquifer, causing increased head differential between local shallow groundwater and its discharge point which is the Musselshell River. The goal is to reduce leakage through main replacement so the elevation head will decrease and the subsequent contaminant transport mechanism will also diminish.

Proposed Solution
The project will eliminate leaking, fragile, permeable pipe in a location where a threat from groundwater contamination exists.

Specific tasks include:

- Replace 3,850 feet of cast iron main with new ductile iron and PVC pipe.

Resource and Citizen Benefits Analysis
The proposed improvements will conserve water and energy by reducing leakage. The project will preserve surface water quality in the Musselshell River from hydrocarbon migration due to excessive system leakage above the contaminant plume.

Funding Recommendation
DNRC recommends grant funding of $125,000 as requested upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 39

Applicant Name	Alberton, Town of	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Source	$ 40,900	Applicant In-kind
Total Project Cost	$ 165,900	
Amount Recommended	$ 125,000	

Project History
The town of Alberton operates a public water system with two groundwater sources, one spring and one deep well. The existing spring has gas chlorination that is operated manually and without controls. The spring flows freely year round resulting in discharge of chlorinated water to the ground when the storage tank is full. The deep well is not chlorinated and does not provide protection to the distribution system via provision of chlorine residual. When the spring production tapers off in summer months and can no longer keep pace with demand, the well must be operated manually to fill the storage tank. There are times when inadequate fire protection is provided due to an empty tank, or the tank is overflowing chlorinated water. The water resource is not being used wisely, conserved wisely, or managed well.

Proposed Solution
Specific tasks include:

- Remove gas chlorinator at spring and replace with safe automated hypochlorite system;
- Install a supervisory control and data acquisition (SCADA) automated hypochlorination system on well supply; and
- Install telemetry, controls, and valves to automatically fill water storage tank from either one of the two water supply sources, and to eliminate waste of chlorinated water.

Resource and Citizen Benefits Analysis
The installation of a SCADA system will conserve groundwater by eliminating inefficient manual operation and improving leak detection, thus conserving energy by reducing pumping costs and associated electrical power. Replacing the nonfunctioning control valve with a new control valve will preserve groundwater quality by returning excess spring flows to the aquifer prior to chlorination.

Finally, replacing the existing gas chlorination system with a safer and more reliable liquid system and chlorinating the well, which currently is not treated, will provide health and safety benefits to the system operator and the entire community.

The application indicates that this first phase of a multi-phased water system improvements plan is well supported by the public. It will not result in a rate increase.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 40

Applicant Name	Buffalo Rapids Irrigation District 1	
Project Name	Lateral 20.6 Pipeline Conversion, Phase 2	
Amount Requested	$ 125,000	
Other Funding Source	$ 175,288	Applicant
Total Project Cost	$ 300,288	
Amount Recommended	$ 125,000	

Project History
The Buffalo Rapids Irrigation District 1 (BRID1) proposes to convert 11,500 feet of lateral irrigation ditch to a pipeline in order to conserve water and improve irrigation management. The existing lateral has extensive vegetative growth, seepage losses due to permeable soils, conveyance losses, and poor water management, which cause the system to lose an estimated 1.6 cfs of water, or 152 million gallons annually. The irrigation district has a long history of successful lateral conversions, and this project is a continuation of a previous conversion completed with DNRC grant funds.

Proposed Solution
The project proposes to convert 11,500 feet of existing lateral to plastic irrigation pipe in the identified 0.75-mile reach experiencing severe seepage losses.

Specific project tasks include:

- Conduct inspections on existing lateral system;
- Design and engineer pipeline replacement system;
- Obtain permits to meet all regulatory requirements;
- Review and address pipeline installation plans and specifications; and
- Install 11,500 feet of plastic irrigation pipe and turnouts.

Resource and Citizen Benefits Analysis
This project will have conservation benefits to surface water and energy by eliminating an estimated 1.6 cfs to seepage loss. Irrigation water is delivered to the system through the Glendive Pump Station. This project will conserve energy at the pump station through the increased irrigation delivery and on-farm application efficiencies. This project will have management benefits though the addition of flow meters at the lateral inlet and at each turnout allowing the irrigators to manage the surface water. Preservation of surface water will be achieved by decreasing the amount of irrigation runoff, thus decreasing contaminants into the Yellowstone River and improving water quality.

This project will affect the public well-being through increased agricultural revenues produced from increased irrigation efficiency. An economic analysis calculates this project to generate an additional $87,330 annually. The project improves safety by converting open water to pipeline.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 41

Applicant Name	Chouteau County Conservation District	
Project Name	Ranching for Rivers: Cost Share to Landowners for Infrastructure Improvements for Grazing Management on the Missouri River	
Amount Requested	$ 125,000	
Other Funding Sources	$ 100,000	Landowners Cost Share
	$ 7,250	Missouri River Conservation District Council
	$ 40,000	US BLM
	$ 120,000	Friends of the Missouri River Breaks
Total Project Cost	$ 392,250	
Amount Recommended	$ 125,000	

Project History
Excessive and concentrated cattle grazing along streams and in riparian areas can cause nonpoint source pollution by increased sedimentation, nutrients, and pathogens into the surface water. Riparian pastures, created with fencing and water development, can be a grazing management tool to help minimize impacts to the surface water and promote the growth of the riparian vegetation. Most landowners now recognize the benefits of managed grazing in riparian zones by establishing riparian pastures.

This project will encourage and assist landowners in creating riparian pastures along approximately 10 miles of the Missouri River to conserve and preserve riparian vegetation and floodplain habitat. Specific objectives include: (1) building fences to create small manageable units in the riparian corridor; (2) develop off-stream water sources; (3) develop hard-crossings and similar structures to reduce soil impacts; and (4) encourage the development of grazing and monitoring plans to address stocking rate and season of use in riparian pastures.

Proposed Solution
Specific tasks include:

- Send program information and application materials to landowners in 15 conservation districts (CD) bordering the mainstem of the Missouri River;
- Complete visits to all 15 CDs to present the program to the CD Boards;
- Advertise the project by publishing press releases;
- Screen applications using technical expertise and input on best practices;
- Select up to 30 applicant projects for cost-share funding;
- Complete site visits to selected applicants to determine project feasibility;
- Complete all project fencing and associated water development activities;
- Complete second site visits to confirm that the fencing and water development activities were completed and adhered to standards; and
- Promote and highlight projects (with landowner consent).

Resource and Citizen Benefits Analysis
This project has multiple renewable resource benefits (Conservation, Preservation) to multiple renewable resources (Wildlife and Bird Habitat, Fish and Aquatic Habitat, Arable Land, and Ground and Surface Water Quality).

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 42

Applicant Name	Judith Gap, Town of	
Project Name	Wastewater System Improvements, Phase 2	
Amount Requested	$ 125,000	
Other Funding Sources	$ 125,000	TSEP
	$ 10,000	Local
Total Project Cost	$ 260,000	
Amount Recommended	$ 125,000	

Project History
Judith Gap has operated and maintained a wastewater collection and treatment system for nearly 70 years. In 2001, the town constructed a new sewer outfall, a lift station, new facultative lagoons and spray irrigation for the land application disposal of the treated wastewater effluent. Numerous deficiencies exist throughout the 70-year-old wastewater collection system. Deteriorated pipe in the system causes sewer plugging, sewer back-ups, pipe collapse, and joint separation. These deficiencies cause surfacing sewage, sewer back-ups into homes and businesses, and the exfiltration of raw sewage into the local shallow aquifer. The existing manholes are also deteriorating and are unsafe to access for maintenance and cleaning and the ladders are deteriorated making access very difficult.

Proposed Solution
Specific tasks include:

- Replace 1,860 linear feet of 8-inch sewer main within the existing collection system;
- Install 27 new 4-inch sewer services along the replaced sewer mains; and
- Remove and replace five concrete manholes.

Resource and Citizen Benefits Analysis
The primary purpose of this application is to protect the shallow aquifer from continuous exposure to raw sewage. The proposed project will preserve groundwater quality by replacing the sewer mains that are leaking raw sewage. By protecting the aquifer, the project will also provide public health benefits.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 43

Applicant Name	Flathead Conservation District	
Project Name	Krause Creek Restoration	
Amount Requested	$ 116,005	
Other Funding Source	$ 3,050	Applicant In-kind
Total Project Cost	$ 119,055	
Amount Recommended	$ 116,000	

Project History
Krause Creek flows from public lands through an area of private development and then into Echo Lake. Krause Creek was not a single, continuous channel between the upper reaches and Echo Lake due to flowing across an alluvial fan. When it reached the valley floor it spread into a series of small braided channels that formed a network across its alluvial fan. Numerous attempts have been made to continually confine, channelize, stabilize, and address the bedload of Krause Creek. The results of the efforts to reduce flooding and promote sediment transport has been the creation of a fairly efficient flood conveyance channel that is incised and overly steep given natural conditions. Consequently, where the gradient is reduced, sediment deposits must be removed to maintain the current channel. These actions have led to downcutting, increased channel instability, and sediment loading and deposition in downstream reaches.

Proposed Solution
The purpose of the proposed project is to stabilize the creek channel and restore the hydrologic function to contain future flood events and reduce sediment contributions to Echo Lake.

Specific tasks include:
- Recontour floodplain;
- Install grade control;
- Revegetate the stream reach, reseed all disturbed areas with native vegetation, and manage/control weeds on the project site;
- Replace culvert; and
- Develop a conceptual restoration plan for the other reaches of Krause Creek.

Resource and Citizen Benefits Analysis
The proposed project will protect riparian habitat and reduce bank erosion and create a restoration plan. The Krause Creek Restoration project will preserve natural resources by stabilizing the stream channel, restoring hydrological function of the stream to allow for future flood events, and addressing the continual sediment loading maintenance. The restoration activities will also reduce the amount of sediment reaching Echo Lake, a valuable recreational site and fishery. The restored creek will also enhance wildlife habitat and provide connectivity between Echo Lake and the nearby public lands.

Funding Recommendation
DNRC recommends grant funding of $116,000 upon development and approval of the final scope of work, administration, budget, and funding package. The funding is contingent on a feasible work plan that addresses public land access.

Project No. 44

Applicant Name	Sanders County Sewer District at Paradise	
Project Name	Wastewater System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 750,000	TSEP
	$ 450,000	CDBG
	$1,440,000	RD Grant
	$ 480,000	RD Loan
Total Project Cost	$3,245,000	
Amount Recommended	$ 125,000	

Project History
The proposed Sanders County Sewer at Paradise project includes construction of a new wastewater collection system along with new treatment and disposal in order to serve a design population of 200 residents (current population of 164 residents) within the Sanders County Sewer District. The community does not currently have a centralized wastewater collection and treatment system. The residents in Paradise are utilizing on-site wastewater treatment and disposal via failing septic tanks and drainfields or cesspools crafted from available materials such as railroad ties and 55 gallon drums. The county sanitarian has been allowing non-compliant fixes for residents who do not have sufficient property to construct a replacement drainfield. Effects of the failing systems have been noticed in the form of elevated nitrate levels in excess of 3-mg/L in the aquifer utilized for water supply to the community. Therefore, there is an immediate need for the project due to potential for adverse effects with respect to public and environmental health. The project goal is to mitigate water contamination by constructing a centralized sanitary sewer collection, treatment, and disposal system, thus allowing the residents of Paradise to abandon their failing on-site septic systems.

Proposed Solution
Specific tasks include:

- Construct a new combination gravity and low pressure wastewater collection system;
- Construct a new level II treatment facility with drainfield disposal;
- Connect residents to the new wastewater collection system; and
- Abandon existing on-site septic systems.

Resource and Citizen Benefits Analysis
The proposed project will protect groundwater and surface water from effluent and alleviate public health and safety concerns by preventing wastewater leakage or back-flow of sewage into private residences. Currently, there is no treatment system in place. The primary purpose of this project is to collect wastewater and treat prior to disposal.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 45

Applicant Name	Jefferson County	
Project Name	Jefferson Slough Eurasian Watermilfoil Control	
Amount Requested	$ 96,530	
Other Funding Source	$ 45,000	Applicant
Total Project Cost	$ 141,530	
Amount Recommended	$ 96,530	

Project History
Before the 1900s there were two channels of the Jefferson River near Whitehall. Sometime after agriculture and irrigation water rights were established in the valley, the river moved south, leaving these channels with considerably lower natural flows. During irrigation season, artificial flows are maintained in these channels (now referred to as the Jefferson and Slaughterhouse Sloughs) using a diversion structure at Renova Bridge reconstructed from stream bed and bank sediments every year.

The purpose of this project is to improve flow management of water from Slaughterhouse Slough into the Jefferson Slough This project will construct a permanent diversion dam that will control the volume and timing of flows, thereby solving the following problems:

- Flush fine-grained sediment from the Jefferson Slough which hosts the uppermost occurrence of Eurasian Watermilfoil (EWM) in the Missouri River System;
- Control irrigation flows to meet agricultural demand when needed and increase instream flows during critical periods or when irrigation is not needed; and
- Reduce damage to the river bed and banks from annual construction of a diversion dam.

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Proposed Solution
Specific tasks include:

- Replace temporary rock weir with new diversion dam; and
- Install bypass check structure.

Resource and Citizen Benefits Analysis
The project will preserve water quality in the Jefferson Slough and Slaughterhouse Slough by flushing fine-grain sediments seasonally from the Jefferson Slough and by eliminating the annual practice of moving bank and bottom material from the Slaughterhouse Slough. It will also preserve fish habitat and reduce the occurrence of EWM. The project will develop water use and provide local economic benefit by replacing inoperable irrigation infrastructure and reducing EWM impact on existing infrastructure.

Funding Recommendation
DNRC recommends grant funding of $ 96,530 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 46

Applicant Name	Huntley Project Irrigation District	
Project Name	Tunnel 2 – Discharge Line Rehabilitation	
Amount Requested	$ 125,000	
Other Funding Sources	$ 81,000	Applicant In-kind
	$13,586,820	RRGL Loan
Total Project Cost	$13,792,820	
Amount Recommended	$ 125,000	

Project History
The Huntley Project Irrigation District (HPID) diverts water from the Yellowstone River for irrigation on approximately 30,000 acres. The HPID is seeking to accomplish two distinct projects in this application. The Tunnel 2 section of the HPID Main Canal is failing and collapse of the tunnel is a concern. The tunnel was constructed through sandstone and shale with blasting and timber cribbing that is beyond its design life. There is documented irrigation water loss through the Tunnel 2 section and visual observation of tunnel instability is evident. There have been recent efforts to stabilize the tunnel roof; however, these efforts are temporary and are not expected to provide a long-term solution. The HPID Tunnel 2 also poses a safety hazard. It was the site of a drowning in 2016.

The Highline Discharge Line is a 48-inch reinforced concrete pipe that transports pumped irrigation water from the Main Canal to the Highline Canal. The pipe is showing signs of increased instability with rebar exposed and water leakage evident from the surface above the buried pipe. The pipe runs under Interstate 90 and the BNSF railroad tracks. The two pumps serving the Highline Canal are over 70 years old.

Proposed Solution
The goals of both projects are to conserve irrigation water and improve water management in the HPID system. An additional goal of the Tunnel 2 project is to remove the public safety hazard present there and allow HPID to perform routine maintenance with an open canal.

Specific tasks include:
- Reroute the Main Canal around Tunnel 2 along an approximately 4,500-foot alignment;
- Excavate approximately 1.2-million cubic yards of material to construct the rerouted canal;
- Construct roadway access along the new canal;
- Install canal liner on the new canal;
- Install 36-inch diameter twin pipes from the pump stations to the Highline Canal; and
- Bore and jack casing pipe beneath the Interstate 90 and BNSF railroad for one of the pipes.

Resource and Citizen Benefits Analysis
This project will remove an aged and leaking tunnel with an open channel. The replacement of the Highline Discharge pipeline will conserve water that is currently lost to leaking. The water conserved through both project replacements will amount to approximately 7,344 acre-feet of water and will be used to increase crop production within the boundary of the HPID. This project will provide a significant public safety benefit by removing a structure that was involved in the drowning death. The local economy will have the added benefit of increased crop production with the water conserved.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 47

Applicant Name	Simms County Sewer District	
Project Name	Wastewater System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 750,000	TSEP
	$ 201,975	RD Grant
	$ 605,925	RD Loan
Total Project Cost	$1,682,900	
Amount Recommended	$ 125,000	

Project History
The existing facultative lagoon, constructed in 1979, consists of two primary cells and one secondary cell with a spray irrigation system for the treated effluent. The secondary treatment cell has rarely received wastewater from the two primary cells and the irrigation system has never been operated. The original 6-inch bentonite liners in the primary cells have deteriorated over time and leak partially treated wastewater into the aquifer system. The Montana Department of Environmental Quality (DEQ) sanitary survey determined that the lagoons are leaking about 10 times the state's allowable rate. Water balance calculations provided in the preliminary engineering report indicate the lagoons are leaking approximately eight times the allowable rate. A recent television inspection of wastewater collection mains indicates that a number of pipe gaskets are separated and potentially leaking raw sewage into the groundwater system. The Simms Wastewater Improvements project consists of two phases. Phase 1 collection system repairs are currently underway. Phase 2 treatment improvements will be addressed with this project. The goal of the project is to protect and preserve the shallow groundwater aquifer in the area that residents rely on for their domestic water supply.

Proposed Solution
Specific tasks include:

- Remove nearly 40 years of accumulated sludge from the lagoons and land-apply the material on nearby agricultural land to provide nutrients for crops;
- Modify the lagoon piping and replace interpond control structures;
- Line the lagoons to reduce the leaking to state allowable rates; and
- Construct a new spray irrigation system on adjacent agricultural lands for the treated effluent.

Resource and Citizen Benefits Analysis
This proposed project will preserve groundwater quality by lining the lagoon cells to protect the shallow aquifer from contamination with untreated sewage. This will benefit public health because the aquifer supplies drinking water to the community via individual wells. Minor energy conservation benefits will result from the installation of the new spray irrigation system.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 48

Applicant Name	Cut Bank, City of	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$1,356,000	SRF Loan
	$ 750,000	TSEP
Total Project Cost	$2,231,000	
Amount Recommended	$125,000	

Project History
Cut Bank's water distribution system was mostly constructed in 1914 with what is now undersized galvanized and cast iron pipe. There are 108,000 linear feet of pipe needing replacement, with about 40% of the system being severely corroded and undersized 4-inch galvanized or cast iron pipe. There are excessive leakage and maintenance problems with the water distribution system. Recent PERs identified the need to replace much of the distribution system in phased fashion. Cut Bank embarked on a major phased system replacement plan and in 2009 and 2010 replacement projects did replace 14,995 feet of pipe. The proposed project is Phase 3 of an ongoing replacement program to improve system reliability, reduce maintenance costs, and improve fire flow capability in the business and hospital districts.

Proposed Solution
Specific task includes:

- Replace 8,800 linear feet of undersized and corroded cast iron pipe with new PVC pipe.

Resource and Citizen Benefits Analysis
This project will conserve surface water in Cut Bank Creek, and will also conserve energy used to treat and pump water that is being lost to leakage.

Public health and safety benefits will be provided with improved firefighting capacity and a reduction in the potential for backflows caused by low system pressures in portions of the system.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 49

Applicant Name	Montana Department of Natural Resources and Conservation Water Resources Division – State Water Projects Bureau	
Project Name	Flint Creek Water Project – Allendale Canal Intake and Fish Screen	
Amount Requested	$ 125,000	
Other Funding Sources	$ 28,840	Applicant In-kind
	$ 980,000	NRDP Inter-Agency
Total Project Cost	$1,133,840	
Amount Recommended	$ 125,000	

Project History
The Allendale Canal is part of the Flint Creek project owned by the DNRC and maintained and operated by the Flint Creek Water Users Association (WUA). The project consists of a storage reservoir on the East Fork of Rock Creek, about 20 miles southwest of Philipsburg, a main diversion canal across the divide between Rock and Trout Creeks, and four distribution canals in the Flint Creek Valley. The 13-mile Allendale Canal has a 125 cfs design capacity and is located furthest downstream on Flint Creek. The Allendale canal supplies irrigation water to farms and ranches surrounding the community of Hall. The installation of a fish screen on this diversion has been recommended by Montana Fish, Wildlife & Parks (FWP) biologists and managers as a measure to improve trout recruitment to the Clark Fork River.

Proposed Solution
The proposed project would sustain irrigation to the Flint Creek WUA by replacing the deteriorated concrete canal intake structure, as well as protecting and preserving native and game fish on Flint Creek by preventing their entrainment in the Allendale Canal and the adjacent ditches through the installation of a fish screen on the intake.

Specific tasks include:

- Procure an engineer consultant;
- Complete final design of a concrete intake structure and fish screen;
- Put final design of project out to bid; and
- Complete construction of the concrete intake structure and fish screen.

Resource and Citizen Benefits Analysis
The proposed project will conserve water lost through seepage, maintain a regionally significant fishery, and protect public safety. Flint Creek water users depend on this system to sustain the irrigation in the region. The project consists of installing a safe and operable diversion structure, control features and management of water and telemetry system, and removal of headgate due to headgate seepage/loss. The headgate is dilapidated and unsafe to operators and is an inefficient delivery device. The Flint Creek system recorded 2.2 million angler days in 2014 which relates to $724 million in economic generation. Forty-four families depend on this system for irrigation and operation of their crops.

Montana's Natural Resource Damages Program (NRDP) recently identified this canal as part of the final Upper Clark Fork River Basin Aquatic and Terrestrial Resources Restoration Plan due to large amounts of fish entrainment. FWP recommends a new canal intake, fish structure, and measuring device.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 50

Applicant Name	Sheridan, Town of	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 625,000	TSEP
	$ 618,000	SRF Loan
	$ 5,000	DNRC Planning Grant
	$ 15,000	TSEP Planning Grant
Total Project Cost	$1,388,000	
Amount Recommended	$ 125,000	

Project History
Sheridan's original water system was constructed in 1915 with upgrades in the 1940s. The town operates a public water system that consists of a groundwater well supply system, disinfection, storage tank, and transmission and distribution piping system. The water system services are metered. Since 2003, the town has been replacing old and leaking water mains, reducing the average water demand from 783 gallons per capita day to its current 308 gallons per capita day. Further reduction of leakage in the system may eliminate the need for additional supply capacity and reduce the additional storage volume projected for the 20-year planning period. This project will further eliminate leakage and improve system reliability.

Proposed Solution
Specific tasks include:

- Replace 4,225 linear feet of 4-inch water main, with new 8- and 6-inch PVC main, new hydrants, and new service lines to curb stop;
- Install a new 2-inch main and six service connections in the alley north of Main Street;
- Install an emergency generator at the well house;
- Complete recommended safety improvements to the chlorine disinfection system;
- Complete a leak study to identify water system leaks and repair recommendations; and
- Complete recommended storage tank safety improvements.

