
**FINAL
2001
UPPER CLARK FORK RIVER BASIN
RESTORATION WORK PLAN**

PREPARED BY:

**STATE OF MONTANA
NATURAL RESOURCE DAMAGE PROGRAM
1301 EAST LOCKEY
P. O. BOX 201425
HELENA, MT 59620-1425**

DECEMBER 2001

**FINAL
2001
UPPER CLARK FORK RIVER BASIN
RESTORATION WORK PLAN**

PREPARED BY:

**STATE OF MONTANA
NATURAL RESOURCE DAMAGE PROGRAM
1301 EAST LOCKEY
P. O. BOX 201425
HELENA, MT 59620-1425**

DECEMBER 2001

I hereby approve of the project funding recommendations as stated in this document:

Governor Judy Martz

Date

TABLE OF CONTENTS

SECTION 1.0: Executive Summary	1
1.1: Background.....	1
1.2: 2001 Grant Cycle and Overview of <i>Final 2001 UCFRB Restoration Work Plan</i>	2
1.3: Response to Public Comments.....	4
SECTION 2.0: Minimum Qualification Determinations	5
SECTION 3.0: Project Summaries	6
SECTION 4.0: NRDP Project Criteria Evaluations, Comparisons, and Ranking	11
4.1: Project Comparison Methodology.....	11
4.2: Project Criteria Comparisons.....	11
4.2.1: Stage 1 Criteria Required by Legal Considerations.....	12
4.2.2: Stage 2 Criteria Reflecting Montana Policies.....	17
4.2.3: Stage 2 Land Acquisition Criteria.....	21
4.2.4: Research and Monitoring Criteria.....	23
4.3: Project Ranking.....	23
SECTION 5.0: Final Funding Recommendations	26
APPENDIX A: Project Abstracts	A-1
APPENDIX B: Project Maps	B-1
APPENDIX C: Project Criteria Narratives	C-1
Antelope and Wood Creek Riparian Management Project (“Antelope Creek”).....	C-1
Drinking Water Infrastructure Replacement Phase I Project (“Butte