Resource and Citizen Benefits Analysis
The project will allow the town to offer citizens the benefit of safe drinking water by allowing the town to treat the existing water. The proposed project will replace a portion of the water distribution system to conserve the water previously being lost to seepage. The town will also be able to preserve water quality that is adversely affecting the residents in the town. The town will also address infiltration and inflow of the water distribution system.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 51

Applicant Name	Fort Peck Tribes	
Project Name	Lateral L-42M Rehabilitation, Phase 1	
Amount Requested	$ 125,000	
Other Funding Source	$ 35,868	Applicant In-Kind
Total Project Cost	$ 160,868	
Amount Recommended	$ 125,000	

Project History
The Fort Peck Tribes (Tribes) are proposing a canal rehabilitation and lining project within the Wolf Point Unit of the Fort Peck Irrigation Project west of Wolf Point. Lateral L-42M has been identified as one of the priorities for rehabilitation by the Tribes due to its severe seepage losses and lack of irrigation delivery efficiency. This is the first phase of a multi-phase project to install canal liner through a 2-mile reach of Lateral L-42M, identified as a major contributor to seepage losses in the delivery system. The proposed Phase 1 project will rehabilitate a half-mile reach of Lateral L-42M which was constructed in the early 1930s. The project will conserve diverted water, improve irrigation efficiency, and preserve soil quality through salinity mitigation.

Proposed Solution
The Tribes reviewed five alternatives for rehabilitation and seepage mitigation in Lateral L-42M. A rehabilitation strategy for lining the half-mile reach was developed and is presented below.

Specific tasks include:

- Design and permit the canal lining project;
- Reshape and regrade the existing half-mile reach of canal;
- Rehabilitate the half-mile reach through installation of a new geomembrane liner; and
- Test project components and put into use.

Resource and Citizen Benefits Analysis
The project will promote more efficient use of water, up to about two cfs over the length of the lined section. Reduced seepage would improve efficiency of the conveyance and delivery system making more water available for irrigation. As well, this canal lining will reduce erosion within the canal and preserve water quality in the Sun River. The project also saves energy by reducing pumping operation. Reduction in seepage would provide an economic benefit since about 30 acres adjacent to the canal could be returned to crop production with elimination of saturated soils. Implementation of the project is projected to generate an additional $53,487 annually in increased production of irrigated land.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 52

Applicant Name	Toston Irrigation District	
Project Name	Main Canal Rehabilitation	
Amount Requested	$ 125,000	
Other Funding Source	$ 5,420	Applicant
Total Project Cost	$ 130,420	
Amount Recommended	$ 125,000	

Project History
The Toston Irrigation District (TID) proposes to rehabilitate 0.50 miles of canal to address seepage losses, which occur due to high permeability soils. It is estimated that 480 million-gallons are currently lost by seepage in the reach of concern. Seepage losses have forced users to implement water rationing, which reduces irrigation efficiency throughout the irrigation district. Seepage losses also decrease the amount of water to augment flows in Warm Springs Creek, which diminishes fish and wildlife habitat. The goal of the project is to rehabilitate the canal to prevent seepage loss, improve irrigation efficiency, increase crop production in the area, and improve fish and wildlife habitat in Warm Springs Creek through augmented flows.

Proposed Solution
Specific tasks include:

- Remove organic material from channel bottom;
- Reshape channel bottom to desired dimensions;
- Install ½ mile of Aquamaster Armorliner according to specifications;
- Install 6-inch ballast layer on top of liner; and
- Return flows to channel during irrigation season and monitor effectiveness.

Resource and Citizen Benefits Analysis
This project will develop irrigated acreage by increasing delivery efficiency of surface water to 6,574 acres through the regrading, shaping, and lining of the canal. The rehabilitation efforts will eliminate an estimated 4.79 cfs of water lost to seepage during the irrigation season. The project also saves energy at the Crow Creek Pumping Station.

The Toston Main Canal Rehabilitation project will help provide local economic benefit. Implementation is projected to generate an additional $387,282 annually in increased production of irrigate land. Implementation of the Toston Main Canal Rehabilitation project will help ensure the sustainability of the TID and agricultural production within the Missouri Basin. The project also benefits the public by eliminating safety issues related to saturated canal banks.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 53

Applicant Name	Laurel, City of	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 500,000	TSEP
	$ 393,000	Applicant
Total Project Cost	$1,018,000	
Amount Recommended	$ 125,000	

Project History
Laurel is in Yellowstone County near the Yellowstone River. The water system is over 100 years old and includes a water treatment plant, distribution system, storage tank, booster stations, and two intakes in the Yellowstone River. The city has recently improved aspects of the water system through three phased projects. The next phase of improvements will address the outstanding issues with the water intake structure and raw water pumps. Laurel currently has two raw water intakes in the Yellowstone River: the primary 2003 intake and a back-up 1955 intake. In 2011, the Yellowstone River flooded and caused the river channel to migrate and scour in the vicinity of the Laurel intakes. The change in the river has caused issues at the intakes including frazil ice and low water levels exposing the usually submerged structure. A new intake will soon be constructed in a more stable part of the Yellowstone River approximately three miles upstream from the current location. As a stipulation of the permit for the new intake, the 2003 intake must be removed or modified.

Proposed Solution
The city proposes to modify the 2003 intake by replacing the screens and lowering the top of the structure. In order to further improve the city's water supply, the existing raw water pumps will be modified with variable frequency drives to provide greater operational efficiency and flexibility. A new raw water pump with variable frequency drive will be installed to provide greater capacity to the water treatment plant.

Specific tasks include:

- Lower the 2003 intake structure;
- Install new screens in the 2003 intake;
- Install a new raw water pump with variable frequency drive (VFD);
- Install VFDs on the two existing raw water pumps; and
- Test project components and put into use.

Resource and Citizen Benefits Analysis
This installation of a new VFD pump will result in energy conservation, the redevelopment of an existing surface water resource, and health and safety benefits in the event the primary intake fails or is shut down.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package. Laurel is located on the edge of a designated sage-grouse general habitat area. During project development, it may be necessary to comply with the requirements of the Montana Sage-Grouse Habitat Conservation Program.

Project No. 54

Applicant Name	Clinton Irrigation District	
Project Name	Main Canal Wasteway Rehabilitation and Intake Canal Improvements	
Amount Requested	$ 125,000	
Other Funding Source	$ 11,111	Applicant
Total Project Cost	$ 136,111	
Amount Recommended	$ 125,000	

Project History
The Clinton Irrigation District is off the Clark Fork River approximately 20 miles east of Missoula. The wasteway structure was constructed in the early 1980s and uses a system of wood checkboards in concert with a culvert to regulate water levels in the district intake canal adjacent to the Clark Fork River. The structure has degraded over time and is now inefficient and unsafe for system operators regulating diverted water. In its current state, water is allowed to continually flow through the structure creating flooding hazards for downstream residential areas.

Proposed Solution
The goal of the project is to replace the wasteway structure with a new gate structure along with lining a 900-foot reach of the canal. The district reviewed alternatives for both canal lining and wasteway replacement and developed a rehabilitation strategy presented below.

Specific tasks include:

- Design and permit the canal lining and wasteway structure project;
- Advertise for public construction bids and select a qualified contractor;
- Replace the existing wasteway with a new Langemann gate;
- Rehabilitate approximately 900 linear feet of the Intake Canal using a geomembrane liner; and
- Test project components and put into use.

Resource and Citizen Benefits Analysis
This project provides development of surface water through lining of the canal and improved operation of the wasteway structure. The district will improve delivery efficiency of surface water out of the Clark Fork River to 812 acres by eliminating canal losses of 1,485 acre-feet of water per year. This amount of water conservation is about 0.8 cfs. Water savings – to be used for additional irrigation – of approximately 69.2 mg or 0.7 cfs is obtained through management efficiencies with improved adjustment accuracy from wasteway rehabilitation. The project will benefit safety through replacement of stop logs with an overshot gate, which is safer to operate. This project will benefit the local economy by increasing crop yields estimated at an additional $162,400 for the district each year.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 55

Applicant Name	Tin Cup Water and Sewer District
Project Name	Water Conservation
Amount Requested	$ 125,000
Total Project Cost	$ 125,000
Amount Recommended	$ 125,000

Project History
The Tin Cup Water and Sewer District (WSD) supplies irrigation water to approximately 135 users with 1,600 acres of farmland. The district is approximately two miles west of Darby within Ravalli County. The irrigation distribution system consists of ditches and laterals that extend for approximately nine miles in a northerly direction along the west side of town, starting at the diversion within Tin Cup Creek. Due to highly permeable soils within the project area, the district's ditches experience a significant amount of water losses through seepage. Furthermore, the district's outdated, aging, or improperly installed diversion structures increase seepage-related losses and make for inefficient management of the Tin Cup system. The goals of the proposed project are to conserve water by lining certain sections of the ditch that experience severe seepage as well as improve management of the overall system by replacing outdated or aging diversion structures with headgates. Additional project goals include development of agricultural land within the district and preservation of prime farmlands that are oversaturated as a result of seepage-related water losses.

Proposed Solution
Specific tasks include:

- Complete final design of ditch lining and all proposed headgate structures;
- Obtain regulatory approval from all applicable local, state, and federal agencies;
- On the southwestern end of the Tin Cup Ditch, replace 400 feet of existing, damaged liner and extend liner 200 feet using a reinforced 45 mil ultraviolet (UV) resistant polypropylene liner;
- On the north end of the Tin Cup Ditch install 1,200 feet of new liner using a reinforced 45 mil UV resistant polypropylene liner;
- Replace 11 aging or outdated diversion structures with new headgates; and
- Test all project components and put into use.

Resource and Citizen Benefits Analysis
This project will conserve water and preserve arable land for the purpose of increasing production.

A public economic benefit will result from the increased crop production for the area producers.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 56

Applicant Name	Jordan, Town of	
Project Name	Wastewater System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 500,000	TSEP
	$ 400,000	CDBG
	$ 793,000	RD Grant
	$ 570,000	RD Loan
Total Project Cost	$2,388,000	
Amount Recommended	$ 125,000	

Project History
Jordan's wastewater system consists of 26,000 linear feet of pipe, 67 manholes, 11 lampholes, one lift station and three facultative treatment lagoons. In 2008 the community improved the wastewater system by adding the third facultative lagoon cell, adding lagoon flow and level control structures with isolation valves, replacing 1,700 linear feet of vitrified clay pipe (VCP), and upgrading the pump station by adding a flowmeter, isolation valves and an emergency generator. Since the new facultative lagoon came online in 2009, the plant has failed to meet the limits in the discharge permit. In 26 months Biological Oxygen Demand ($BOD_{5)}$ exceeded limits 22 times, total suspended solids (TSS) exceeded limits 11 times, and *E.coli* exceeded the limits in all 26 months resulting in an administrative order on consent (AOC) issued by the Montana Department of Environmental Quality (DEQ). The goal of the project is to eliminate discharging into Big Dry Creek by upgrading the existing wastewater treatment plant to a total containment system. The improvements would protect water resources, human health, and local wells from contamination.

Proposed Solution
The proposed solution is to upgrade the wastewater treatment plant to meet present-day design standards and protect the environment by eliminating the discharge to Big Dry Creek.

Specific tasks include:

- Convert the three existing cells into primary treatment cells;
- Install a new 23-acre evaporation cell;
- Install a new packaged pump station and emergency generator; and
- Install the necessary piping to connect the new evaporation cell to the existing treatment plant.

Resource and Citizen Benefits Analysis
This project will preserve surface water quality and aquatic habitat in Big Dry Creek by eliminating discharges of inadequately treated effluent into that stream.

The public benefits provided by this project are health and, to a very minor but potential degree, recreation, since a public drinking water health hazard is being eliminated and aquatic habitat is being protected from pollution. The benefits are local.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package. Funding is contingent upon the town further exploring the option of requiring pretreatment of the identified local industrial waste rather than designing the new plant to handle the large waste load.

Project No. 57

Applicant Name	Lincoln County	
Project Name	Ksanka Creek Restoration – Highway 93 to Osloski Road	
Amount Requested	$ 125,000	
Other Funding Sources	$ 17,000	Applicant
	$ 30,000	USFS
	$ 143,210	CDBG
Total Project Cost	$ 315,210	
Amount Recommended	$ 125,000	

Project History
This project is one mile north of the town of Eureka. Due to undersized culverts and lack of a defined floodway channel, this area experiences degraded aquatic and riparian habitat, frequent nuisance flooding, overtopping of channel and drainage structures, contamination threats to the public well at the Creekside Mobile Home Park, access problems during flooding, and dewatering issues that prohibit flows from reaching downstream locations. Contamination threats exist due to the close proximity of the trailer court's sewage cesspools to the creek but the creek's location prevents linking to the municipal wastewater collection system. The project goal is to restore and improve stream functionality, reduce health and safety concerns, and provide recreational and educational opportunities within the Lincoln County Fairgrounds property.

Proposed Solution
Lincoln County proposes to relocate 1,200 feet of Ksanka Creek to a new open-channel route.

Specific tasks include:

- Procure professional engineering services for final design, permitting, project management, and grant administration;
- Perform detailed site survey of existing and proposed creek route to support final design plans;
- Perform final design calculations, and hydraulic/hydrologic modeling;
- Obtain applicable stream and environmental permits from regulatory agencies;
- Coordinate with landowners and stakeholders to determine final design;
- Secure a contractor through bid process and issue a Notice of Award;
- Construct the new channel; and
- Ensure long-term effectiveness through regular site visits for three years after project completion.

Resource and Citizen Benefits Analysis
Surface water quality will be preserved by improving Ksanka Creek's ability to transport sediment and debris, and improving riparian vegetation to reduce thermal pollution. Relocating the proposed stretch of Ksanka Creek will allow the Creekside Mobile Home Park to connect to the Eureka's wastewater system and abandon sewage cesspools which are near the creek. This will preserve surface water and groundwater quality. The project will also preserve stream functionality and conserve baseflows by allowing the stream to run through a less crowded and more functional floodplain. Relocating the identified reach of Ksanka Creek to the Lincoln County Fairgrounds will benefit resource-based recreation because it will help maintain water levels in a youth fishing pond at the fairgrounds. The public health and safety of residents of the Creekside Mobile Home Park will benefit from the reduction of threats to their drinking water quality, improved wastewater treatment, and reduced flood risk to property.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, monitoring plan, administration, budget, and funding package.

Project No. 58

Applicant Name	Manhattan, Town of	
Project Name	Wastewater System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 611,800	TSEP
	$ 486,821	SRF Loan
Total Project Cost	$1,223,621	
Amount Recommended	$ 125,000	

Project History
Manhattan has a conventional gravity wastewater collection system that conveys raw wastewater to the town's mechanical treatment plant. In July 2015, Manhattan entered into an inter-municipal agreement with the nearby Amsterdam-Churchill Sewer District allowing the district to discharge its wastewater stream into Manhattan's collection system for treatment at Manhattan's wastewater treatment plant. Since the Amsterdam-Churchill connection was completed, Manhattan has seen existing issues exacerbated and new problems have arisen. The additional flow from Amsterdam-Churchill not only limits the hydraulic capacity of the collection system, it also has contributed to a marked increase in the concentrations of hydrogen sulfide gas in the system. Hydrogen sulfide is extremely toxic and poses a significant health risk in Manhattan. The main trunk line that connects the south side of Manhattan to the treatment plant has several holes, and leaks allowing excessive infiltration and inflow to enter the wastewater system. The collection system was built in 1960 with improvements occurring since then, but no major improvements. The aging collection system does not meet the minimum slope requirements for sewer mains. These deficiencies, and a consistent population increase, coupled with the increased sewage flows from Amsterdam-Churchill has caused the collection system to operate at or above the original hydraulic design capacity.

Proposed Solution
Specific tasks include:

- Upsize the existing trunk line to increase capacity; and
- Replace and rehabilitate deficient sewer mains within the collection system.

Resource and Citizen Benefits Analysis
The proposed project will provide important public health and safety benefits by reducing or eliminating the stagnation of hydrogen sulfide gas in the wastewater system and the leakage of the gas into homes and businesses. The project will also preserve and protect the quality of a shallow groundwater aquifer and surrounding soils from contamination.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package. Manhattan is on the edge of a designated Sage-Grouse general habitat area. During project development, it may be necessary to comply with the requirements of the Montana Sage-Grouse Habitat Conservation Program.

Project No. 59

Applicant Name	Lower Musselshell Conservation District	
Project Name	Musselshell River Channel Migration Zone Mapping	
Amount Requested	$ 124,994	
Other Funding Source	$ 1,875	Musselshell Watershed Coalition
Total Project Cost	$ 126,869	
Amount Recommended	$ 125,000	

Project History
From 2011 to 2014, three devastating floods hit the Musselshell River. Those floods resulted in millions of dollars of damage to public, transportation, and irrigation infrastructure as well as extensive floodplain scour and/or deposition on agricultural fields in five different counties. The Lower Musselshell Conservation District requires a tool to help landowners and managers make educated decisions about future investments in infrastructure, restoration projects, permitting, and other actions based on river migration patterns.

Proposed Solution
The proposed channel migration zone (CMZ) mapping will span the entirety of the main-stem of the Musselshell River, approximately 340 river-miles.

Specific tasks include:

- Attend four stakeholders meetings and maintain project communication with Musselshell Watershed Coordinator;
- Develop required GIS datasets including acquiring historic imagery and digitizing banklines, digitizing geologic and physical features, and creating an inundation model;
- Generate CMZ maps including all data analysis, report writing, and map creation;
- Conduct three outreach and education meetings to present results; and
- Compile and submit all project GIS data and metadata to the project sponsors and the State Library for archiving.

Resource and Citizen Benefits Analysis
This project will produce information with several potential benefits for renewable resources, including conservation of soil and water, development of land and water, and preservation of water quality, soil, arable land, and aquatic ecosystems.

Economic benefits of this project stem from promotion of wise investment in private property, public infrastructure, and natural resource development and use. Information from this study can also be used for flood emergency response planning to protect public health and safety, and to protect drinking water quality by identifying potential sources of contamination that could be mobilized during a flood. The information may also be beneficial to efforts aimed at protecting and enhancing the Musselshell River fishery and angling recreation.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 60

Applicant Name	Shelby, City of	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 750,000	TSEP
	$ 881,333	SRF Loan
	$ 1,500	Applicant
Total Project Cost	$1,757,833	
Amount Recommended	$ 125,000	

Project History
Shelby's Water System dates back to the 1940s. The city has made numerous improvements and upgrades to the system over the last 70 years. The city of Shelby entered into an agreement with the North Central Montana Regional Water Authority (Authority) in 2011 to purchase water through the regional system. In order to connect communities within the Authority boundaries, the city has agreed to provide up to 870,000 gpd of water to the city of Cut Bank, town of Kevin, Oilmont Water District, town of Sunburst, Sweet Grass County Water District, Galata County Water District, and Devon Water District. These additional water demands more than double the city's projected average day demand of 642,000 gpd and necessitate improvements to increase capacity and reliability of system components.

Proposed Solution
Specific tasks include:

- Winterize four existing wells;
- Install a new wellfield meter;
- Upgrade two existing 4-bulb ultraviolet (UV) disinfection units with larger 6-bulb units;
- Replace three existing pumps and the telemetry system at the Shelby Heights Booster Station to increase capacity for the new Cut Bank supply line;
- Relocate the 16-inch water main located beneath the south tank and replace isolation valves;
- Clean and inspect the five-mile-long 16-inch asbestos-cement (AC) pipe and replace seven gate valves, and
- Install three new emergency generators to improve reliability at the UV treatment building, the Shelby Heights booster station, and the clear well booster station.

Resource and Citizen Benefits Analysis
The proposed project is a public health and safety project and would preserve a public drinking water supply. The project will ensure a safe drinking water supply for growth needs. The project would develop groundwater for drinking water supply.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 61

Applicant Name	Montana Department of Natural Resources and Conservation Water Resources Division – State Water Projects Bureau	
Project Name	Broadwater Missouri Canal System Study and Masterplan	
Amount Requested	$ 100,000	
Other Funding Sources	$ 50,000	Broadwater Missouri WUA
	$ 9,183	Applicant In-kind
Total Project Cost	$ 159,183	
Amount Recommended	$ 100,000	

Project History
The Broadwater-Missouri canal is part of the Broadwater Missouri Project owned by DNRC, maintained and operated by the Broadwater Missouri Water Users Association (WUA). The project consists of a hydropower and diversion dam on the Missouri River, located about two miles east of Toston, and a main canal that splits into an east and west canal. The main canal is 1.5 miles long; the east canal is 34.3 miles long and carries 262 cfs; the west canal is 12.4 miles long. In addition to being the longest canal system owned by the DNRC, it is also the most complex. The major features that contribute to the system's complexity are two steel siphons, and six creek crossings. There are over 200 timber, steel, and concrete structures; these include turnouts, bridges, wasteways, check structures, pumps, and drop structures. The canal system was constructed 76 years ago and has since experienced deterioration, flooding, and modifications. Multiple large issues are known to exist on the canal system, particularly at creek crossings.

Proposed Solution
This proposed project intends to improve irrigation deliveries and practices by performing a topographic survey and elevations of critical structures, performing hydrological analysis in key locations, identifying maintenance/replacement priorities, developing a measurement program, and completing a masterplan to allow for wise investment in future projects to maintain and improve this complex system.

Specific tasks include:

- Survey and record current conditions of this complex system;
- Analyze and recommend engineered solutions to known issues;
- Determine future needs and capital requirements of the system;
- Develop an overall strategy to implement water measurement; and
- Compile a masterplan.

Resource and Citizen Benefits Analysis
This study will identify projects that have the opportunity to conserve water by reducing canal seepage losses, improving water measurement, and enhancing distribution efficiency. The Broadwater Missouri Canal System has the capacity to accommodate additional irrigation development and this study would help to inform any future development. The study may help to preserve agricultural land productivity by ensuring continuity of water delivery service and protecting against flooding resulting from levee/berm failure. The study may also preserve fisheries by improving the six areas where the Broadwater Missouri Canal system crosses and exchanges water with streams.

The proposed study will inform the Broadwater Missouri WUA's capital planning by identifying and prioritizing projects that improve the functionality of its canal system, thus providing economic safety benefits to those irrigators.

Funding Recommendation
DNRC recommends grant funding of $100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 62

Applicant Name	Montana Department of Natural Resources and Conservation Water Resources Division – State Water Projects Bureau	
Project Name	East Fork Rock Creek Main Canal Lining	
Amount Requested	$ 125,000	
Other Funding Source	$ 31,501	Applicant In-kind
Total Project Cost	$ 156,501	
Amount Recommended	$ 125,000	

Project History
The DNRC State Water Projects Bureau is proposing a canal rehabilitation and lining project on the East Fork Rock Creek Main Canal near Philipsburg. A 1,200 foot reach of the main canal has been identified as an area of concern showing signs of severe seepage loss and delivery inefficiencies.

Proposed Solution
The proposed project will rehabilitate a 1,200-foot reach of the main canal improving water management and reducing seepage losses. The project will include rehabilitation of the 1,200-foot reach of canal and installation of 1,200 feet of geomembrane canal liner.

Specific tasks include:

- Design and permit the canal rehabilitation project;
- Advertise for public bids from local contractors and award the project to a private contractor;
- Replace the existing failed liner with 1,200 feet of new geomembrane canal liner; and
- Test project components and put into use.

Resource and Citizen Benefits Analysis
The project will conserve diverted water and improve irrigation delivery efficiency. The project will provide a conservation benefit to water resources by significantly reducing seepage in an area of pervious canal bank material. It will also provide a preservation benefit to the aquatic habitat in Flint Creek and the East Fork Rock Creek Reservoir by maintaining more water in the system.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 63

Applicant Name	Roundup, City of	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Fund Sources	$ 500,000	TSEP
	$ 450,000	CDBG
	$ 200,000	Coal Board Funds
Total Project Cost	$1,275,000	
Amount Recommended	$ 125,000	

Project History
Roundup's original distribution system was installed in 1908 and was composed chiefly of cast iron pipe, which was in prevalent use at that time. Despite numerous pipeline additions and replacement over the years, including 5,600 linear feet during Phase 1 (2012), 4,500 linear feet during Phase 2 (2014), and 6,600 linear feet during Phase 3 (2016), almost 24,000 linear feet of the original, 100-year-old, cast iron pipe remains in use. This pipe has badly deteriorated over time, and city personnel repair an average of two leaks each month. The water supply well pumps were replaced in 2012 and meet the planned supply needs. The existing storage tank is 2 million gallons, was installed in 1982, and is in good condition and sufficient for the planning period. The city's water meters were replaced in 2014. This project is Phase 4 of ongoing water main replacements in Roundup.

Proposed Solution
Specific tasks include:

- Replacing all cast iron water mains within the system (almost 24,000 linear feet) with minimum 8-inch PVC water mains; and
- Replacing approximately three blocks of existing 4-inch diameter PVC with 8-inch diameter PVC.

Resource and Citizen Benefits Analysis
The project will provide direct economic development in Montana mainly through construction jobs and public health benefits by delivering clean drinking water. The project will allow Roundup to conserve energy and reduce groundwater usage by reducing the volume of water pumped to and leaking from its distribution system. By replacing all 38,000 feet of deteriorated water mains, it is estimated that Roundup will reduce water loss by up to 20 million gallons per year and save the city an estimated $5,800 in energy costs. This project is the next phase in replacing Roundup's old water distribution system.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 64

Applicant Name	Custer County	
Project Name	Custer County Miles City Flood Control	
Amount Requested	$ 125,000	
Other Funding Sources	$ 350,000	USACE
	$ 225,000	Applicant
Total Project Cost	$ 700,000	
Amount Recommended	$ 125,000	

Project History
Flooding of the Miles City area near the confluence of the Yellowstone and Tongue Rivers has been an historic and recurring problem. Damage to commercial, residential, and agricultural areas has had a tremendous adverse economic impact to the area. Existing noncompliant levees have been ineffective in protecting infrastructure and resources. The project goal is to design and construct a levee system that complies with current U.S. Army Corps of Engineers (USACE) and the Federal Emergency Management Agency (FEMA) criteria with institutional control for future maintenance and operation of the levee system. The immediate use of RRGL funds is to complete a cost-shared feasibility study for the project.

Proposed Solution
Specific tasks include:

- Identify existing conditions and design alternatives;
- Complete public scoping of project;
- Initiate and conduct environmental compliance components;
- Formulate alternatives for design;
- Complete feasibility report with a recommended alternative; and
- Acquire approval from the Corps of Engineers.

Resource and Citizen Benefits Analysis
This proposed study may lead to preservation of surface water quality, groundwater quality, agricultural land, and wetland and riparian ecosystems which are home to endangered species including pallid sturgeon and interior least tern. The existing embankment was constructed using various hazardous materials which pose contamination risks to renewable resources. There are also brownfield sites, storm drainage systems, and underground septic tanks within one mile of the existing noncertified levee system that could further contaminate river waters should the existing structure be breached or overtopped by ice jams.

The study offers economic benefits to the community of Miles City by leading to a reduction in flood insurance premiums. Public health and safety would benefit from a new and improved levee which would help protect lives and critical drinking water and water treatment infrastructure. Indications from USACE are that this feasibility study is highly likely to lead to project implementation.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 65

Applicant Name	Scobey, City of	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 500,000	TSEP
	$ 772,375	RD Grant
	$2,317,125	RD Loan
	$ 10,000	Applicant
Total Project Cost	$3,724,500	
Amount Recommended	$ 125,000	

Project History
About 45% of the water distribution system operated and maintained by the applicant consists of cast iron water main which was originally constructed in 1919. The cast iron pipelines are undersized, deteriorating, and subject to increased risk of failure. The poor condition of the water main results in excessive leaks, and the rate of unaccounted for water is estimated at approximately 35% of the annual water production. The distribution system is also incapable of providing adequate fire flow at various hydrant locations. The applicant proposes to replace water main and several appurtenances in a phased approach based on prioritization while managing the impact to water rates to improve the reliability of the distribution system, increase fire flow at hydrants, and reduce the rate of unaccounted for water.

Proposed Solution
Specific tasks include:

- Replace 9,978 feet of existing water main with 8-inch water main using pipe bursting as the installation method;
- Replace 1,813 feet of existing water main with 8-inch water main using open cut excavation as the installation method;
- Install new fittings, gate valves, and hydrants related to new water main construction;
- Reconnect water services and install new service lines; and
- Complete surface restoration, such as paving and seeding of areas disturbed by construction activities.

Resource and Citizen Benefits Analysis
The proposed project will result in conservation of drinking water and energy and protect public health and safety. The leaky system also allows for infiltration of groundwater which is high in iron. The system currently loses up to 20 million gallons per year or 40% of the treated water supply which would cost $8,000 in energy costs to produce (80,000 kWh).

The applicant cannot address repair demands as needed and as a result cannot operate an adequate fire flow. The project is primarily to benefit public health and safety.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 66

Applicant Name	Wilsall Water District	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 102,694	SRF Loan
	$ 99,500	SRF Grant
Total Project Cost	$ 327,194	
Amount Recommended	$ 125,000	

Project History
Wilsall's water system consists of two wells which pump directly into the distribution network and supply the 100,000-gallon storage tank. Several components of the water system are aging, are in need of repair, or would benefit from additional safety features. The existing water service meters, pump flow meter, and radio telemetry system are all over 20 years old. Replacing these components will allow for better management of the water. A recent Montana Department of Environmental Quality (DEQ) sanitary survey recommended improvements to the storage tank which will reduce the human health and safety risks.

Proposed Solution
Specific tasks include:

- Replace the existing water service meters with new radio read water meters;
- Replace the existing flow meter in the pumphouse with a new flow meter;
- Replace the existing radio telemetry system with a new radio telemetry system;
- Recoat the exterior of the storage tank;
- Install a tank ladder and safety cage; and
- Install security fencing at the tank site.

Resource and Citizen Benefits Analysis
The proposed project will assist in the overall management of the public water system by providing reliable water distribution throughout the town and improving water system safety. The project will allow Wilsall to conserve energy and groundwater by managing water usage with a new metering system. The most significant benefit from this project is to the public safety.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 67

Applicant Name	Hot Springs, Town of	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 478,632	TSEP
	$ 450,000	CDBG
	$ 34,000	InterCap Loan
Total Project Cost	$1,087,632	
Amount Recommended	$ 125,000	

Project History
Hot Springs' water system was originally constructed in 1933 utilizing surface water from a nearby waterway. Groundwater sources for the system were developed in the late 1930s through the 1960s. The town has two water storage tanks that provide approximately 200,000 gallons of storage for the system. The water distribution system was originally cast iron but has been replaced with PVC during projects in 1987 and 2003. The town relies on three groundwater wells to meet the DEQ's requirements for pumping capacity. Two of the three wells are not used unless absolutely necessary due to high radium contamination and adverse pumping influence on the local hot spring pools. One of the existing tanks was inspected and the interior of the tank is in immediate need of recoating to prevent paint from contaminating the water supply and to prevent the exposure of the steel tank to water and corrosion.

Proposed Solution
Specific tasks include:

- Construct and develop a new water supply well;
- Provide improvements to an existing well house;
- Provide a backup power generator for the largest of the existing wells;
- Install water meters with data logging capabilities at each of existing wells;
- Abandon one of the town's three existing wells;
- Rehabilitate the town's water storage tanks with new coatings and a new dome roof; and
- Extend a new water main to a developing platted area of town.

Resource and Citizen Benefits Analysis
This project will conserve energy in two ways. First, it will remove Well #3 from service, and it will develop a new well in the same building as Well #1, saving an estimated 33% of the town of Hot Springs' expense for heating and maintenance of the well houses by reducing the number of well houses from three to two. Second, it will extend a water main on the northeast part of town to replace small diameter service lines which will conserve energy by reducing friction losses and allow the system to better serve existing and future connections in that area.

The energy conservation will provide economic benefits by reducing energy costs for the town of Hot Springs. Resource-based recreation will benefit because the project will reduce demand on Well #2 which has pumping influence on a nearby hot water well that supplies water to a local resort. Removal from service of the well with elevated levels of radium (a carcinogen), and rehabilitation of the water storage tank will improve drinking water quality for the benefit of public health and safety.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 68

Applicant Name	Winifred, Town of	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 500,000	TSEP
	$ 450,000	CDBG
	$ 215,500	SRF Loan
	$ 100,000	Applicant
Total Project Cost	$1,390,500	
Amount Recommended	$ 125,000	

Project History
Much of the water distribution system operated and maintained by the applicant was originally constructed of 4- and 6-inch asbestos cement pipe in 1952. The inadequate size of the water mains results in fire flow and pressure deficiencies due to the relatively low static and operating pressures in the system. The existing 50,000-gallon water storage tank is insufficiently sized to provide adequate volume to meet demands and fire flow requirements, and the elevation of the tank is too low to provide sufficient operating pressure.

Winifred's water supply is groundwater. The first well was drilled in 1988, and the second well was drilled in 1998. The well system lacks proper metering and is not equipped with sample taps; the process piping and appurtenances are located in an underground vault, which is in violation of regulatory requirements. Individual services are currently not metered, and residents are charged a flat rate for water service, regardless of how much water is used. The proposed improvements are intended to improve operating pressures, provide adequate fire flow volume, and support a volumetric rate structure.

Proposed Solution
Specific tasks include:

- Replace the existing storage tank with a 170,000-gallon reinforced concrete water tank located at a higher elevation to provide increased volume and operating pressures;
- Install 2,400 feet of 10-inch diameter water main to connect the new water tank to the existing water distribution system;
- Upgrade the well system with the proper configuration of meters, process piping, valves, and sample taps; and
- Install a new metering system at individual services and implement a billing system that charges for the actual amount of water used by residents to encourage water conservation.

Resource and Citizen Benefits Analysis
The proposed project will benefit the safety, health, and welfare of the residents in and around Winifred. The project will provide the community with adequate fire flow and correct the identified pressure deficiencies. The project will also produce better conservation and preservation of local groundwater through metering of the individual connections. Metering will enable better management by identifying significant differences between measurement of the water produced and the water consumed. Metering will also promote conservation by charging customers for water consumed instead of charging a flat monthly rate.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 69

Applicant Name	Montana Department of Natural Resources and Conservation Water Resources Division – State Water Projects Bureau	
Project Name	Nevada Creek Water Project – Douglas Canal Lining Replacement	
Amount Requested	$ 125,000	
Other Funding Source	$ 30,637	Applicant In-kind
Total Project Cost	$ 155,637	
Amount Recommended	$ 125,000	

Project History
The DNRC State Water Projects Bureau is proposing a canal liner replacement project located on the Douglas Canal within the Nevada Creek Water project near Helmville. A 650-foot reach of canal liner was installed in 1992 which has since failed causing canal seepage losses and reduced irrigation efficiency. The project will include replacement of the original 650-foot reach of canal liner with a 750-foot reach of new geomembrane canal liner.

Proposed Solution
The DNRC rehabilitation strategy for improvement of the 750-linear-foot reach is presented below.

Specific tasks include:

- Design and permit the canal rehabilitation project;
- Advertise for public bids from local contractors and award the project to a private contractor;
- Replace the existing failed liner with 750 feet of new geomembrane canal liner; and
- Test project components and put into use.

Resource and Citizen Benefits Analysis
The proposed project will conserve water lost through seepage and improve irrigation water efficiency. The project consists of lining a 750-foot reach of the Douglas Canal. The project will preserve fish and wildlife habitat and recreation by conserving water within Nevada Creek and Reservoir

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 70

Applicant Name	Denton, Town of	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 625,000	TSEP
	$1,339,500	RD Loan
	$ 446,500	RD Grant
Total Project Cost	$2,536,000	
Amount Recommended	$ 125,000	

Project History
The town of Denton is served by a central water system supplied by a deep well and a spring source. Water from the springs is blended with water from the well and conveyed through a treatment building where it is treated for iron and disinfected before it is transported to a 93-year-old water storage tank. Water flows through approximately three and a half miles of old cast iron transmission main into the town's water distribution system. In 2012 the town's spring source was classified as being under the influence of surface water and the town was required to enter into an Administrative Order on Consent (AOC) requiring the system to come into compliance with the Surface Water Treatment Rule. This AOC also requires that the town address serious deficiencies in its existing storage tank. The town's storage tank needs repairs to its roof and wall seals. Additionally, the existing tank and transmission main are not sized to provide adequate fire protection for the town.

Proposed Solution
Specific tasks include:

- Demolish the existing water storage tank;
- Construct a new 290,000-gallon, glass-lined steel storage tank at a new location;
- Construct a new 12-inch diameter transmission main from the new tank to the town's distribution system;
- Install cartridge filtration on the spring water supply;
- Replace the existing cast iron transmission main with a new PVC transmission main; and
- Install a new radio telemetry system to automate operation of the water system.

Resource and Citizen Benefits Analysis
The project will conserve energy and reduce groundwater usage by reducing the volume of water pumped to and leaking from its existing transmission main. Citizen benefits include improved fire-fighting capabilities, some cost-savings from reduced energy use, and local economic development by improving reliability of the town water supply.

The project will provide economic development in Montana mainly by providing the town with clean, reliable drinking water. Denton conducted a needs assessment and public meeting that 15 people attended. Letters of support came from the Denton Public Schools, DOT, Farmers State Bank, the Denton Park District, and form letters from 34 private and business people.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 71

Applicant Name	Fort Benton, City of	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 500,000	TSEP
	$ 907,000	SRF Loan
Total Project Cost	$1,532,000	
Amount Recommended	$ 125,000	

Project History
Fort Benton's water system consists of an infiltration gallery, pumps, an ultraviolet (UV) and chlorine disinfection system, three storage tanks, and a distribution system. The water source is a groundwater infiltration gallery that collects groundwater into a caisson where it is pumped through the disinfection system and into the city's distribution system. The city is served by three water storage tanks ranging in age from 45 to over 80 years old. These tanks are at the end of their service lives. All three of these tanks require recoating of both their interior and exterior surfaces. The overflows, access hatches, and ladders need to be improved to meet the Montana Department of Environmental Quality (DEQ) standards and address water security, system operation, and operator safety issues. Currently, any tank failure or loss of use would reduce the water supply available to the system resulting in the system being unable to provide adequate fire protection flows for critical facilities including the hospital and schools.

Proposed Solution
Specific tasks include:

- Remove three water storage tanks within the city's water system;
- Construct a new 900,000-gallon on-grade, glass-lined steel storage tank; and
- Install new 12-inch and 10-inch transmission mains from the new tank down to the core of the existing distribution system.

Resource and Citizen Benefits Analysis
The primary benefit from this project is public health and safety. The public water supply is currently stored in tanks that have reached the end of their useful life and do not provide adequate fire flows. Conservation of the district's water resource will be improved with installation of the new transmission main. This project will provide safe and reliable water storage capacity for the city of Fort Benton.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 72

Applicant Name	Absarokee Water and Sewer District	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 500,000	TSEP
	$3,018,000	SRF Loan
Total Project Cost	$3,643,000	
Amount Recommended	$ 125,000	

Project History
Absarokee Water and Sewer District, in Stillwater County, is governed by an elected, five-member board. The current district was created in 1996. Previous to that, a private water-user association served the Absarokee community beginning in 1953. Portions of the Absarokee Water System date back to wells installed in the 1940s. The water system serving the Absarokee community comprises groundwater supply wells, chlorine disinfection, storage facilities, and a distribution system. The district provides water to approximately 435 users. The district does not have a history of any applicable violations of regulatory compliance. Since 1998 the district has completed numerous improvements to the water system. In 2013, the district constructed a new 200,000-gallon steel tank on the hill near the existing 200,000-gallon concrete tank. It has also replaced approximately 8,300 linear feet of old steel main with new polyvinyl chloride (PVC) pipe throughout the system. While no significant failures of a particular component of the system have been reported, there is, on average 70% unaccounted for water, much of which is believed to be from leaking mains. Completion of recommended distribution system improvements will significantly reduce the amount of unaccounted-for water resulting in conservation of water.

Proposed Solution
Specific task includes:

- Replace the remaining steel water mains with new 6-inch, 8-inch, and 10-inch PVC pipe, inclusive of valves and fire hydrants.

Resource and Citizen Benefits Analysis
The town of Absarokee will be replacing existing pipes with larger diameter pipes that would allow the town to meet the current Montana Department of Environmental Quality (DEQ) regulations. The town will also be conserving water that is currently being lost to seepage in old pipes and prevent water loss. This project will allow the town to run the pumps less and therefore conserve energy.

This project will also improve health and safety for the citizens of the town by increasing fire protection.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 73

Applicant Name	Hysham Irrigation District	
Project Name	Re-Lift Canal Improvement	
Amount Requested	$ 125,000	
Other Funding Sources	$ 29,196	Applicant
	$ 4,270	Applicant In-kind
Total Project Cost	$ 158,466	
Amount Recommended	$ 125,000	

Project History
The Hysham Irrigation District is proposing a canal rehabilitation project located on the Re-Lift Canal three miles south of Hysham. The existing canal was constructed with minimal grade and only one water control structure in 5,500 feet of canal.

Proposed Solution
The project area currently has problems with seepage loss and irrigation delivery efficiency due to the lack of water control structures and poor canal grade. The project will include regrading of 8,600 linear feet of the canal along with installation of two over-shot water control structures to better manage diverted water. The proposed project will rehabilitate and regrade an 8,600-linear reach of the Re-Lift Canal and install two water control structures. The project will conserve diverted water, improve irrigation efficiency, reduce energy consumption at the Re-Lift Station, and preserve soil quality through salinity mitigation.

Specific tasks include:

- Design and permit the canal rehabilitation project;
- Reshape and regrade the existing 8,600-foot reach of canal;
- Replace the single existing water control structure with two new over-shot water control structures; and
- Test project components and put into use.

Resource and Citizen Benefits Analysis
The project will require less water to be pumped, which will reduce energy costs. Implementation of the project will generate additional income for the producers by increased crop production and additional acres of irrigation. This is a local economic benefit. The project will promote more efficient delivery of water by reducing seepage resulting in the need for less pumped water. The result of more efficient delivery and control from new structures will result in increased crop production and potentially additional acres of irrigation.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 74

Applicant Name	Deer Lodge, City of	
Project Name	Municipal Well Replacement	
Amount Requested	$ 125,000	
Other Funding Source	$ 4,800	Applicant
Total Project Cost	$ 129,800	
Amount Recommended	$ 125,000	

Project History:
The city of Deer Lodge relies on groundwater for its public water supply. Arsenic in one of Deer Lodge's municipal wells has recently increased in concentrations above the Montana State Water Quality Standard. In order to comply with Montana Public Water Regulations the city must locate the source for a new well that will have sufficient capacity and acceptable quality to serve as a municipal well. This project will include the investigations necessary to locate and develop a public water supply replacement well.

Proposed Solution:
The project objectives are to complete a well search to document water quality and quantity information and install at least one test well to collect water quality and aquifer capacity information along with geological sampling as needed to design the proposed replacement supply well.

Specific tasks include:

- Conduct investigation of existing wells in the study area for water quality and quantity;
- Select the most favorable location for a new water supply well;
- Procure services for the drilling project;
- Complete at least one test well; and
- Form recommendations for installation of a new municipal supply well.

Resource and Citizen Benefits Analysis
This project is likely to lead to the development of a new, safer drinking water supply for Deer Lodge. Project results will measure water quality and availability from the test well. While the investigation itself would not benefit public safety, it would lead to a project that would provide Deer Lodge with clean plentiful drinking water. The dependable availability of clean, municipal water would benefit the local economy.

Funding Recommendation
DNRC recommends grant funding of $ 125,000 upon development and approval of the final scope of work, administration, budget, and funding package. In addition to this application, the project sponsor should consider seeking a DNRC Reclamation and Development Planning Grant to investigate the source of arsenic contamination. If arsenic in the well is the result of mining activities, the project would be eligible for a full Reclamation and Development Project Grant in 2019.

Project No. 75

Applicant Name	Flathead Conservation District	
Project Name	Whitefish Water Treatment Plant and Resource Optimization	
Amount Requested	$ 86,005	
Other Funding Sources	$ 10,000	Applicant
	$ 20,000	In-kind Contribution-Stoltz Land & Lumber Company
Total Project Cost	$ 116,005	
Amount Recommended	$ 86,000	

Project History
Approximately 90% of water used annually in Whitefish comes from three creeks located within Haskill Basin, with the remainder coming from a single surface water intake located in Whitefish Lake. Water is collected in a surface water holding reservoir north of the city and, following treatment, the water is placed into a number of holding tanks for distribution. Haskill Basin water sources contain pollutants during spring runoff from horse barns on Big Mountain. Also, water pumped from Whitefish Lake has to be pumped 0.8 miles to the treatment plant, adding significant cost to supplying the water. Concerns beyond the potential contamination of sources for the city's water supply are the increased sediment rate that could result from a catastrophic crown fire in the Haskill Basin.

Proposed Solution
The purpose of the project is to collect data necessary to support optimization of treatment plant operations, conserve water and other natural resources, reduce sediment and nutrient loading of Haskill Basin creeks, and prepare for potential effects of a large crown fire in the Haskill Basin.

Specific tasks include:

- Water sample collection from reservoir, collection of flow data for reservoir seepage study, compilation of natural resources information, and preparation of draft narrative of findings;
- Prepare design criteria, mass balance development, automated source diversion investigation, raw water reservoir evaluation, water treatment process evaluation, Whitefish Lake intake investigation, wildfire mitigation planning, hydropower plant assessment, and summary report;
- Assimilate and evaluate flow information from flow meters, water treatment plant meter records, and stream gauging stations. Complete a water balance analysis from Haskill Reservoir, and prepare a technical memorandum correlating data with regard to water treatment plant operations;
- Complete a GIS analysis of project area and prepare project map products;
- Analyze water samples; and
- Prepare a post catastrophic fire plan.

Resource and Citizen Benefits Analysis
This investigation and planning project is likely to lead to preservation of surface water quality if best management practices for source water collection areas and post-fire erosion control are implemented. It will likely lead to water and energy conservation if flow management recommendations are followed. The project, if implemented, is likely to economically benefit whitefish, and improve public health and safety by increasing dependability of whitefish drinking water supply.

Funding Recommendation
DNRC recommends grant funding of $86,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 76

Applicant Name	Toole County Conservation District	
Project Name	Eagle Aquifer Evaluation, North-Central Montana	
Amount Requested	$ 116,227	
Other Funding Source	$ 35,586	MBMG In-kind
Total Project Cost	$ 151,813	
Amount Recommended	$ 116,230	

Project History
The Eagle Aquifer underlies a six-county region including Toole County and is a critical groundwater resource for the area. The aquifer extends into Canada where the Geological Survey of Canada (GSC) has developed a groundwater flow model to evaluate water use from the aquifer. Because data for the model is lacking in Montana, the model is inaccurate when applied to the aquifer in Montana. Toole County Conservation District seeks a means to take advantage of the useful water management tool developed by the GSC.

Proposed Solution
This project will collect new essential data for the model on the U.S. side and provide data to the GSC. The GSC has agreed to incorporate data into the model (no project funds are being used to pay the GSC). The model will be shared with the U.S. and made available to public and private users. Toole County proposes to contract with the Montana Bureau of Mines and Geology (MBMG) to coordinate with the GSC.

Specific tasks include:

- Inventory approximately 250 Eagle Aquifer wells in the area;
- Monitor static water levels in up to 10-wells for 2.5 years;
- Sample 30 wells for analysis of major ions, trace elements, and isotopes;
- Present and interpret new and existing aquifer data; and
- Publish a final report for the project.

Resource and Citizen Benefits Analysis
The proposed evaluation could lead to further development of groundwater for drinking water and agricultural purposes. Water planners can use this information coupled with the GSC model to predict availability throughout the region. Because this project identifies recharge areas and springs and improves Montana's understanding of groundwater availability, it increases the region's resiliency to drought conditions by providing alternatives to surface water sources when needed.

Funding Recommendation
The proposed study area is roughly the same as the service area for the Rocky Boys North Central Regional Water System which may need interim water supplies before the treatment plant is completed. DNRC recommends grant funding of $116,230 upon development and approval of a work plan that includes coordination with Montana's Regional Water program to identify potential locations for high production wells from the Eagle Aquifer.

Project No. 77

Applicant Name	Missoula County	
Project Name	Sunset West Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Source	$ 12,624	Applicant In-kind
Total Project Cost	$ 137,624	
Amount Recommended	$ 125,000	

Project History
The Sunset West Water System is in Missoula County near the foothills of Lolo National Forest. The water system was constructed in 1999 and includes one underground well, 9,700 feet of 4-inch transmission main, 83,000-gallon storage tank, and a network of 3/4-inch and 1-inch service lines. The water system serves 46 connections, 38 are active. The system is considered at maximum capacity and no further development is anticipated. Recently, the Sunset West Water System has experienced problems with short circuiting, accumulation of a thin film on the water surface, and presence of total coliform bacteria. The water system continually needs to flush and disinfect the storage tank, wasting finished water and operations resources.

Proposed Solution
Specific tasks include:

- Reconfigure transmission line and vault valves to prevent short circuiting;
- Install new tank mixer; and
- Install new 55-gallon sodium hypochlorite drum with chemical metering pump.

Resource and Citizen Benefits Analysis
The primary purpose of this project is to address public health and safety concerns from obvious faults in the system. The project may conserve groundwater resources by eliminating redundant flushing flows needed to protect public health and removing water quality threats to public health. The project will also conserve energy related to flushing the system.

Funding Recommendation
DNRC recommends grant funding of $ 125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 78

Applicant Name	Gallatin Local Water Quality District	
Project Name	Bridger Range Front Hydrogeologic Investigation	
Amount Requested	$ 124,863	
Other Funding Source	$ 37,659	Applicant In-kind
Total Project Cost	$ 162,522	
Amount Recommended	$ 125,000	

Project History
The Bridger Range Front is on the west side of the Bridger Mountains in the Gallatin Valley. The area has been under residential development for several decades and was partially designated a temporary Controlled Groundwater Area until the DNRC denied permanent status as there was no proof of long-term impact potential. New construction and development on the Bridger Range Front is often met with controversy concerning groundwater availability and potential impacts to existing homeowner wells. Existing monitoring wells in the area exhibit only slight declines in water levels and it is uncertain if these declines are due to interference from neighboring wells or overdrawing of the aquifer. The Gallatin Local Water Quality District would like to better understand groundwater flow, availability, and recharge in order to advise county water managers about new developments in the area.

Proposed Solution
This project intends to develop and interpret hydrogeologic data for an area of about 20 square miles and which is centered on the main development of the Front-Range. The project intends to identify recharge sources and interconnections among aquifers from newly collected water quality data which will provide useful information for planners, developers, and homeowners with respect to water use and water rights.

Specific tasks include:

- Compilation of existing data and reports on the area hydrogeology;
- Geological analysis and 3D map development;
- Sampling and analysis of water from up to 100 wells for major ions and isotopes; and
- Data interpretation, analysis, reporting, and presentation.

Resource and Citizen Benefits Analysis
Results of the proposed investigation could be used by local governments to determine where to encourage or discourage development (develop or conserve) based on groundwater availability (flow, seasonal impact from irrigation, recharge). This project could also assist local governments with drought resiliency planning. Benefits are local and uncertain because results of the study are not directly linked to action by a regulatory body. The project would likely benefit the local economy by identifying candidate areas for groundwater development.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 79

Applicant Name	Missoula, City of	
Project Name	Restoration and Migration of Public Access Damage – Clark Fork River, Phase 1	
Amount Requested	$ 124,146	
Other Funding Sources	$ 73,370	Missoula CD Grant
	$ 10,000	Applicant
	$ 37,274	Applicant In-kind
Total Project Cost	$ 244,790	
Amount Recommended	$ 125,000	

Project History
The urban corridor of the Clark Fork River through Missoula is heavily used for recreation. Thirty-four sites were identified as eroding with varying degrees of severity along the south bank of the river. This project seeks to preserve and improve aquatic and riparian habitat in the Clark Fork River by focusing river users to durable access points and by restoring and revegetating the riverbank with native vegetation. Alternatives to the proposed solution included no action, riprap, and access closure.

Proposed Solution
The proposed project includes final design, engineering, permitting, construction, and monitoring of the following elements at 27 access points (Sites 1-27) to the river within Missoula.

Specific tasks include:

- Cobble beach access at Sites 6 and 7 using rock stairs, streambank bioengineering, and riparian buffer enhancement (approx. 140 feet);
- Rock terrace and stair access at Site 13 combined with riparian buffer enhancement at Sites 12 and 14 (approx. 90 feet);
- Rock stair access at Sites 9, 18, and 27 (approx. 45 feet);
- Close access with fencing and riparian buffer enhancement at Sites 2, 3, 4, 5, and 8 (approx. 280 feet);
- Willow staking at Sites 10 and 11 (approx. 30 feet); and
- Conifer and upland shrub plantings at Sites 19, 20, and 22 (approx. 100 feet).

Resource and Citizen Benefits Analysis
This restoration project will preserve access to a regionally important river and improve public safety. The restoration activities will reduce sedimentation to the Clark Fork River and protect riparian and aquatic habitat. The project consists of fencing, habitat improvements, and streambank stabilization.

The project is mainly a public safety project with minor recreation development and habitat preservation components.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 80

Applicant Name	Circle, Town of	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 625,000	TSEP
	$ 450,000	CDBG
	$ 50,000	Applicant
Total Project Cost	$1,250,000	
Amount Recommended	$ 125,000	

Project History
The town of Circle's approximately 31,800 linear feet of water distribution system was installed in the 1930s and 1940s, the majority of which is asbestos cement with the remainder being cast iron pipe. The existing pipe is undersized, deteriorated, and fragile causing excessive leaking (approximately 40% of annual water production) and cannot meet standards for minimum pressures and fire flows. Several areas in the town are lacking the required amount of valves and fire hydrants. Many of the existing valves and fire hydrants are no longer operable.

Proposed Solution
The proposed project will: replace the inoperable fire hydrants; add hydrants and valves where required; replace a significant portion of the existing asbestos cement and cast iron water mains to reduce the amount of unaccounted-for water, and provide adequate hydraulic capacity to meet the required minimum pressures and fire flows.

Specific tasks include:

- Replace 6,600 linear feet of existing asbestos cement and cast iron pipe through pipe bursting;
- Replace the existing fire hydrants and water valves associated with the water main replacement;
- Replace water meters with radio-read meters; and
- Test project components and put into use.

Resource and Citizen Benefits Analysis
This project will conserve groundwater by reducing leakage losses in Circle's water mains. The project will also conserve energy by reducing groundwater pumping and reducing the volume of water that needs to be treated with reverse osmosis.

The economic benefit to Circle resulting from the reduced energy costs associated with pumping and treatment is estimated to be $15,745 per year. The project will benefit public health and safety by ensuring that Circle's water system has enough fire hydrants, water pressure, and water to fight fires. It will also ensure availability of the drinking water supply.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, funding package, and only upon the condition that the final asbestos cement pipe replacement alternative is in compliance with the National Emission Standards for Hazardous Air Pollutants (NESHAPs).

Project No. 81

Applicant Name	Stanford, Town of	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 500,000	TSEP
	$ 196,377	RD Grant
	$ 383,199	RD Loan
	$ 25,000	Applicant
Total Project Cost	$1,229,576	
Amount Recommended	$ 125,000	

Project History
Stanford obtains its drinking water supply from four active wells. The town owns and can operate up to 10 groundwater wells. The town has experienced both water quality problems (iron, manganese, and hardness) and water yield problems with its existing well system due to the aquifer in which the wells are drilled. The water quality has caused issues with the existing well screens causing them to foul over time, further reducing yield. During the summer months, the town lacks adequate water supply to meet maximum day demands. The result is that the town must impose water restrictions in order to try and keep adequate amounts of water in the storage tank for firefighting. The goal of the project is to improve the water supply for the town.

Proposed Solution
Specific tasks include:

- Drill 1 new Madison aquifer well;
- Connect the new well to the existing distribution system;
- Secure new water rights for the new well;
- Address existing wells water rights;
- Abandoned unused wells #1 and #8,
- Demolish related well buildings; and
- Rehabilitate existing wells #5, #7, #9, and #10.

Resource and Citizen Benefits Analysis
The project will provide public safety benefits by delivering clean drinking water. The project will allow the town of Stanford to conserve energy and reduce groundwater usage by reducing the volume of water pumped to and leaking from its existing transmission main. Citizen benefits include reduced operation costs and improved firefighting capabilities.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 82

Applicant Name	West Great Falls Flood Control and Drainage District	
Project Name	Riverbank Erosion Rehabilitation and Repairs	
Amount Requested	$ 125,000	
Other Funding Source	$ 186,000	Applicant
Total Project Cost	$ 311,000	
Amount Recommended	$ 125,000	

Project History
Following the 2011 floods on the Sun River in Great Falls a small section of riverbank erosion (approximately 50 feet) was identified. The erosion threatens infrastructure that is critical for Great Falls (flood control levees, Interstate 15 Bridge, several smaller roads, city water mainline, and other minor infrastructure). Since 2011, the West Great Falls Flood Control and Drainage District has been monitoring the increase of the erosion, both in stream length and lateral migration. The eroding streambank is now over 850 feet in length and is actively eroding the levees. The city developed a preliminary engineering report in 2015 to assess riverbank stabilization alternatives, develop construction cost estimates, and engineering and technical information, and documentation for the successful completion of the project.

Proposed Solution
The proposed project will stabilize approximately 850 feet of a streambank on the Sun River immediately upstream from the Interstate 15 bridge as well as increased levee protection. The project will use an Armored Riverbank to address the erosion, which will include riprapping the streambank.

Specific tasks include:

- Procure a professional engineering contractor to complete the final streambank designs;
- Acquire all necessary permits for project implementation;
- Procure a construction contractor and materials for project implementation;
- Follow design constraints for the riverbank armoring;
- Install geotextile fabric and then riprap on approximately 850 feet of streambank on the north side of the Sun River;
- Reseed all disturbed areas with native vegetation;
- Install permanent erosion control blanket; and
- Complete all grant and permitting closeout/as-built/monitoring requirements.

Resource and Citizen Benefits Analysis
The project will provide public safety benefits by protecting a flood protection levee, and a highway bridge abutment from erosion damage. For the benefit of public health, the project will also help to protect a water main that runs under the Sun River. The 20-year economic benefit of the selected alternative is estimated to be $114,700 for the West Great Falls Flood Control and Drainage District.

This project will provide short-term preservation of water quality in the Sun River and Missouri River by reducing the sediment loading.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 83

Applicant Name	Nine Mile Water and Sewer District	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 750,000	TSEP
	$1,574,346	RD Grant
	$2,372,924	RD Loan
	$ 1,000	Local
Total Project Cost	$4,823,270	
Amount Recommended	$ 125,000	

Project History
The Nine Mile Water and Sewer District (WSD) is due east of Sunburst and includes approximately 130 square miles in the planning area and has 44 residential users. The district does not have existing water infrastructure. Residents utilize cisterns for water storage which they fill by trucking water from Sunburst. In an effort to eliminate the need to drive to Sunburst for water, which on average results in 560 miles per month for each user, the district is proposing installation of a water distribution system which will be supplied by and connected to Sunburst's water system.

Proposed Solution
The improvements proposed will result in a new water distribution system for the district and provide the 44 residential users with a water supply.

Specific tasks include:

- Install approximately 46 miles of 4-inch water main to serve the 44 residents;
- Install approximately 16 miles of water service line and connect to 44 residents;
- Construct new water storage tank; and
- Construct water booster station.

Resource and Citizen Benefits Analysis
This project will develop a new drinking water source and distribution system for the Nine Mile WSD. Users on the system also plan to utilize the proposed distribution system for stock water and irrigation, in addition to drinking water. Therefore, this project will offer preservation benefits for riparian areas by providing off-stream stock water.

The project will support economic development in the region by providing water for drinking, irrigation, and livestock, and will benefit public health and safety by providing citizens within the district's service area with a source of drinking water.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 84

Applicant Name	Montana Bureau of Mines and Geology – Montana Tech	
Project Name	Irrigation Efficiencies and Domestic Groundwater Supplies	
Amount Requested	$ 125,000	
Other Funding Source	$ 31,250	MBMG
Total Project Cost	$ 156,250	
Amount Recommended	$ 125,000	

Project History
Flood irrigation practices on agricultural land near the Yellowstone River, has served as a significant groundwater recharge source for more than a century. Conversion from flood to sprinkler irrigation can result in reduced recharge to the alluvial aquifer and eventually instream flows. The impact to groundwater and surface water from flood to sprinkler irrigation conversions varies from site to site and is sometimes difficult to predict.

Proposed Solution
This research project aims to identify locations in irrigated valleys in Yellowstone, Carbon, and Big Horn Counties that are particularly sensitive to reduced recharge rates and use the data to inform irrigators about strategic pivot placement that would protect rural groundwater resources.

Specific tasks include:

- Evaluate and prioritize agricultural fields for monitoring;
- Install eight monitoring wells on four fields;
- Measure changes to groundwater quality and quantity;
- Measure potential recharge from ditch loss along irrigation ditches near the study fields;
- Monitor soil conditions on study fields; and
- Construct and publish an informational pamphlet and poster on irrigation recharge and pivot siting considerations; resent project findings at public presentations to southeastern Montana conservation districts, the Natural Resource Conservation Service, area irrigators, and well users.

Resource and Citizen Benefits Analysis
The benefits from this study are dependent on water users interest in implementing study results when siting center pivots. This study would add to the body of knowledge regarding impact from converting from flood to center pivot and could help irrigators use water more efficiently and protect the availability of rural groundwater supplies through:

- Conservation of groundwater by identifying where and when withdrawals would have the least impact on the aquifer;
- Preservation of instream flows/fish habitat by identifying where and when withdrawals would have the least impact on surface water flow; and
- Benefiting the local economy by contributing to sustaining a viable agricultural resource. It will not contribute to recreation or health and safety.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 85

Applicant Name	Brady County Water and Sewer District
Project Name	Water System Improvements
Amount Requested	$ 109,400
Total Project Cost	$ 109,400
Amount Recommended	$ 109,400

Project History

The Brady County Water and Sewer District (WSD) water system upgraded its water system in 1948, 1949, 1993, and most recently in January 2015. The latest upgrades included disconnection from the local water treatment plant, connection of the distribution system to the North Central Montana Regional Water Authority (NCMRWA), construction of a 125,000-gallon elevated storage tank, construction of a new bulk water station, replacement of over 3 miles of water main, and construction of approximately 630 linear feet of looping mains. The most recent 2015 upgrade had problems with improperly installed service lines, leading to significant water losses through leaks. The unaccounted for water is estimated to be 35%, which is a substantial financial loss due to water charges assessed by NCMRWA. The Brady County WSD has not had functioning water meters since 2011, making it difficult to properly manage the system and charge users appropriately.

Proposed Solution

Specific tasks include:

- Replace the existing water meters with new advanced radio-read meters;
- Install a wired communication network at the bulk water station;
- Install a data collection unit; and
- Install a phone service at the bulk water station.

Resource and Citizen Benefits Analysis

While this proposed project will not actually fix the leaks in Brady County WSD's system, it will help promote conservation of water and energy. Installation of water meters will help promote water conservation by using pricing signals to encourage customers to use less water, allow Brady County WSD to purchase less water from NCMRWA, and help to identify the locations of leaks in the distribution system. Fixing leaks will also improve Brady County WSD's ability to maintain pressure in its water system, which will yield energy conservation benefits. Economic benefits will result from reduced demand for water and energy.

Funding Recommendation

DNRC recommends grant funding of $109,400 upon development and approval of the final scope of work, administration, budget, and funding package. The proposed project will not address leaks in the system associated with the project completed in 2015. The district should continue to address existing sources of leaks as a contingency of this funding recommendation.

Project No. 86

Applicant Name	Bigfork County Water and Sewer District	
Project Name	Water Storage and Distribution Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 750,000	TSEP
	$3,116,000	SRF Loan
Total Project Cost	$3,991,000	
Amount Recommended	$ 125,000	

Project History
The Bigfork County Water and Sewer District was created in 1984; however, portions of the system have been in service since the 1960's. In 1993 two new water supply wells and a storage tank were constructed. In 2014 two additional water supply wells were drilled and a portion of a secondary transmission line was constructed. The district needs an additional 750,000 gallons of water storage to meet the Department of Environmental Quality standards for storage capacity. The existing transmission main does not have adequate capacity to meet the future demands. A new water transmission line is needed to connect to the new water tank, provide redundancy in the system, and provide adequate hydraulic capacity to meet peak demands and flows for fire protection. The project will provide a more efficient and sustainable water supply for the district. Improved management capacity will be possible with the proposed improvements.

Proposed Solution
The proposed solution is to increase water storage capacity to meet current standards.

Specific tasks include:

- Install a 750,000-gallon water storage tank;
- Install an access road to the new water storage tank;
- Install 5,000 linear feet of 16-inch transmission line, directionally drilling under Highway 35;
- Install fire hydrants and air release valves; and
- Test project components and put into use.

Resource and Citizen Benefits Analysis
This project is primarily an energy reduction project with minimal resource benefits. The only renewable resource benefit associated with the project is a likely reduction in the amount of electrical energy required to pump raw water from the wells to the storage reservoirs due to head losses reduction in the transmission system. The project will enable the district to expand its water service and continue to provide a safe and reliable source of drinking water to its customers and will allow the community to grow economically.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 87

Applicant Name	Chinook, City of	
Project Name	Water System Upgrades	
Amount Requested	$ 125,000	
Other Funding Sources	$ 625,000	TSEP
	$2,040,000	SRF Loan
Total Project Cost	$2,790,000	
Amount Recommended	$ 125,000	

Project History
The majority of the city's drinking water distribution system was constructed prior to 1957. Transmission mains between the water treatment plant (WTP) and the city are undersized, as are several other portions of the distribution system. Additional concerns identified in the distribution system are hydrants that do not meet state standards, an area of 6-inch main which has been identified as having frequent main breaks, inoperable fire hydrants, isolation valves with decreased functionality, and one un-looped portion of the system which supplies a critical water user, the Sweet Home Caregiving Residence. Another concern associated with the distribution system is the location of the bulk water station at the WTP. The city cannot restrict access to the WTP since the bulk water station is located at the plant which creates potential security concerns for the WTP. There are also safety issues associated with the bulk water users traveling through the WTP, specifically, blocking the chemical delivery location. The goals of the project are to improve the reliability of the distribution system and address security concerns at the WTP.

Proposed Solution
Specific tasks include:

- Loop a dead-end water main;
- Replace undersized water mains;
- Replace 13 fire hydrants;
- Install 20 isolation valves; and
- Construct a new bulk water station.

Resource and Citizen Benefits Analysis
This project will provide minor conservation benefits to surface water in the Milk River, and also energy by reducing line leaks and breaks. A public health risk due to water stagnation will be eliminated through system looping and the elimination of dead ends. Also, a potential security threat at the WTP will be eliminated through the construction of a new bulk water station removed from the plant area.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package. Chinook is located within a designated Sage-Grouse general habitat area. During project development it will be necessary to comply with the requirements of the Montana Sage-Grouse Habitat Conservation Program.

Project No. 88

Applicant Name	Lockwood Irrigation District	
Project Name	Pump Station Rehabilitation	
Amount Requested	$ 125,000	
Other Funding Source	$ 31,500	Applicant In-kind
Total Project Cost	$ 156,500	
Amount Recommended	$ 125,000	

Project History
The Lockwood Irrigation District (LID) is in Yellowstone County. The LID serves approximately 244 acres of farmland and provides irrigation water to 1,280 households by diverting water out of the Yellowstone River through the pump station. The pump station consists of three pumps (two primary and one backup) which supply water to two delivery canals. The current pumps are operable but at the end of their useful life, and the backup pump (Pump 1) is oversized for the actual irrigation demands. Pump 1 supplies more water than the system demands. Improvements are needed for more efficient delivery of water to the canal system and increased pump station flexibility. Additionally, an audit by NorthWestern energy shows that improvements would reduce energy consumption at the pump station.

Proposed Solution
The LID Pump Station Rehabilitation project involves electrical improvements and the replacement of one of the primary pumps (Pump 3).

Specific tasks include:
- Replace Pump 3 with a VFD pump; and
- Replace corresponding electrical equipment.

Resource and Citizen Benefits Analysis
Renewable resource benefits for the Lockwood Pump Station Rehabilitation project are the preservation of 244 acres of agricultural irrigation, the conservation of 1,325 acre-feet of surface water from the Yellowstone River, and the conservation of energy resources through reduced pumping. The percentage of land irrigated for agricultural purposes by the LID has been greatly reduced by the development of subdivided residential lots. Historically, the irrigation district provided irrigation water for up to 2,113 acres of agricultural land.

The project will also benefit the LID users with reduced pumping cost by installing a more efficient pump and the reduced chance of flooding by removing an oversized pump.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 89

Applicant Name	RAE County Water and Sewer District	
Project Name	Falcon Hollow #2 Well	
Amount Requested	$ 125,000	
Other Funding Source	$ 243,053	Applicant
Total Project Cost	$ 368,053	
Amount Recommended	$ 125,000	

Project History
The applicant intends to increase its water supply capacity via the construction of additional wells to meet increased water demands associated with the planned annexation of new subdivisions. The Falcon Hollow #2 Well is the first of four wells required to comply with required water source capacity standards. Landowners involved in the annexation agreements are transferring irrigation water rights to the applicant, and the water rights will be used as mitigation water to offset surface water depletions caused by the additional wells. The phasing of future well projects and additional water supply capacity will be based on rate of development in the area.

Proposed Solution
Specific tasks include:

- Drill, develop, and test pump a new well with a capacity of 70 to 125 gpm;
- Construct a well house including the submersible pump and related electrical, mechanical, and control system equipment; and
- Install approximately 100 feet of water transmission main.

Resource and Citizen Benefits Analysis
This project will develop groundwater to be used as a drinking water source for current and future Gallatin County residents in the area west of Bozeman which is served by the RAE County Water and Sewer District (WSD). The project will support local economic growth and public health and safety benefits for residents.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 90

Applicant Name	Malta, City of	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 500,000	TSEP
	$ 450,000	CDBG
	$ 44,110	Applicant
Total Project Cost	$1,119,110	
Amount Recommended	$ 125,000	

Project History
The first well used in Malta was constructed in 1913 for the swimming pool. The swimming pool well was refurbished in 1993 and is currently in use. The four wells which currently supply drinking water to Malta are the Robinson, Legg, New Pool, and New Catholic wells, which were constructed or refurbished in 1968, 1981, 1993, and 1999 respectively. A chlorination system and new telemetry system were installed at each well in 1999. Also, a standby generator was purchased for the New Catholic well in 2006. Malta is constructing Phase 1 improvements to the water system.

The city water mains consist of old ductile iron and transite pipe which are brittle and susceptible to damage. Frequent main breaks reduce reliability and fire protection. A single water main supplies neighborhoods in the northwestern section of the city. Many dead ends exist throughout the distribution system. In 2012, the city of Malta commissioned a preliminary engineering report to address these deficiencies. Malta prioritized water mains at or near 75 years of age and water mains that do not supply necessary fire flow per Montana Fire Codes for repair and replacement.

Proposed Solution
This project will include replacing approximately 4,000 linear feet of existing main with new 8-inch PVC water main, installing approximately 14 8-inch gate valves, and replacing 11 fire hydrants, several of which are inoperable.

Specific tasks include:

- Install a new main to increase reliability on the east side of the city; and
- Replace inadequate and high maintenance mains.

Resource and Citizen Benefits Analysis
The proposed project addresses aging infrastructure on Malta's water system. Replacing leaking water mains will conserve groundwater, the source of Malta's water supply. No meters or management of water will be part of the application and no calculation loss was provided. The project will also improve safety of Malta citizens by improving reliability of the water system for firefighting.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 91

Applicant Name	Lockwood Water and Sewer District	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 625,000	TSEP
	$1,430,000	SRF Loan
	$1,000,000	Applicant
Total Project Cost	$3,180,000	
Amount Recommended	$ 125,000	

Project History
The Lockwood WSD is in Yellowstone County, near Billings. In 1955, the Lockwood Water and Sewer District (WSD), was established and used groundwater as its water supply. In 1987, the district's source of water was changed to surface water from the Yellowstone River and the treatment plant was constructed. Currently the system encompasses 5,148 acres and includes 1,882 service connections. The district's raw water pumps were originally installed at an incline and require significant maintenance as they are not designed to function at an incline. Additional problems include damage to the Johnson Lane Reservoir due to ice buildup, the blowers beyond their useful age, and the lack of a chlorination stand-by unit is in violation of Montana Department of Environmental Quality (DEQ) standards.

Proposed Solution
Specific tasks include:

- Remove incline pumps;
- Construct new raw water intake pump station;
- Update chlorine disinfection system;
- Upgrade air blowers at the treatment plant; and
- Add a mixer to the Johnson Lane Reservoir.

Resource and Citizen Benefits Analysis
This project is expected to conserve energy by replacing the current incline intake pumps with horizontal intake pumps which use less energy. The project's work plan calls for an analysis and comparison of pre- and post-project energy consumption.

This project is anticipated to provide economic benefits for the Billings area by supporting the district's ability to provide water supply for a planned 300-acre industrial park.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 92

Applicant Name	Ekalaka, Town of
Project Name	Flood Study
Amount Requested	$ 123,463
Total Project Cost	$ 123,463
Amount Recommended	$ 125,000

Project History
Ekalaka participates in the National Flood Insurance Program but currently regulates floodplain development using an outdated and inaccurate Flood Hazard Boundary Map. Inaccurate flood maps result in poor enforcement in floodplain construction and hinder planning efforts to minimize flood damage. In addition, the extent of flooding has been exacerbated by inadequately sized drainage structures such as (culverts, ditches, and bridges).

Proposed Solution
The town seeks to conduct a preliminary flood study as a first step to updating the flood hazard maps and also to evaluate drainage structures to determine if modification or replacement of the structures would decrease the flooding impact to the town.

Specific tasks include:

- Solicit and hire an experienced engineering firm to conduct the study;
- Conduct a hydrologic study to determine sources of water entering the community and the frequency and magnitude of flooding;
- Evaluate the existing drainage infrastructure to determine the capacity and ability to pass expected flows; and
- Recommend alternatives for drainage infrastructure improvements.

Resource and Citizen Benefits Analysis
The purpose of this project is to reduce the risk of damage to structures in Ekalaka. The application did not include tasks that would benefit renewable resources. If the project leads to reduced risk of flooding in Ekalaka, the risk of contamination to Russell Creek from pollutants released during flood events would likely be reduced. In addition, an accurate floodplain map would provide local economic benefits because property owners would likely pay less for insurance.

Funding Recommendation
DNRC recommends increased grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package to address the identified resource problem. Funding is contingent on the following condition:

Develop a scope of work that will:

- Comply with Federal Emergency Management Agency (FEMA) requirements and not hinder the town's standing in the National Flood Insurance Program; and
- Include measures that address preservation of the form and function of Russell Creek as it flows through Ekalaka.

Project No. 93

Applicant Name	Conrad, City of	
Project Name	Water System Improvements	
Amount Requested	$ 125,000	
Other Funding Sources	$ 500,000	TSEP
	$2,495,916	SRF Loan
Total Project Cost	$3,120,916	
Amount Recommended	$ 125,000	

Project History
Conrad's drinking water comes from Lake Frances and is pumped to the water treatment plant by a pump station constructed in 2006. The city's WTP was upgraded in 2002. Following the treatment plant upgrades, the plant has experienced above average backwash frequency due to air binding in the sand filters. Water from Lake Frances is high in dissolved oxygen, and the dissolved oxygen comes out of solution in the filters. Air is trapped within the filter media and provides resistance to the flow of water through the filter, creating air binding, which forces the plant into a backwash cycle. The excess backwashing reduces treatment efficiency and testing has shown that 4.6% of treated water produced is wasted during backwash. The excess backwash cycles cause the plant to exceed state standards. The city also has two aging water storage tanks. The tanks are showing signs of corrosion and rust, and require recoating. The goals of the project are to improve efficiency of the water treatment plant and extend the service life of the existing storage tanks.

Proposed Solution
Specific tasks include:

- Replace the existing water treatment equipment with new Ultrafiltration/Microfiltration equipment; and
- Recoat both water tanks to avoid permanent corrosion damage.

Resource and Citizen Benefits Analysis
The project will provide minor conservation benefits to energy consumed during the excessive backwash cycles currently existing. Additionally, a relatively small amount of surface water will be conserved, since backwashing "wastes" treated water during the process.

Funding Recommendation
DNRC recommends grant funding of $125,000 upon development and approval of the final scope of work, administration, budget, and funding package.

Project No. 94

Applicant Name	Sweet Grass County Conservation District	
Project Name	Yellowstone River Channel Stabilization and Surface Water Protection, Phase 2	
Amount Requested	$ 125,000	
Other Funding Sources	$ 100,000	RRGL Grant
	$ 385,000	WRDA Grant
	$ 10,000	Applicant In-kind
Total Project Cost	$ 620,000	
Amount Recommended	$ 125,000	

Project History
The Sweet Grass County Conservation District is in Sweet Grass County near Big Timber. The Yellowstone River Channel Stabilization and Surface Water Protection project proposes to stabilize the Yellowstone River channel to protect Greycliff Bridge and the Lower Sweet Grass County Road. For over 20 years, accelerated bank erosion and channel migration have occurred upstream from the Greycliff Bridge, creating an immediate threat to a public road. Lower Sweet Grass County Road, by way of the Greycliff Bridge, serves 250 square miles of agricultural and public lands in northeastern Sweet Grass County. The proposed project aims to ensure continued function of this transportation corridor and to maintain channel stability within the Yellowstone River corridor.

Proposed Solution
Specific tasks include:

- Repair 600 feet of existing exposed revetment along Lower Sweet Grass County Road;
- Install 1,135 feet of bio-enhanced riprap upstream and downstream from the exposed revetment;
- Install 1,655 feet of buried revetment to protect the county road; and
- Place pre-cast concrete box culverts in the floodplain adjacent to the Greycliff Bridge.

Resource and Citizen Benefits Analysis
This project will preserve agricultural land along the river due to erosion. This project will provide short-to medium-term economic benefits by preserving a travel route that the Sweet Grass County community depends on for commerce. However, channel cutting of the roadway bank is likely to continue in the long term.

Funding Recommendation
DNRC recommends grant funding of $125,000 contingent upon the applicant developing a revised scope of work that accommodates the proposed budget or securing an adequate funding package and approval of the final scope of work, administration, budget, and funding package. As the project cost is estimated at over $950,000, the scope of work presented in the grant application will need to be modified to meet the proposed budget of $620,000 or additional funding will need to be secured. Grant funding is conditional on the applicant securing a feasible funding package.

CHAPTER III
Coal Severance Tax Loans to Public Entities

Application Administration and Project Review Procedures
Applications for public loans are accepted by the Department of Natural Resource and Conservation's (DNRC) Resource Development Bureau until May 15 of each even-numbered year at the same time other applications are due from public applicants under this program. These loans are provided with proceeds from the sale of Coal Severance Tax (CST)-secured bonds and can be offered at a subsidized interest rate. The subsidy is paid with coal tax revenues.

Project Solicitation
Applications for public loans are solicited through the same process DNRC uses to solicit public grant applications described in Chapter II. The availability of low-interest loan funds is widely advertised through direct mailings, press releases in association with commercial newspapers, and contacts made during promotional workshops conducted jointly by DNRC, Department of Commerce, and Department of Environmental Quality (DEQ) at the local level. The same application form is used for both grant and loan applications.

Application Review
All public loan applications received by the deadline are evaluated for completeness. Those missing documentation, application fees, or other basic requirements are notified and allowed time to submit additional material. After applications are reviewed for completeness and any additional information needed has been obtained from the sponsor, completed applications are given to the team of key reviewers for review and evaluation. Loan applications are reviewed to determine financial, environmental, and technical feasibility as well as renewable resource and citizen benefits.

Funding Recommendations
All feasible public loan applications eligible for funding receive a favorable funding recommendation if the applicant demonstrates the ability to repay the loan. DNRC's recommendation includes the amount of financing needed to meet project and financing expenses and the interest rate suggested. There is no maximum allowable funding level. Public loans are limited to the amount an applicant has the ability to repay under standard repayment terms and by DNRC's bonding capacity. Loans can be reauthorized from prior sessions.

Availability of Loan Funds
In 1981, the Legislature adopted Senate Bill 409 to provide up to $250 million in Montana CST bonds. CST bonds are issued for financing projects and activities in the state specifically authorized by the Legislature. Statutes dictate that loans made from CST bond proceeds are to be administered by DNRC, and that DNRC is to review each project to determine its technical and financial feasibility.

Although the legislation was adopted in 1981, CST loans were not issued for the first few years because the constitutionality of the state's bonding authority under this program was initially challenged. In February 1984, the Montana Supreme Court ruled in the state's favor in *Grossman v. State of Montana*, and the first Montana CST bond was sold to finance loans during that same year.

In September 1985 the board of examiners adopted a general resolution pursuant to which all subsequent CST bonds have been issued. A copy of this resolution may be obtained from DNRC. The general resolution requires that the bonds issued be secured on a parity basis. This means that all subsequent CST bond issues have the same rights on proceeds flowing into the trust fund to pay bondholders. However, to assure bondholders there will always be enough CST revenue to meet debt service payments, the general resolution restricts the cumulative amount of bonds that can be issued. This restriction is more constraining than the $250 million statutory limit. The general resolution does not allow any additional CST bonds to be issued if annual debt payments exceed 50 percent of the CST revenue allocated to the trust, plus 50 percent of the loan repayments received from local government borrowers.

Loan Repayment
CST revenue is used to pay the difference between payments received from local government borrowers and the state CST bond payments. Thus, CST bonds are paid with revenue from payments from local government borrowers along with CST proceeds.

To implement these repayment provisions, the statute established a fund structure within the permanent coal tax trust fund. Fifty percent of CST proceeds flowing to the permanent trust fund are first deposited in the CST bond fund. A portion of the proceeds deposited in the bond fund is transferred to the debt service account to pay for the interest rate subsidies. An amount equal to a year's debt service payment on all CST bonds is held in reserve in the bond fund.

The interest earnings are transferred to the CST income fund. These interest earnings are then transferred to the general fund.

DNRC currently has 44 CST Loans that are currently outstanding as of June 30, 2016 (Table 2). The total amount outstanding is $24,595,232.

Table 2 Coal Severance Tax Loans/Resource Development Public Loan Balances as of June 30, 2016

Applicant	Balance Due		Applicant	Balance Due
Beaverhead County – Red Rock Water and Sewer District	$ 616,948		DNRC-Toston Dam	$1,727,396
Brady Water and Sewer District	$ 120,373		East Bench Irrigation District	$ 56,591
Bridger Pines County Water and Sewer District	$1,058,745		Fairfield, Town of	$ 54,203
Bridger, Town of	$ 79,192		Fort Benton, City of	$ 76,628
Buffalo Rapids Irrigation District #1	$ 418,243		Four Corners County Water and Sewer District	$3,003,613
Daly Ditches Irrigation District	$ 101,635		Hysham, Town of	$ 15,653
Daly Ditches Irrigation District	$ 271,286		Hysham, Town of	$ 550,914
DNRC-Ackley Lake Dam Rehabilitation	$ 124,405		Libby, City of	$ 224,114
DNRC-Bair Dam Rehabilitation	$ 334,563		Libby, City of	$ 724,047
DNRC-Cottonwood, Middle Creek Water Users Association	$ 773,135		Lockwood Water and Sewer District	$ 769,916
DNRC-Deadman's Basin Water Users Association	$ 30,695		Malta Irrigation District	$ 896,444
DNRC-Deadman's Basin Water Users Association	$ 297,829		Manhattan, Town of	$1,003,322
DNRC-Deadman's Basin Water Users Association	$ 483,209		Mill Creek Irrigation District	$ 384,604
DNRC-East Fork Siphon	$ 165,562		Mill Creek Water and Sewer District	$ 108,221
DNRC-East Fork-Rock Creek Dam	$ 50,000		St. Ignatius, Town of	$ 154,770
DNRC-Martinsdale Reservoir	$ 59,005		Sunburst, Town of	$ 33,126
DNRC-North Fork of the Smith Water Users Association	$ 237,165		Sunburst, Town of	$ 212,063
DNRC-Nevada Creek Dam	$ 198,343		Ten Mile Creek Estates Pleasant Valley	$ 231,089
DNRC-Petrolia Water Users Association	$ 28,148		Thompson Falls, City of	$ 186,120
DNRC-Ruby Dam	$1,789,072		Tin Cup Water and Sewer District	$ 31,006
DNRC-Ruby River Water Users Association	$1,571,783		Troy, City of	$1,835,757
DNRC-Ruby River Water Users Association	$2,707,299		Yellowstone Boys and Girls Ranch Water and Sewer District	$ 799,000
			Total	**$24,595,232**

Interest Rates

Loans may be provided at a rate less than the rate at which the state bond is sold for all or part of the term. During the financial review of each loan application, DNRC prepares a funding recommendation that includes a recommended interest rate. Recommendations are developed consistent with past direction provided by the Long-Range Planning Subcommittee of the Legislature.

The basic interest rate on CST loans is determined by the bond market at the time CST bonds are sold. The rate of interest on most loans from the program will vary in accordance with the rate on the state CST bonds. The basic rate of interest for each public loan financed from the proceeds of a single bond issue is the same. Subsidies vary, depending on legislative authorization.

Project Management
DNRC reviews each public loan application to determine whether the project is technically and financially feasible. A project is considered financially feasible if sufficient funds can be made available to complete the project and if sufficient revenue can be obtained to repay the loan and to operate, maintain, and replace the project. After a public loan is authorized by the Legislature and the project sponsor is ready to secure financing, DNRC performs a more thorough review of the applicant's ability to repay the loan. At this time DNRC may require access to the applicant's most recent financial statement, budget documents, and other documentation in order to assess whether the proposed project is truly financially feasible.

If the borrower provides documentation of the ability to repay a loan and all legal requirements to incur debt are met, a loan agreement is prepared and executed to make specific requirements and covenants with respect to the project being financed. Borrowers must acquire all property rights necessary for the project including easements needed for a project's construction, operation, and maintenance. As appropriate, these and other stipulations also are contained in a bond resolution. Unless otherwise authorized, each loan, including principal and interest, shall be payable over a term approved by DNRC not to exceed the term authorized by the Legislature. The cost of issuing the state's bond also is paid by borrowers.

Each borrower must agree not to sell, transfer, lease, or otherwise encumber the project, any portion of the project, or interest in the project without DNRC's prior written consent. Further, the borrower must notify DNRC of any changes or modifications in a project both before and during construction. Borrowers are required to acquire and maintain, with respect to the project, property, casualty, and liability insurance. Insurance policies must name DNRC as a certificate holder for notification purposes.

For local government revenue bonds, borrowers must establish a system fund to segregate the revenue of the system or district. Within the system or district fund, the following accounts are generally established: construction account, operating account, revenue bond account, bond reserve account, replacement and reserve account, and surplus account. These accounts ensure that the system's revenue and other funds are properly applied in a manner reasonably satisfactory to DNRC.

Loans are disbursed by warrants drawn by the state auditor or by wire transfers authorized by the state treasurer in accordance with the provisions of this rule and the bond resolution. No disbursement of any loan funds shall be made unless DNRC has received from the borrower: 1) a duly adopted and executed bond resolution in a form acceptable to DNRC; 2) an executed bond in a principal amount equal to the loan amount, also in a form acceptable to DNRC; 3) a certificate from an official of the governmental unit stating that no litigation is threatened or pending that would challenge the governmental unit's authority to undertake the project, to incur the loan, to issue the bonds, and to collect revenue; 4) an opinion from the bond counsel that the bond is a valid and binding obligation of the borrower payable in accordance with its terms; and 5) any other closing certificates or documents that DNRC or the bond counsel may require.

Project Monitoring
Borrowers must maintain proper and adequate records of accounts that show the complete and correct entries of all receipts, disbursements, and other transactions related to the project and, if applicable, the monthly gross revenue derived from the project’s operation. Any segregation and application of the gross revenue resolution must also be shown in such reasonable detail as determined by the borrower to be in accordance with generally accepted accounting practices and principles.

Projects are closely monitored during construction for compliance with approval contract documents and the loan agreement.

The loan agreement requires an annual financial report for the life of the loan. This report includes a statement that details the project's income and expenditures for the fiscal year; the identification of capital expenditures that separate them from operating expenditures; a balance sheet as of the end of the fiscal year; the number of premises connected to the project at the end of the fiscal year; and the amount of cash on-hand in each account of the fund at the end of the fiscal year.

CHAPTER IV
Renewable Resource Grants and Loans to Private Entities

Grant Application Administration and Project Review Procedures
Applications for water-related projects from any individual, association, for-profit corporation, or not-for-profit corporation, may be considered for funding. Only water-related projects may be funded. Projects must have quantifiable benefits that will exceed costs. Projects must also provide public benefits in addition to any private benefits.

Grant Project Solicitation
To solicit applications from private entities that provide significant public benefits, the Montana Department of Natural Resources and Conservation (DNRC) Conservation and Resource Development Division (CARDD) has chosen to target public water systems operated by private water user associations, small agricultural projects that need help, and individuals mandated to upgrade their present systems. The agricultural projects have included inspection on private high-hazard dams, and water measuring devices on chronically dewatered streams. Dam and water-measuring projects were solicited by the Dam Safety Bureau and the Water Management Bureau of the Water Resources Division of the DNRC. In addition to the projects solicited by the above-mentioned organizations, DNRC also accepts applications at any time from any water system. Grantees are given one year to complete the project.

Grant Application Review
All applications received by CARDD are evaluated and ranked by the staff of the Resource Development Bureau (RDB) according to the extent each application presents a project that is critically needed, will protect public health, provides opportunities for resource conservation, and improves the environment. Applications received by the Dam Safety Bureau and Water Management Bureau are reviewed and submitted to the RDB staff with a recommendation. All applicants must hold or be able to acquire all necessary lands other than public lands and interests in the lands and water rights necessary for the construction, operation, and maintenance of the project.

Criteria for evaluating private grants are similar to the criteria outlined in Chapter II for public grants. As with public grants, private grants are also evaluated to determine the potential adverse environmental impacts. Projects that would result in significant impacts would not be recommended for funding until an environmental assessment or an environmental impact study has been completed. Recommendations are made to minimize impacts and to ensure that appropriate steps are taken to protect the environment. Any potable water system project must be approved by the Montana Department of Environmental Quality (DEQ) to ensure that it meets state standards.

Grant Funding Recommendations
According to the Montana Constitution, the Legislature may not appropriate funds to private individuals. However, state entities have the authority to distribute public funds to private individuals. To provide for private grants, the 1993 Legislature appropriated $100,000 to DNRC to fund grants for private entities. Since 1993, with the exceptions of the 2003 and 2015 sessions, the Legislature has appropriated funds each biennium for grants to private entities.

RDB staff reviews and screens grant requests to determine whether the proposed projects are technically and financially feasible and will make recommendations based on criteria outlined in statute. DNRC will not recommend feasibility studies, research, and/or public information projects for funding. By law, grant funding for any project may not exceed 25% of the total estimated cost of the project.

Grant Project Management
RDB staff notifies applicants of their funding status after approval. DNRC does not reimburse any project cost incurred before a formal funding agreement is executed.

Grant Project Monitoring
The project grant contract agreement between DNRC and the project sponsor includes monitoring procedures to ensure that the project meets program intent. The equivalent of one full-time staff administers active private grants and private loans. Budget and staffing constraints preclude site involvement by RDB staff at all projects.

Project sponsors must: (1) pay all project costs, (2) submit a claim and obtain a reimbursement of allowable costs from DNRC, or (3) arrange for an advance of funds. Invoices may be submitted monthly, and all costs must be supported by invoices, receipts, or both.

Grant Project Evaluation
Grant agreements require expenditure reports and a final report. During the contract term, the project sponsor must submit quarterly reports to RDB staff. These reports must reflect the percentage of the project completed, project costs to date, any problems encountered, and the need for any amendment to the grant contract. In response to changes in project scope of work, time line, or budget, amendments to the grant agreement may be prepared and issued. Amendments will continue to be the technique used to modify projects to adjust for changes in scope, budget, or timeliness.

DNRC approved 26 private grants, totaling $68,540.00, during FY 2015 and FY 2016 (Table 3). This is 21 more grants than were approved in Fiscal Years 2013 and 2014. The increase in grant awards amounted to $54,987 more than previous fiscal years.

Table 3 Private Grant Applications Approved FYs 2015 and 2016

Location of Project				Location of Project		
City	**County**	**Amount**		**City**	**County**	**Amount**
Stevensville	Ravalli	$5,000.00		Anaconda	Deer Lodge	$1,500.00
Great Falls	Cascade	$5,000.00		Bozeman	Gallatin	$5,000.00
Three Forks	Gallatin	$1,404.00		Three Forks	Gallatin	$ 825.00
Helena	Lewis and Clark	$2,346.00		Bozeman	Gallatin	$5,000.00
Anaconda	Deer Lodge	$ 650.00		Helena	Lewis and Clark	$1,673.00
Anaconda	Deer Lodge	$1,500.00		Anaconda	Deer Lodge	$ 875.00
Anaconda	Deer Lodge	$ 625.00		Helena	Lewis and Clark	$2,000.00
Norris	Madison	$1,470.00		Helena	Lewis and Clark	$1,283.00
Anaconda	Deer Lodge	$ 625.00		East Helena	Lewis and Clark	$1,948.00
Helena	Lewis and Clark	$1,909.00		Great Falls	Cascade	$5,000.00
Belgrade	Gallatin	$4,409.00		Dillon	Beaverhead	$5,000.00
Helena	Lewis and Clark	$1,800.00		Helena	Lewis and Clark	$4,972.00
Chinook	Blaine	$5,000.00		East Helena	Lewis and Clark	$1,726.00
					Total	**$68,540.00**

Private Loan Application and Project Review Procedures
Loan funding became available in 1981 when the Legislature earmarked $350,000 under the former Renewable Resource Development program to finance loans to private individuals. At the same time, DNRC was given the authority to issue general obligation bonds to finance private loans. Loans to private individuals must promote and advance the beneficial use of water and allow Montana citizens to fully use state waters.

Loan Project Solicitation
DNRC solicits applications for loan funds through staff presentations at various industry functions, press releases, public meetings, and word of mouth. Irrigation equipment dealers, Natural Resource Conservation Service (NRCS) offices, and conservation districts also promote the program.

Loan Application Review
Loan applications may be submitted at any time. RDB staff review the application for completeness and request additional information when needed. Technical aspects of the project are usually completed by NRCS or a private engineer. If the project is not designed by a qualified professional, RDB staff will closely review the project design and specifications. Financial review is completed by RDB staff and includes an evaluation of the applicant's financial strengths, weaknesses, and risk-taking capacity. The review also includes an evaluation of the security offered and a determination of the relative security position. All of these factors are considered in the recommendation to the loan committee.

Loan Funding Recommendations
Projects must be technically and economically feasible, and must pay for themselves over the life of the installation through water savings, increased crop production, or other measurable benefits. Applications that meet feasibility and eligibility criteria are funded if the applicant demonstrates the ability to repay the loan.

The maximum loan amount allowable for private individuals under the Renewable Resource Loan program is $400,000. The 1997 Legislature amended the statute to allow DNRC to accept applications and loan funds to water user associations. These loans are limited to $3 million rather than the $400,000 for private individuals. Loans are for a term not longer than either 30 years or the estimated useful life of the equipment purchased or materials installed. For new irrigation equipment, the allowable term is 15 years; for used irrigation equipment, the term usually is 10 fewer years.

Availability of Loan Funds
DNRC has the authority to issue up to $30 million in general obligation Renewable Resource bonds to finance private loans. To finance loans, DNRC sells bonds on the open market. Since the program's inception, bonds totaling about $49 million have been issued to finance private loans. Presently, $8.2 million in bonds is outstanding.

Interest Rates
The rate of interest on the state's general obligation bond determines the interest rate for private loans. The basic rate for private loans has varied from 3.30% to 9.50% since the inception of the program in the 1980s.

Tax law affects the interest rate. Before 1986, state bonds sold to finance DNRC projects were tax-exempt. The tax law of 1986 prohibited the use of tax-free bonds to finance private ventures. Although bond sales to finance private projects are now subject to federal tax, they remain exempt from Montana State tax.

In addition to interest costs, borrowers also pay a share of bond issuance costs proportionate to the percentage of the bond used to finance their loans. Closing costs include a $150 nonrefundable application fee and title insurance. Higher interest rates and issuance cost charges have made private loans less attractive than those offered when the program first started. Although less attractive, private loans remain competitive with conventional financing because the rate on taxable bonds is usually slightly lower than interest rates obtainable from conventional financing. DNRC loans also provide financing at a fixed interest rate for a period longer than that available to borrowers through their local financial institutions.

In most cases longer terms and competitive fixed interest rates, continue to make these loans attractive to borrowers interested in long-term financing for major equipment or system purchases.

Loan Project Management
Borrowers must acquire all property rights necessary for the project, including rights-of-way and interest in land needed for the construction, operation, and maintenance of the project. Title insurance, a title opinion, or other documents showing the ownership of the land, mortgages, encumbrances, or other liens must be provided to DNRC.

Loans must be secured with real property valued higher than the loan amount requested. According to statute, security equal to at least 125 % of the loan value is required. Loans may be secured with a first or second real estate mortgage, an assignment of accounts receivable, certificates of deposit, or similar securities, or other security as accepted by DNRC. To adequately secure the state's interest, DNRC requires a security equal in value to at least 150% of the loan. For example, a loan application for $100,000 would require real estate security of $150,000. DNRC will accept a second mortgage on property if the state's interest can be adequately secured. DNRC may require an appraisal of real property used for securing a loan. Cost of the appraisal must be paid by the applicant.

After an application is approved for financing, interim financing may be secured by the applicant, with interest costs included in the DNRC loan financing. The Renewable Resource Loan program does not refinance existing loans; only new ventures are eligible.

Loans to private entities are disbursed by warrants drawn by the state auditor or wire transfers authorized by the state treasurer. Before disbursement can occur, all loan documents must be properly signed, security documents must be filed with the county clerk and recorder, the final title insurance policy must be in force, and an invoice must be submitted by the borrower to document the use of funds.

Loan Project Monitoring
Project construction is monitored by NRCS if the project includes a federal cost-share, and by the borrower who has a vested interest in the successful completion of the project. The RDB staff monitors project construction through field visits when possible.

Borrowers must maintain proper and adequate records of accounts that show the complete and correct entries of all receipts, disbursements, and other transactions related to the project. If applicable, borrowers must document the monthly gross revenue derived from project operations. Any segregation and application of the gross revenue resolution also must be shown in such reasonable detail, as may be determined by the borrower in accordance with generally accepted accounting practices and principles.

Loan Project Evaluation
RDB staff conducts ongoing monitoring to evaluate the projects funded under the Renewable Resource Loan program through site visits and review of final reports that document whether the project successfully completed the objectives outlined in the original application and as specified in the loan agreement.

Private Loan Projects Previously Funded
As of July 1, 2016, 520 private loans have been approved under the Renewable Resource Loan Program. DNRC approved nine private loans at an interest rate of 3.30% in FY 2015 and FY 2016 (Table 4.). Loans have been used to finance new and refurbished irrigation systems, riprap, irrigation wells, and refurbished private drinking water systems.

TABLE 4 Private Loan Applications to Individuals Approved FYs 2015 and 2016

City	County	Loan Amount
Fairfield	Teton	$ 99,201.00
Fairfield	Teton	$ 95,224.00
Fairfield	Teton	$157,510.00
Fairfield	Teton	$161,923.00
Dillon	Beaverhead	$343,936.00
Fallon	Dawson	$290,750.00
Ronan	Lake	$ 45,609.00
Polson	Lake	$ 62,300.00
Fairfield	Teton	$120,730.00
	TOTAL	**$1,377,183.00**

CHAPTER V
Irrigation Development Grants

Background
The Irrigation Development Grants (IDG) program was initiated by the 1999 Legislature to foster development of new irrigation projects and production of high-value crops. Program staff provides financial and technical assistance to government and private entities in the development and the sustainment of irrigation infrastructure throughout the state.

Grants from this program range from $300 to $20,000 per project. Project examples include sponsoring grant-writing workshops; purchasing water measurement equipment; funding feasibility studies for irrigation system improvements; developing capital improvement plans; developing new irrigation projects, geographic information system (GIS) installations or topographic surveys; or funding agriculture tours to inform producers about new technology and other educational efforts.

The IDG program is now in its sixteenth year. The program has assisted producers and irrigators throughout the state in development of over 32,500 acres of new irrigation and has played a prominent role in improving the management and conservation of water on over 300,000 acres of sustainable irrigation.

Project Solicitation and Review
Applicants are required to submit an online application through www.fundingmt.org during the funding cycle. The application must describe the proposed project or activity, identify the sources and uses of funding, and discuss the implementation schedule for completion of the project tasks or phases.

Applications are evaluated for completeness and compliance with the intended purposes of the RRGL program. Requests for irrigation development grant funds are reviewed by DNRC staff and funded on a competitively ranked basis. A list of IDG grants awarded during the 2017 biennium is presented in (Table 5).

Table 5 Irrigation Development Grants Awarded During the 2017 Biennium

Project Sponsor	Project	Amount
Greenfields Irrigation District	Measurement Instrument	$14,500
Fort Peck Tribes	First Time Irrigation	$15,000
Deer Lodge Valley Conservation District	Racetrack Ditch Lining	$13,000
Lower Yellowstone Irrigation Project	GIS Database Conversion	$13,000
Clinton Irrigation District	CID Headgate Replacement	$14,500
Glasgow Irrigation District	Glasgow Irrigation District System Assessment	$14,000
Bitterroot Irrigation District	Siphon 2 Study	$6,000
Glasgow School District	Outdoor Classroom	$12,000
Fort Shaw Irrigation District	Installation of Ramp Flume on Main Canal	$14,000
Greenfields Irrigation District	Head Gate Automation, SR-71	$14,000
Helena Valley Irrigation District	HVID Water Conservation and Management Plan	$3,000
DNRC	Cooney Dam Weir Replacement	$10,000
Pondera County Conservation District	Flow Monitoring Equipment Purchase	$4,000
Big Springs Ditch, LLC	Water Conservation	$20,000
Huntley Project Irrigation District	Feasibility Study on Tunnels	$5,000
DNRC	Flow Monitoring Equipment Purchase	$10,740
Sidney Water Users Irrigation District	High Canal, Phase 5	$4,395.94
	Total	**$187,135.94**

CHAPTER VI
Emergency Grants and Loans

In addition to the regular funding available during each RRGL program funding cycle, limited funds are also available for immediate projects necessary to address qualified emergencies. These funds are reserved to help finance emergency projects otherwise eligible for grant or loan funding which, if delayed until legislative approval could be obtained, would result in substantial damages or legal liability for the project sponsor.

Applications for emergency grants and loans are accepted by DNRC from public entities when an emergency occurs. No application fee is required.

Project Solicitation
Emergency grant applications can be submitted at any time. No formal solicitation for applications is conducted. Public entities are informed of the availability of emergency grants during promotional workshops to provide information about all RRGL grant and loan programs.

To request funds, applicants are required to submit a letter containing:

- A description of the problem;
- A statement of when the problem occurred;
- The proposed solution;
- Cost estimates with documentation; and
- Documentation of the community's financial condition and ability to otherwise pay for the proposed repairs.

Application Review
As with funding for other renewable resource projects, emergency funds must be used for projects that benefit or use renewable resources in the state through conservation, management, development, or preservation; for assessing feasibility or planning; for implementing renewable resource projects; or for similar purposes approved by the Legislature. All applications submitted are evaluated for completeness. Sponsors for those applications needing more documentation are notified and asked to submit additional material immediately.

Requests for emergency funds are reviewed by DNRC staff. DNRC's RRGL engineer investigates the problem to determine feasible alternatives. The project is evaluated to determine its eligibility for funding under the RRGL program. Projects must meet the statutory requirements of 85-1-605 (4), MCA, as a minimum to merit further consideration. Engineers and technical experts from other state agencies may be solicited for technical opinions, guidance, and information.

Funding Recommendations
Statute allows DNRC to request up to 10 percent of the grant funds available each biennium to fund emergency projects. DNRC typically requests $100,000 for emergency grants.

Funding recommendations are made on a case-by-case basis within the constraint of available funding. As information is gathered and documented, a staff report with funding recommendations is written and presented to CARDD’s administrator and DNRC's director for an official decision as to whether the project should receive emergency grant or loan funding. The limited total amount of funding available each biennium dictates close management of funding limits for each emergency project.

Project Management
Based on the decision of DNRC's director, the sponsor is notified of the status of its emergency grant or loan request. If successful, the applicant and DNRC enter into a formal agreement, and the project is managed in the same manner as other grant and loan projects funded by the Renewable Resource Grant and Loan program.

Emergency Grant and Loan Applications in Fiscal Years 2016 and 2017
Each emergency grant request submitted during FY 2016 and FY 2017 to date was reviewed by DNRC staff and, based on staff recommendation, was approved or denied for funding by DNRC's director. Total funding for all emergency grants may not exceed the legislative biennial appropriation for emergency projects under the RRGL program. Ten million dollars per biennium is available for emergency loans.

Authorized Emergency Grant Projects
During the 2016-2017 biennium to date, the following emergency grants have been awarded:

Yellowstone Irrigation District **$20,000**
Canal Failure Emergency Repair Project-2015
September 2015
Yellowstone Irrigation District (Rosebud-Treasure Counties) diverts water from the Yellowstone River near Forsyth to a system of canals that irrigates 11,898 acres. The annual assessment is $11 per acre, producing an annual revenue of $130,878. The approximate O&M budget for 2015 is approximately $100,000 plus an additional $30,000 that was included for canal maintenance in the failed section that is the subject of this emergency grant request.

On August 8, 2015, a section of concrete-lined canal failed due to probable seepage and embankment failure. A local contractor from Forsyth was hired to repair the failure; repairs were completed by August 18, 2015. The repair consisted of concrete rubble removal, reshaping and compaction of the canal prism, and lining with 30-mil *Hueskers* liner material at an approximate cost of $160,000.

Philipsburg, Town of **$20,000**
Water System Emergency Repairs-2015
December 2015
In early September, a water main serving 13 residences along Main Street failed, leaving those connections without water until repairs could be made. Due to the extent of deterioration, the town elected to connect the houses to a parallel 8-inch line on the opposite side of the street. This was done at an approximate cost of $80,000, and the work was completed within one week. The work involved the abandonment of the failed water line and directionally drilling each of the service connections under Main Street to the parallel line on the opposite side of the street.

Winifred, Town of **$10,000**
Water System Emergency Repairs-2015
January 2016
In September 2014, an inspection of the on-grade steel water storage reservoir that provides storage for Winifred's municipal water system revealed a collapsed roof. In response, a midwest steel tank design and construction firm was contracted to inspect the structural integrity of the tank and recommend an emergency fix, since the tank is scheduled to be replaced as part of a water system improvements project pending the success of grant applications to both the Montana Department of Commerce Treasure State Endowment Program and RRGL program in 2014. The proposed fix is to externally rig and jack the roof to its normal position and weld external steel support beams to prevent further collapse and potential total failure.

In October 2014, a $10,000 RRGL emergency grant was awarded; however, in an effort to minimize costs, the town elected to perform the repairs, and the RRGL grant was terminated with no disbursements made.

One year later, in the fall of 2015, it became apparent that the town's fix was inadequate, and a tank fabricator, was hired to make substantial and necessary repairs to the tank roof. The cost of the project was $28,000.

Flathead County WSD #101 **$20,000**
Water System Emergency Repairs-2016
August 2016

Flathead County Water District 101 public water system serves the unincorporated area of Columbia Heights near the junction of U.S. Highway 2 and Montana Route 206 west of downtown Columbia Falls. The area includes both residential and commercial development including a Super 8 motel, small restaurants, and convenience stores. The water system for the area was slowly constructed and expanded as requirements dictated beginning in the 1940s. In the 1970s, one of two original wells was abandoned, and a new well was drilled. The system was poorly operated under private ownership until early 2016 when Flathead County Water and Sewer District 101 was formed and acquired ownership of the system. The system serves 68 single-family residences and 7 businesses. The system is in need of major improvements, and the district has hired a local engineer to evaluate the system. The engineer has identified approximately $50,000 worth of critical work necessary to keep the system functional.

Brady, Town of **$ 8,000**
Water System Emergency Repairs-2016
August 2016

On June 21, the district's bulk water keying system was damaged by a lightning strike. Over the July 4th holiday weekend, a leak in the newly installed distribution system developed. The total cost of repairs to Brady's distribution system has exceeded $20,000, and the district has expended its reserves. The cost of these recent repairs approximates $10,000.

CHAPTER VII
Renewable Resource Project Planning Grants

Application Administration and Project Review Procedures
The 2015 Legislature authorized $700,000 for Renewable Resource Project Planning Grants. The intent of the program is to fund planning efforts for projects that will measurably conserve, develop, manage, or preserve Montana's renewable resources. Planning grant funds must be used for contracted consulting or engineering services.

DNRC accepts applications for planning grants from public entities in cycles. Staff then review and rank the grants and no application fee is required. No match funding is required for planning grants.

Project Solicitation
Public entities are informed of the availability of planning grants through brochures, website notices, and during promotional workshops providing information about all RRGL funding opportunities.

To request funds, applicants are required to submit an application on the website www.funding.mt.org that describes the project, identifies the sources and uses of funding, and discusses the implementation schedule for the study.

In this biennium, DNRC has awarded project planning grants to public entities for 68 planning grants. Of the initial $700,000 in planning grant money, $50,000 remains as of July 1, 2016.

Application Review
As with funding for other renewable resource projects, planning grant funds must be used to plan projects that enhance renewable resources through conservation, development, management, or preservation; for assessing feasibility or technical planning; or for similar purposes approved by the Legislature. All applications submitted are evaluated for completeness and compliance with the intended purposes of the program and are ranked accordingly.

Requests for planning grant funds are reviewed by DNRC staff. The scope of the project being considered is evaluated to determine its eligibility for funding under the Renewable Resource Grant and Loan program. The proposed budget is analyzed to assure that the proposed costs are feasible.

Project Management
DNRC staff works closely with project sponsors and consultants during the planning stages of projects. For public facility studies, the applicant must contract with a registered professional engineer to prepare a Preliminary Engineering Report (PER) that satisfies the requirements of the Uniform Application Supplement for Montana Public Facility Projects. This application is accepted by state agencies funding water, wastewater, and solid waste projects in Montana, and also by the USDA Rural Development program. For all projects, draft submittals of planning documents prepared under this program are submitted to DNRC or other agency professionals for review before interim payments; a final report is required for review and approval before final payment.

In addition to infrastructure planning grants, the RRGL program also funded watershed planning grants for watershed planning that would lead to re-establishing structure and function of a watershed. The grants were limited to a maximum of $50,000. Three watershed planning grants have been contracted during the 2017 biennium to date for a total of $100,000. Planning grants awarded as of July 1, 2016 are listed in (Table 6).

Table 6 Project Planning Grants Approved During the 2017 Biennium

Project Types: W-Drinking Water WW-Wastewater IR-Irrigation WM-Water Management

Applicant	Project Type	Amount
Round 1 Application Cycle		
Absarokee WSD- PER	W	$ 5,000
Big Timber- Technical Report	W	$ 10,000
Circle- PER	WW	$ 10,000
Fort Smith	WW	$ 10,000
Froid- PER	WW	$ 10,000
Granite County-PER	Dam	$ 10,000
Helena Valley ID	IR	$ 10,000
Huntley Project	IR	$ 10,000
Missoula City- Urban CF Restoration	WM	$ 50,000
Missoula County – Bonner	WW	$ 10,000
Missoula County- CF Flood Plain	WM	$ 0
Pondera CD- PER	IR	$ 10,000
Red Lodge	W	$ 10,000
Scobey	W	$ 10,000
Shelby	W	$ 10,000
Twin Bridges	WM	$ 5,000
Ward ID	IR	$ 10,000
Worden Ballantine	WW	$ 10,000
Subtotal		**$200,000**
Round 2 Application Cycle		
Absarokee WSD- PER	W	$ 5,000
Alberton	W	$ 10,000
Cascade	WW	$ 10,000
Clinton ID	IR	$ 5,000
Custer County	Floodplain	$ 10,000
Denton	W	$ 5,000
Flathead CD	Watershed	$ 25,000
Geraldine	WW	$ 10,000
Glen Lake ID	IR	$ 5,000
Helena Valley ID	IR	$ 10,000
Hill County	WW	$ 10,000
Hysham ID	IR	$ 5,000
Beaverhead Jackson WSD	W	$ 5,000
Lockwood ID	ID	$ 5,000
Lower Musselshell	Watershed	$ 25,000
Lower Yellowstone	IR	$ 5,000
Malta ID	IR	$ 5,000
Medicine Lake	WW	$ 10,000
Philipsburg	WM	$ 0
Sheridan	W	$ 5,000
Sidney ID	IR	$ 10,000
Stillwater CD	IR	$ 10,000
Toston ID	IR	$ 5,000
Virginia City	W&WW	$ 10,000
Bozeman	W	$ 20,000
Subtotal		**$225,000**

Table 6 Continued Project Planning Grants Approved During the 2017 Biennium

Applicant	Project Type	Amount
Round 3 Application Cycle		
Baker, City of – PER	W	$ 10,000
Bigfork County WSD-PER Update	W	$ 5,000
Broadwater CD- PER update	IR	$ 10,000
Brady WSD	W	$ 10,000
Dutton, Town of- PER Update	W	$ 5,000
Ennis, Town of- Admin	W	$ 5,000
Fort Peck Tribes	IR	$ 5,000
Fort Shaw ID-Admin	IR	$ 5,000
Greenfields ID- Study	IR	$ 10,000
Harlowton, City of -PER Update	W	$ 5,000
Heart Butte School-PER	W	$ 10,000
Hot Springs, Town of-PER update	W	$ 5,000
Lewis and Clark County-WS	Floodplain	$ 10,000
Lincoln County- WS	Watershed	$ 50,000
Madison County-PER	WM	$ 10,000
Manhattan, Town of-PER Update	WW	$ 5,000
Missoula County CD- PER	IR	$ 0
Petroleum County CD-Study	WM	$ 10,000
RAE Subdivision WSD- test well	WM	$ 5,000
Sand Coulee Water District- study	WM	$ 10,000
Sanders County SD at Paradise	WW	$ 5,000
South Wind WSD- PER Update	W & WW	$ 10,000
Tin Cup County WSD- PER	IR	$ 10,000
Whitefish County WSD- PER	WW	$ 10,000
Woods Bay WSD-PER	W	$ 5,000
Subtotal		**$225,000**
Total		**$650,000**

Note:

CD = Conservation District
IR = Irrigation
PER = preliminary engineering report
SD = Sewer District
W = drinking water
WW = wastewater
WSD = Water and Sewer District
WM – water management

CHAPTER VIII
Renewable Resource Watershed Management Grants

Application Administration and Project Review Procedures
The 2015 Legislature authorized $300,000 for the Renewable Resource Watershed Management Grants (WMG) program. The intent of the program is to fund activities which conserve, develop, manage, and preserve Montana's renewable resources, and watershed-related planning and management activities. Watershed management grants serve as a component of the RRGL program by supporting partnerships among businesses, local leadership, the state and other stakeholders working on strengthening local watersheds.

DNRC accepts applications for watershed management grants from public entities, watershed groups and conservation districts, and private applicants. During the 2017 biennium grants are available up to $20,000 per biennium for a watershed management activity. No application fee is required.

Project Solicitation
DNRC informs conservation districts (CDs) and watershed groups about WMG grant funding through promotional workshops and during CD area meetings, conferences, and regular watershed group meetings.

Applicants are required to submit an application online at www.fundingmt.org that describes the project, identifies sources and uses of funding, and discusses the activity that developed the organization's management strategy to prioritize and implement projects.

During the 2017 biennium, DNRC awarded 27 watershed management grants. In total, $250,000 in WMG grant money was contracted between July 1, 2015 and October 2016.

Application Review
WMG funds are used for activities that enhance renewable resources through conservation, development, management, or preservation; for development of staff or board leadership, financial management, fundraising, assessments of resource issues, development of self-sustaining education or outreach, use of technology, or for similar purposes approved by the Legislature. DNRC evaluated all applications for completeness and compliance with program purposes.

DNRC staff reviewed requests for WMG funds. The scope of the proposed activity was evaluated to determine funding eligibility under the RRGL program. The proposed budget was analyzed to assure that proposed costs were feasible.

Project Management
Successful applicants and the DNRC enter into a formal contract for the proposed activities. The projects are managed in the same manner as other grant and loan projects funded by the RRGL program.

Awarded Projects
Watershed management grants awarded in the 2017 biennium are listed in table 7. The funded WMG applications are listed in Table 7.

Table 7 Watershed Management Grants Approved During the 2017 Biennium

Applicant	Activity Title	Contracted Amount
Beaverhead CD	Beaverhead Watershed Restoration Plan Update and Drought Management Plan Implementation	$12,500.00
Beaverhead CD	Big Sky Watershed Corps Member	$ 5,000.00
Big Hole Watershed Committee	Big Hole Watershed Committee Drought Management Plan Revision & Expansion 2016	$10,000.00
Big Sky WSD	Building Drought Resiliency in the Upper Gallatin Watershed Through Collaborative Partnerships	$10,000.00
Bitter Root Water Forum	Bitter Root Water Forum: Collaboration Yielding Future Restoration Impact	$10,000.00
Bitter Root Water Forum	Collaboration and Conservation: Stepping Stones for restoration action	$ 5,000.00
Cascade CD	Sun River Watershed Group New Direction	$10,000.00
Cascade CD	Sun River Watershed Readiness	$ 7,500.00
Deer Lodge Valley CD	Upper Clark Fork River Basin Restoration Plan	$10,000.00
Deer Lodge Valley CD	Upper Clark Fork River Drought Resiliency Project	$ 7,500.00
Flathead CD	Watershed Restoration Plan	$ 5,000.00
Flathead Lakers	Flathead Lake Critical Lands and Waters Restoration	$10,000.00
Gallatin Local WQD	Development of a Surface Water Monitoring Network within the Gallatin Local Water Quality District	$ 5,000.00
Granite Headwaters Watershed Council	Strategic Planning and Partnership Development	$12,500.00
Greater Gallatin Watershed Council	Water Restoration Plan Project Development	$ 5,000.00
Greater Gallatin Watershed Council	Greater Gallatin Watershed Council Project Development and Capacity	$ 7,500.00
Jefferson River Watershed Council	Jefferson River Watershed Council Drought Resiliency Project	$ 5,000.00
Lake County CD	Maximizing Watershed Health Through Improving Soil, Forage, and Landscape Management in Lake County	$ 5,000.00
Lewis and Clark County Water Quality Protection District	Implementation of BMP'S in the Lake Helena Watershed	$ 5,000.00
Lolo Watershed Group	Lolo Watershed Capacity Building Through Collaboration	$10,000.00
Madison CD	Madison Watershed Restoration Plan Development	$15,000.00
Montana Aquatic Resources Services, Inc.	Program and Project Support for Yellowstone River Channel Migration Easements	$10,000.00
North Powell CD	Integrated Water and Land Stewardship Planning	$10,000.00
Petroleum County CD	Musselshell Watershed Plan Implementation Project	$20,000.00
Phillips CD	Milk River Watershed Alliance Coordinator	$15,000.00
Ruby Valley CD	Ruby Watershed Stewardship	$15,000.00
Teton CD	Teton River Watershed Group New Direction	$ 7,500.00
	Total	**$250,000.00**

CHAPTER IX
Septic Loan Grants

The Septic Loan Grant program was established by the 2015 Legislature to help counties in Montana to finance a low-interest loan program for septic system upgrades. The 64th Legislature authorized $100,000 in grants for the 2017 biennium. DNRC will offer grants up to $50,000 to counties that wish to start a revolving loan fund for the purpose of protecting surface and groundwater resources. Counties may determine eligibility, the loan interest rate, and other repayment requirements, but must match the grant in an amount equal to or greater than the grant amount to establish the program. This program has been put on hold until 2017 pending certainty that actual revenue to the Natural Resources Projects Account will be adequate to cover costs of authorized projects.

CHAPTER X
Summary of Grants to Public Entities, October 1, 2014–September 2016

Most RRGL project grants are completed within three years of legislative authorization. This section updates the status of all project grants that were completed or active during the period of October 2014 through September 2016. Current project status is indicated by one of four categories:

Completed, Active, Authorized but Not Yet Executed, and Terminated.

Grant Projects Completed Since October 1, 2014

Alberton, Town of
Wastewater System Improvements
RRG-14-1589
The 2013 Legislature authorized a $100,000 grant for wastewater system upgrades. The project constructed an ultraviolet (UV) disinfection facility and installed a backup generator. The work was completed at the end of 2014. All disbursements have been made.

Beaverhead County Conservation District
Poindexter Slough Fishery Enhancement
RRG-12-1503
The 2011 Legislature authorized a $100,000 grant to improve fish habitat and water quality, install a new control structure at the headgate, and create a grazing management plan. The project was completed in June 2015 and $100,000 has been disbursed.

Beaverhead County Conservation District
Swamp Creek Siphon
RRG-14-1607
The 2013 Legislature authorized a $100,000 grant for installation of a new irrigation siphon, diversion, and fish ladder on Swamp Creek. The project was completed in May 2015 and $100,000 has been disbursed.

Big Sandy, Town of
Wastewater System Improvements
RRG-10-1463
The 2009 Legislature authorized a $100,000 grant for the construction of a new wastewater treatment lagoon facility. The project was completed in April 2015 and $100,000 has been disbursed.

Bitter Root Irrigation District
Siphon 1 Improvements, Phase 4
RRG-14-1586
The 2013 Legislature authorized a $100,000 grant for Siphon 1, Phase 4 improvements. The project was completed in April 2015 and $100,000 has been disbursed.

Black Eagle-Cascade County Water and Sewer District
Wastewater System Improvements
RRG-15-1634
The 2013 Legislature authorized a $99,407 grant for wastewater system improvements. This project included lining 8-inch and 12-inch sewer mains. The project was completed in December 2014 and $99,407 has been disbursed.

Boulder, City of
Wastewater System Improvements
RRG-14-1595
The 2013 Legislature authorized a $100,000 grant for wastewater system improvements. This project included installing an activated sludge treatment plant to replace the lagoon treatment system, adding UV disinfection for pathogen removal, handling sludge with beneficial reuse for land application, and replacing 1,600-linear feet of collection main. The project was completed in March 2016 and $100,000 has been disbursed.

Broadwater Conservation District
Big Springs Ditch Water Conservation and Spawning Bed
RRG-15-1645
The 2013 Legislature authorized a $100,000 grant to prevent seepage by completing a pipeline. The project was completed in June 2016 and $100,000 has been disbursed.

Buffalo Rapids Irrigation District 1
Lateral 20.6 Conversion
RRG-14-1580
The 2013 Legislature authorized a $100,000 grant for the conversion of Lateral 20.6 from open ditch to pipeline for the Buffalo Rapids Irrigation District 1. The project included the design and construction of a new distribution route and installation of 18,000 linear feet of pipeline. The project was completed in the summer of 2015 and the entire $100,000 was disbursed.

Buffalo Rapids Irrigation District 2
Buffalo Rapids Terry Pump Station Discharge Line
RRG-14-1628
The 2013 Legislature authorized a $100,000 grant to replace 270 feet of discharge lines with the goal of eliminating leakage from the pipes for the Buffalo Rapids Irrigation District 2. The project was completed in December 2015. DNRC has disbursed all of the authorized grant funds.

Cascade, Town of
Water System Improvements
RRG-14-1555
The 2013 Legislature authorized a $100,000 grant to construct a new drinking water distribution system for Cascade. The project was completed in the fall of 2015 and the entire $100,000 was disbursed.

Clinton Irrigation District
Clark Fork Diversion Rehabilitation
RRG-14-1598
The 2013 Legislature authorized a $100,000 grant for replacement of irrigation diversion and construction of a new intake channel. The project was completed in January 2015 and $100,000 has been disbursed.

Confederated Salish and Kootenai Tribes
Jocko Upper S Canal
RRG-13-1549
The 2011 Legislature authorized a $100,000 grant to line 4,000 feet of canal. The project was completed at the end of 2015 and the entire $100,000 was disbursed.

Crow Tribe of Indians
Crow Agency Wastewater System Improvements
RRG-10-1447
The 2009 Legislature authorized a $100,000 grant for Phase 3 wastewater system improvements at Crow Agency. The project consisted of television inspection of lines and replacement of laterals. The project was completed in March 2016 and $100,000 has been disbursed.

Daly Ditches Irrigation District
Preservation and Conservation of Resources; Canal Lining
RRG-14-1581
The 2013 Legislature authorized a $100,000 grant for canal rehabilitation and lining for water management. The project was completed in January 2016; $94,732.99 has been disbursed and $5,267.01 reverted.

Deer Lodge Valley Conservation District
Water Efficiency and Energy Conservation
RRG-14-1621
The 2013 Legislature authorized a $100,000 grant to provide a reliable and efficient irrigation water delivery system. The project was completed in February 2016 and $100,000 has been disbursed.

Deer Lodge, City of
Wastewater System Improvements
RRG-13-1541
The 2011 Legislature authorized a $100,000 grant for wastewater system improvements to replace the main. The project was completed in January 2016 and $100,000 has been disbursed.

Dutton, Town of
Water System Improvements
RRG-14-1570
The 2013 Legislature authorized a $100,000 grant to replace the transmission main, recoat the storage tank, install new water valves, and upgrade the telemetry system. The project was completed in September 2015 and $100,000 has been disbursed.

Em-Kayan Water and Sewer District
Water System Improvements, Phase 2
RRG-14-1616
The 2013 Legislature authorized a $100,000 grant for distribution system improvements. The project was completed in August 2015 and $100,000 has been disbursed.

Flathead County
Big Fork Stormwater Project, Phase 4
RRG-15-1642
The 2013 Legislature authorized a $100,000 grant for stormwater conveyance pipes, catch basins, and treatment facilities for improved surface water quality. The project was completed in February 2016 and $100,000 has been disbursed.

Forsyth, City of
Wastewater System Improvements
RRG-14-1564
The 2013 Legislature authorized a $100,000 grant for sanitary sewer improvements to replace 1,600 feet of sewer main, install new pipe, and install new manholes. The project was completed in June 2015 and $100,000 has been disbursed.

Fort Peck Tribes
Lateral L-2M Rehabilitation, Phase 2
RRG-14-1597
The 2013 Legislature authorized a $100,000 grant for the rehabilitation of Lateral L-2M within the system's Frazier-Wolf Point Unit. The project included engineering design, canal shaping and earthwork, removal and replacement of five headgates, and linear installation of 2,640 feet of Lateral L-2M. The project was completed in the fall of 2014 and the entire $100,000 was disbursed.

Frenchtown Irrigation District
Main Canal Lining
RRG-14-1615
The 2013 Legislature authorized a $99,978 grant to manage seepage by installing a canal liner. The project was completed in July 2015. $97,972.81 has been disbursed and $2,005.19 reverted.

Gallatin County
Parade Rest Riparian Restoration/Riders Court PER
RRG-14-1602
The 2013 Legislature authorized a $75,000 grant for irrigation improvements. Funding components were not achieved and the applicant could not move forward with the project as proposed. The project scope was approved for a preliminary engineering report (PER) of the wastewater system at Riders Court Mobile Park adjacent to Manhattan. The project was completed in May 2015 and $65,179.68 has been disbursed.

Gallatin County Conservation District
Darlington Creek Enhancement Project at Cobblestone Access
RRG-14-1624
The 2013 Legislature authorized a $100,000 grant to enhance channel conditions to improve aquatic habitat and water quality. The project is complete and $99,000.01 has been disbursed and $999.99 reverted.

Glasgow Irrigation District
Vandalia Diversion Dam Rehabilitation, Phase 3
RRG-08-1303
The 2007 Legislature authorized a $100,000 grant for Phase 3 of the rehabilitation of Vandalia Dam. The project includes repairing gates, replacing seals, repairing corroded concrete on the surface of the dam, and installing a monitoring system. The project was completed in August 2016 and $100,000 has been disbursed.

Glen Lake Irrigation District
Rolling Hills Section of the Main Canal Rehabilitation
RRG-14-1587
The 2013 Legislature authorized a $100,000 grant for the design and construction of a rehabilitation project on the Rolling Hills section of the Main Canal to replace a headgate. The project included rehabilitation of the main canal, installation of 1,600 linear feet of liner, and design and construction of the project. The DNRC has disbursed the entire amount and the project is complete.

Glendive, City of
Feasibility Study
RRG-12-1520
The 2011 Legislature authorized a $100,000 grant for a U.S. Army Corps of Engineers feasibility study to recommend the most viable alternatives to eliminate flood risks, threats to loss of life, and associated problems with the floodplain in Glendive. The project was completed in January 2015 and $100,000 has been disbursed.

Glendive, City of
Wastewater System Improvements
RRG-14-1557
The 2013 Legislature authorized a $100,000 grant for the design and construction of a wastewater treatment plant. The project was completed in June 2016 and $100,000 has been disbursed.

Hamilton, City of
Wastewater System Improvements
RRG-15-1636
The 2013 Legislature authorized a $100,000 grant for the design and construction of wastewater system improvements. The project was completed in June 2016 and $100,000 has been disbursed.

Hamilton City of
Water System Improvements
RRG-15-1637
The 2013 Legislature authorized a $100,000 grant for the design and construction of water system improvements. The project was completed in April 2016 and $100,000 has been disbursed.

Harlowton, City of
Wastewater System Improvements
RRG-14-1591
The 2013 Legislature authorized a $100,000 grant for the design and construction of wastewater collection system improvements. The project was completed in November 2014 and $100,000 has been disbursed.

Helena Valley Irrigation District
Pump Automation
RRG-14-1593
The 2013 Legislature authorized a $100,000 grant to replace control and monitoring instrumentation and install a flow data tracking (SCADA) system for the district. The project was completed in May 2015 $100,000 has been disbursed.

Jefferson County
Jefferson Slough Hydrology Assessment and Sedimentology Stations
RRG-14-1575 ($176,850)
This grant funded the collection of data necessary for reclamation of the Jefferson Slough to eradicate the growth of EWM. The project was completed in March 2015 and $176,850 has been disbursed.

Joliet, Town of
Wastewater System Improvements
RRG-14-1627
The 2013 Legislature authorized a $100,000 grant for the design and construction of wastewater collection and treatment system improvements. The project was completed in February 2016 and $100,000 has been disbursed.

Libby, City of
Flower Creek Dam Replacement
RRG-14-1550
The 2013 Legislature authorized a $100,000 grant, along with an $800,000 RRGL loan, for the replacement of Flower Creek Dam, an aging high-hazard concrete arch dam that impounds water for Libby's municipal water system. The project is complete and the $100,000 grant has been disbursed.

Lockwood Irrigation District
Intake Canal Headgate Replacement
RRG-14-1592
The 2013 Legislature authorized a $100,000 grant for the replacement of a headgate structure with sluice gates. The project was completed in March 2016 and $100,000 has been disbursed.

Malta Irrigation District
Siphon Replacement
RRG-12-1492
The 2011 Legislature authorized a $100,000 grant to replace two siphons to increase operations efficiency. The project was completed in July 2015 and $99,977.02 has been disbursed and $22.98 reverted.

Manhattan, Town of
Water System Improvements
RRG-14-1612
The 2013 Legislature authorized a $100,000 grant for water system improvements. The project included installation of a new storage tank, transmission line, booster station, and telemetry system. The project was completed in July 2016 and $100,000 has been disbursed.

Montana Department of Natural Resources and Conservation–Flathead Basin Commission
Aquatic Invasive Species Prevention
RRG-14-1573
The 2013 Legislature authorized $100,000 for data collection, outreach, and monitoring of aquatic invasive species in the watershed. The project is complete and $89,448.98 has been disbursed and $10,551.02 reverted.

Montana Department of Natural Resources and Conservation–Water Resources Division
Martinsdale Supply Canal Headworks Rehabilitation
RRG-12-1508
The 2011 Legislature authorized a $98,688 grant for headgate and trash-rack rehabilitation. The project was completed in May 2015 and $98,683.64 has been disbursed and $4.36 reverted.

Montana Department of Natural Resources and Conservation–Water Resources Division
Clark Fork River Basin Task Force
RRG-13-1547
The 2011 Legislature authorized a $63,000 grant to revise the Clark Fork Basin Watershed Management Plan. The project was completed in July 2015 and $60,293 has been disbursed and $2,707 reverted.

Montana Department of Natural Resources and Conservation–Water Resources Division
East Fork Rock Creek Diversion and Fish Screen
RRG-13-1548
The 2011 Legislature authorized a $100,000 grant for installation of a fish screen on the irrigation diversion. The project was completed in April 2016 and $81,145.04 has been disbursed and $18,854.96 reverted.

Montana Department of Natural Resources and Conservation–Water Resources Division
2012 Infill Drilling and Piezometer Installation
RRG-13-1629
The 2013 Legislature authorized a $95,580 grant to install piezometers at high-hazard dams for seepage monitoring. The project was completed in March 2016 and $95,580 has been disbursed.

Montana Department of Natural Resources and Conservation–Water Resources Division
State Water Plan
RRG-14-1558
The 2013 Legislature authorized a $200,000 grant to develop the Montana State Water Plan. The project was completed in early 2015 and $190,762.88 has been disbursed and $9,237.12 reverted.

Montana Department of Natural Resources and Conservation–Water Resources Division
Cooney Dam Outlet Canal Weir Replacement and Auto Instrumentation
RRG-14-1562
The 2013 Legislature authorized a $100,000 grant for replacement of a weir outlet at Cooney Dam. The project was completed in January 2016 and $100,000 has been disbursed.

Montana Department of Natural Resources and Conservation–Water Resources Division
East Fork Rock Creek Siphon Repairs
RRG-14-1594
The 2013 Legislature authorized a $99,939 grant for seepage loss repairs and canal lining. The siphon experienced lifting from its buried alignment and was approved from DNRC as a Declaration of Exigency and used this grant to make repairs to the siphon. The project was completed in June 2015 and $99,939 has been disbursed.

Montana Department of Natural Resources and Conservation–Water Resources Division
Deadman's Basin Supply Canal Replacement Headgate
RRG-14-1622
The 2013 Legislature authorized a $100,000 grant for an irrigation headgate structure. The project was completed in January 2016 and $100,000 has been disbursed.

North Havre County Water District
Water System Improvements
RRG-13-1538
The 2011 Legislature authorized a $100,000 grant for water system improvements including updating the pumping system and adding new pumps, installation of a new tank, installation of transmission line, and service line meters. The project was completed in March 2015 and $100,000 has been disbursed.

Park Conservation District
Park Branch Canal Water Efficiency
RRG-12-1490
The 2011 Legislature authorized a $100,000 grant for canal improvements to address considerable seepage losses and bank failures. The project was completed in July 2015 and $98,445.96 has been disbursed and $1,554.04 reverted.

Plevna, Town of
Water System Improvements
RRG-14-1620
The 2013 Legislature authorized a $100,000 grant for the design and construction of water storage and distribution system improvements including a new storage reservoir. The project was completed in December 2014 and $100,000 has been disbursed.

Polson, City of
Water System Improvements
RRG-13-1543
The 2013 Legislature authorized a $100,000 grant for the design and construction of water distribution system improvements in downtown. The project was completed in June 2015 and $100,000 has been disbursed.

Ravalli County
Bitterroot Valley Septic Systems Impact Model, Phase 2
RRG-13-1532
The 2011 Legislature authorized a $73,745 grant to establish monitoring wells to study nitrate concentrations in shallow groundwater. This will enable better assessment of impacts to water quality resulting from new septic systems as the valley is developed. The project was completed in the fall of 2014 and $61,855 was disbursed and $11,890 reverted.

Roundup, City of
Musselshell Watershed Sustainable Irrigation Management Program
RRG-13-1540
The 2011 Legislature authorized a $60,000 grant to build a basin-wide water management project. Tasks included setting up a GIS database, purchasing flow-measuring devices, and developing basin-wide decision-making criteria for prioritizing activities that contribute to enhanced stream and riparian function. The project was completed at the end of 2015 and the entire $60,000 was disbursed.

Roundup, City of
Water System Improvements
RRG-14-1613
The 2009 Legislature authorized a $100,000 grant to replace all cast iron mains, install water meters and upsize the transmission main. The project is complete and $100,000 has been disbursed.

Sun Prairie Village County Water and Sewer District
Water System Improvements
RRG-12-1517
The 2011 Legislature authorized a $100,000 grant for water system improvements including: four groundwater wells, a water treatment plant, a transmission line, a backup generator, distribution system pumps, and radio-read water meters. The project was completed in August 2016 and $99,999.74 has been disbursed and $0.26 reverted.

Sunburst, Town of
Water System Improvements
RRG-08-1357
The 2013 Legislature authorized a $99,236 grant to identify the source of corrosive water that destroyed the casing on one of the town's supply wells and to develop two existing wells that were not in use. The project was completed in January 2015 and $99,236 has been disbursed.

Sweet Grass Conservation District
Big Timber Creek Channel Stabilization
RRG-14-1566
The 2013 Legislature authorized a $100,000 grant to replace headgate, install bioengineered treatment along the eroding hayfield bank, and remove some riprap from the bank. The project was completed in the fall of 2014 and the entire $100,000 was disbursed.

Ten Mile/Pleasant Valley Sewer District
Wastewater System Improvements Project, Phase 2
RRG-14-1556
The 2013 Legislature authorized a $250,000 grant for the design and construction of a wastewater lift station and force main. The project was completed in January 2015 and $250,000 has been disbursed.

Valier, Town of
Wastewater System Improvements
RRG-14-1567
The 2013 Legislature authorized a $100,000 grant to upgrade the wastewater system. The project included replacement of the aeration system and 5,000 feet of collection piping. The project was completed in the summer of 2015 and the entire $100,000 was disbursed.

Ward Irrigation District
Lost Horse Creek/Ward Canal Improvements
RRG-14-1572
The 2013 Legislature authorized a $100,000 grant to improve facilities of the irrigation district to conserve water, including siphon construction. The project was completed in May 2015 and $100,000 has been disbursed.

Whitehall, Town of
Wastewater System Improvements
RRG-08-1366
The 2007 Legislature authorized a $100,000 grant to design and construct a facultative lagoon system, storage cell, and spray irrigation system. The project was completed in December of 2015. $86,530 was disbursed, and $13,470 reverted.

Wolf Creek, Town of
Wastewater System Improvements
RRG-10-1417
The 2009 Legislature authorized a $100,000 grant for wastewater system improvements including: construction of a gravity sewer collection system, a lift station, and a treatment plant. The project was completed in June 2015 and $100,000 has been disbursed.

Active Grant Projects

Amsterdam-Churchill County Sewer District No. 307
Wastewater System Improvements
RRG-13-1542
The 2011 Legislature authorized a $100,000 grant for wastewater system improvements. The project will hook into the Manhattan wastewater treatment plant. The project is expected to be complete by October 2016 and $90,000 has been disbursed.

Belt, Town of
Wastewater System Improvements
RRG-14-1631
The 2013 Legislature authorized a $100,000 grant for wastewater system improvements. This project includes construction of a land application irrigation system for discharge, replacement of lift station No. 1, and rehabilitation of lift stations No. 2 and No. 3. The project sponsor has secured USDA Rural Development funding and $46,118 has been disbursed on this project. Project completion is scheduled for late 2017.

Big Horn County Conservation District
Evaluating the Influence of Irrigation on Groundwater Quality and Quantity
RRG-14-1604
The 2013 Legislature authorized a $100,000 grant for data analysis and collection, model construction, and calibration, and production of management tools for irrigators. The project is expected to be complete by the end of 2016 and $39,441.26 has been disbursed.

Bozeman, City of
Bozeman Creek at Bogert Park Enhancement
RRG-14-1608
The 2013 Legislature authorized a $100,000 grant to enhance aquatic habitat by improving sediment transport in an urban setting. The project proposes to realign and reconfigure the channel, stabilize banks, and develop a floodplain. The project is expected to be complete by June 2017 and $90,000 has been disbursed.

Carbon County Conservation District
Groundwater Surface Interaction in Rock Creek Watershed, Phase 2
RRG-14-1603
The 2013 Legislature authorized a $100,000 grant to collect baseline data for future management and land-use changes. Project activities include monitoring wells, springs, and surface water; collection of water quality samples; installation of test wells; aquifer tests; and the creation of usable reports for residents. The project is expected to be complete by December 2016 and $67,887.81 has been expended.

Chinook, City of
Water System Improvements
RRG-14-1610
The 2013 Legislature authorized a $100,000 grant for the construction of water treatment plant improvements. The project is substantially complete and is currently being closed out; $88,573.68 has been disbursed.

Craig County Water and Sewer District
Wastewater System Improvements
RRG-14-1584
The 2013 Legislature authorized a $100,000 grant for construction of a new wastewater system. This project includes construction of 6,925 feet of sewer main, 23 manholes, 5,500 feet of sewer service lines, electrical siting, force main and lift station, influent pumps, process piping, equalization basin, treatment building, emergency power, and a percolating wetland. This project is expected to be completed by March 2018 and $47,272.18 has been disbursed.

Crow Tribe of Indians
Crow Agency Water System Improvements
RRG-12-1522
The 2011 Legislature authorized a $100,000 grant for drinking water treatment system improvements at Crow Agency. RRGL funds have been identified for the construction of distribution system upgrades. Work is 90% complete and $90,000 has been disbursed.

Cut Bank, City of
Wastewater System Improvements
RRG-17-1661
Cut Bank was awarded a $125,000 grant in 2015 to construct a Biological Nutrient Removal treatment system on the site of the city's existing treatment facility. Project design is complete and they are preparing bid documents. Project completion is scheduled for late 2018. No funds have been disbursed.

Dawson County
Wastewater System Improvements
RRG-14-1633
The 2011 Legislature authorized a $100,000 grant for the construction of wastewater system improvements. The proposed project consists of the abandonment of the treatment facility and subsequent connection to the new Glendive treatment plant. The project will bid in the fall of 2016 pending easement issues and $95,000 has been disbursed for engineering.

Eureka, Town of
Water System Improvements
RRG-14-1619
The 2013 Legislature authorized a $100,000 grant in 2013 for the design and construction of a water filtration plant. Pilot testing is complete and the project will bid pending DEQ final approval of the plans and specifications; $94,685 has been disbursed.

Fairfield, Town of
Water System Improvements
RRG-15-1640
The 2013 Legislature authorized a $100,000 grant for the repair and upgrade to the Fairfield municipal wastewater system. The project includes installation of lagoon liners, fencing, piping, and construction of a building for UV and irrigation equipment. So far, $33,922 has been dispersed and the project is scheduled for completion at the end of 2017.

Fallon County
Wastewater System Improvements
RRG-16-1654
The 2015 Legislature authorized a $125,000 grant for the repair and upgrade to the Fallon County Water and Sewer District water system. The project includes installation of gravity sewers and manholes and will also extend the gravity collection system to the Baker collection system. Project completion is scheduled for late 2017. No funds have been disbursed.

Fergus County Conservation District
Big Spring Creek Stream Restoration at the Machler Conservation Easement
RRG-13-1534
The 2011 Legislature authorized a $100,000 grant to Fergus County to restore one mile of stream, add meander, and create a floodplain and a new trail connecting existing recreation trails. This is Phase 1 of a multi-phased project. A contract was executed at the end of 2013 and contract completion is scheduled for December of 2016. The project was delayed because more funding was needed due to increased cost estimates. No funds have been disbursed on this contract.

Fort Belknap Indian Community
Main Canal A Underdrain Rehabilitation
RRG-16-1635
The 2013 Legislature authorized a $100,000 grant for improvements to the Main Canal A Underdrain along the D-3 Wasteway. The project proposes to design and construct a concrete underdrain. A contract was executed at the end of 2014 and contract completion is scheduled for December of 2016. So far, $22,252 has been disbursed on this contract.

Fort Benton, City of
Wasteway System Improvements
RRG-16-1628
The 2013 Legislature authorized a $100,000 grant for wastewater improvements. The project has completed the final planning phase and the final completion date is December 2016. No grant funds have been disbursed.

Gallatin Gateway County Water and Sewer District
Wastewater System Improvements
RRG-12-1497
The 2011 Legislature authorized a $100,000 grant for a wastewater system for Gallatin Gateway. The project includes a gravity collection system, lift station, and treatment plant. The project was delayed because of a lawsuit against the district. The district has elected to connect with the Four Corners treatment system and the project is currently being designed; $90,000 has been disbursed.

Garfield County Conservation District
Charles M. Russell National Wildlife Refuge Range Monitoring Pilot
RRG-14-1583
The 2013 Legislature authorized a $99,994 grant to study a 60,000-acre area to verify that grazing can improve the natural ecosystem and wildlife habitat. Specific tasks to be accomplished include data collection, developing a rangeland management plan, continued monitoring of the rangeland, and revision of management plans based on data collection and analysis. Project completion date is expected to be December 2016 and one-third of the funds have been disbursed.

Havre, City of
Wastewater System Improvements
RRG-15-1635
The 2013 Legislature authorized a $100,000 grant for the design and construction of wastewater treatment plant improvements. The project is 90% complete and $95,000 has been disbursed.

Hill County
Beaver Creek Dam Improvements Project, Phase 2
RRG-14-1609
The 2013 Legislature authorized a $100,000 grant for the design and construction of improvements to the outlet works for Beaver Creek Dam. Construction is complete except for closeout and $95,199.92 has been disbursed.

Jefferson County
Big Pipestone Creek Remediation
RRG-14-1560
The 2013 Legislature authorized a $99,531 grant to reclaim the eroded lower reach of the Jefferson Canal. Design is in progress and $3,115.36 has been disbursed.

Jefferson County Commission
Big Pipestone Creek Channel Restoration and Development of Management Plans for the Riparian Area and Beaver Management
RRG-14-1561 ($1,096,836)
As of October 1, 2016 this grant was awarded by the 2013 legislature as a line item in House Bill 6.Seven stretches of Big Pipestone Creek were evaluated for channel restoration in an alternatives analysis and feasibility study. Stakeholders selected alternatives for each stretch. The project has met with landowner issues and is delayed; however, work is proceeding toward the construction of a new bridge and Kountz Road to alleviate flooding in Whitehall. To date, $393,305.57 has been disbursed.

Lodge Grass, Town of
Wastewater System Improvements
RRG-15-1638
The 2013 Legislature authorized a $100,000 grant for wastewater system improvements. The project is to rehabilitate the lagoons. The project has been expanded with federal funding to include collection service to outlying housing areas and is currently in the easement procurement and design phase; $49,906.26 has been disbursed.

Madison County
Moore's Creek Culvert Replacement
RRG-14-1599
The 2013 Legislature authorized a $100,000 grant to replace eight culverts to increase water-flow capacity during floods. The contract is expected to be completed by December 2016 and no grant funds have been expended.

Malta Irrigation District
Dodson South Canal Headgate
RRG-14-1588
The 2013 Legislature authorized a $100,000 grant to replace the Dodson South Canal headgate which supplies irrigation water to the southern portion of the system, as well as Bowdoin National Wildlife Refuge, Nelson Reservoir, and Glasgow Irrigation District through Nelson Reservoir. The District has chosen a contractor and construction will begin in the fall of 2016 with project completion set for December 2016. No funds have been disbursed.

Malta, City of
Water System Improvements
RRG-15-1647
The 2013 Legislature authorized $100,000 to Malta for replacement of leaking pipes and water mains. As well, 35 fire hydrants will be replaced. The project is under construction and $32,764 has been disbursed. Project completion is scheduled for December 2016.

Miles City, City of
Wastewater System Improvements
RRG-15-1632
The 2013 Legislature authorized a $100,000 grant for the design and construction of wastewater treatment plant improvements. The project is in the final design phase and will bid in the fall of 2016; $50,000 has been disbursed for engineering.

Moore, Town of
Wastewater System Improvements
RRG-14-1559
The 2013 Legislature authorized a $100,000 grant to rehabilitate existing lagoons, build a third lagoon cell, and install a new center pivot irrigation system and pump. The construction began in October of 2014 with final completion in December 2016. Of the funds, $90,000 has been disbursed.

Neihart, Town of
Water System Improvements
RRG-17-1657
The 2015 Legislature authorized $125,000 to Neihart to construct a new intake at Shorty Creek and to construct a new 120,000-gallon water storage tank. A contract is in place, construction has just begun, and completion is scheduled for December of 2018. No funds have been disbursed.

Philipsburg, Town of
Water System Improvements
RRG-14-1614
The 2013 Legislature authorized a $100,000 grant for the design and construction of a water system disinfection facility. The project is complete except for closeout and $95,000 has been disbursed.

Pinesdale, Town of
Water System Improvements
RRG-15-1643
The 2009 Legislature authorized a $100,000 grant for water treatment system improvements. Construction is in progress with completion scheduled for early 2017. No RRGL funds have been disbursed.

Polson, City of
Wastewater System Improvements
RRG-16-1649
The 2015 Legislature authorized $125,000 to construct a sequencing batch reactor wastewater treatment facility. The project is currently in design phase with completion scheduled for December of 2018. No funds have been disbursed.

Pondera County Conservation District
C-5 Canal Conversion Project
RRG-16-1643
The 2015 Legislature authorized $125,000 for the design and construction of a rehabilitation project on the C-5 Canal within the Pondera County Canal and Reservoir Company. The design, construction, and conversion to pipe of 6,500 feet of the C-5 Canal is under way with completion scheduled for December of 2016. There is $11,967 left in the contract.

Richland County
Savage Wastewater System Improvements
RRG-14-1617
The 2013 Legislature authorized a $100,000 grant for improvements to the wastewater system consisting of a collection system and lagoon upgrades, lift station installation, and treatment improvements. The project is expected to be completed by December 2016 and $27,594.51 has been disbursed.

South Wind Water and Sewer District
South Wind Water and Sewer District Improvements
RRG-14-1623
The 2013 Legislature authorized a $100,000 grant for Phase 1 of water and wastewater infrastructure improvements. To date two new wells have been drilled. The project is in the final design phase and is expected to bid in the fall of 2016; $74,269.85 has been disbursed.

Stevensville, Town of
Wastewater System Improvements
RRG-14-1568
The 2013 Legislature authorized a $100,000 grant for the design and construction of wastewater treatment plant improvements. The project is complete except for closeout and $95,000 has been disbursed.

Stillwater Conservation District
Assessing Groundwater Resources of Bedrock Aquifers
RRG-14-1605
The 2013 Legislature authorized a $100,000 grant for compilation of water data, collection of water chemistry, and creation of aquifer maps. The project is expected to be completed by December 2016 and $54,391.27 has been disbursed.

Sunny Hills Suburban County Water District
Water System improvements
RRG-15-1646
The 2013 Legislature authorized a $100,000 grant for water system improvements. This project is expected to be completed by December 2016 and $14,500 has been disbursed.

Sweet Grass Conservation District
Electric Light Ditch Irrigation Diversion Rehabilitation
RRG-16-1647
The 2015 Legislature authorized a $125,000 grant to construct a river spanning, rock vane U-weir. The engineering analysis and design is complete with construction to begin in the fall of 2016 and project completion in late 2017. There is $96,751 remaining on this contract.

Sweet Grass County
Grey Cliff Reach of the Yellowstone River
RRG-16-1651
The 2013 Legislature authorized a $100,000 grant for bank stabilization. The erosion is threatening not only arable land but also Lower Sweet Grass Road. The construction will begin in October of 2016 if all permitting is obtained with final completion in December 2017. A total of $42,440 has been dispersed.

Terry, Town of
Wastewater System Improvements
RRG-16-1639
The 2015 Legislature authorized $125,000 to Terry for the design and construction of a lagoon system; repair and upgrade of the flow control structures; and design and construction of an outfall pipeline to the Yellowstone River. Completion is expected by December 2016 and $44,000 of the funds have been disbursed.

Three Forks, City of
Wastewater System Improvements
RRG-14-1590
The 2013 Legislature authorized a $100,000 grant for the design and construction of wastewater treatment lagoon improvements. The project is 90% complete and $90,000 has been disbursed. The project is expected to be complete by December 2016.

Toston Irrigation District
Canal Rehabilitation
RRG-14-1606
The 2013 Legislature authorized a $100,000 grant to complete canal rehabilitation. The project is expected to be completed by December 2016 and $75,449.29 has been disbursed

Tri-County Water District
Water System Improvements
RRG-16-1655
The 2015 Legislature authorized a $125,000 grant to construct a 281,000-gallon storage tank with associated piping. The project has been bid and construction will begin in October with final completion by the end of 2016. There have been no disbursements to date.

University of Montana
Algae Bioremediation System for Acidic Industrial Wastewaters
RRG-14-1554
The 2013 Legislature authorized a $100,000 grant for a research project to develop an algae-based treatment system to remove nutrients and metals from acidic wastewater. Broader industrial applications will be researched for other acidic wastewater such as wastes from mining, coal plants, and steel manufacturing. Funds of $89,900 have been disbursed and contract completion is scheduled for the end of 2016.

Vaughn Water and Sewer District
Wastewater System Improvements
RRG-14-1630
The 2013 Legislature authorized a $100,000 grant for the design and construction of a new wastewater treatment facility. Funding and design problems have delayed the project and a portion of the grant was authorized to replace a failed collector line. Design is in progress for a new mechanical plant and $90,000 has been disbursed.

Westby, Town of
Wastewater System Improvements
RRG-17-1652
The 2015 Legislature authorized $125,000 to Westby for rehabilitation of lagoons, installation of pumps, and a center pivot for irrigation of treated effluent. The project is currently in design phase with construction beginning late in 2016 and project completion in December of 2017. There have been no disbursements to date.

Whitefish, City of
Nutrient Reduction Plan
RRG-14-1579
The 2013 Legislature authorized a $100,000 grant for nutrient data collection and development of a nutrient trading tool. The project is expected to be completed by the December 2016 and $86,613.51 has been disbursed.

Winnett, Town of
Wastewater System Improvements
RRG-14-1611
The 2013 Legislature authorized a $100,000 grant for the design and construction of wastewater treatment lagoon improvements. Funding shortages and land acquisition for a new lagoon have delayed the project; negotiations for land acquisition are in progress. To date, $77,391.58 has been disbursed for flow data collection and preliminary engineering.

Authorized Grant Projects Not Yet Executed

Bainville, Town of
Wastewater System Improvements
No Contract
Funding shortages have delayed the project with no progress to date. The project has not been cancelled.

Butte-Silver Bow City County Government
Moulton Reservoir- Reclamation and Protection Projects
No Contract
The 2015 Legislature authorized a $125,000 grant to protect source water supply for the city of Butte and improve recreational opportunities through reservoir reclamation and protection. To date, there has been no activity and no contract is in place for this project.

Chester, Town of
Wastewater System Improvements
No Contract
Funding shortages have delayed the project with no progress to date. The project has not been cancelled.

Flaxville, Town of
Wastewater System Improvements
No Contract
Funding shortages have delayed the project. Design has commenced, and the project is expected to be constructed in 2017.

Fromberg, Town of
Wastewater System Improvements
Contract
Funding shortages have delayed the project. Design has commenced, and the project is expected to be constructed in 2017.

Missoula County
Missoula County-Buena Vista Trailer Community Wastewater Improvements, Phase 1
The 2015 Legislature authorized a $125,000 grant to eliminate groundwater contamination from sewage and sewage leakage to the Clark Fork River through the Warm Slough by making improvements to storage lagoon and wastewater treatment system. To date, there has been no activity and no contract is in place for this project.

Pondera County Conservation District
Wasteway Rehabilitation Project
No Contract
The 2015 Legislature authorized funding a $125,000 grant to rehabilitate a storage reservoir and other system improvements. Funding shortages have delayed this project. The project has not been cancelled.

Rocker County Water and Sewer District
Wastewater System Improvements
No Contract
The project consists of the construction of a lift station and force main to the Butte-Silver Bow treatment facility. Design has been delayed. The project is expected to bid in the fall of 2016.

Terminated Grant Projects

Deer Lodge Valley Conservation District
Kohrs and Manning Ditch Company Infrastructure Improvements
RRG-14-1563
The 2013 Legislature authorized a $100,000 grant to replace the diversion with a structure requiring less maintenance and providing better diversion control. During the engineering and consultation phase of the project, it was discovered that that permitting requirements for the project exceeded the financial capabilities of the sponsor. The grant paid engineering and administrative cost of $13,508.25 and reverted $86,491.75.

Drummond, Town of
Wastewater System Improvements
No Contract
The 2013 Legislature authorized a $100,000 grant for wastewater lagoon improvements. Due to funding and design issues, the project is cancelled.

2017

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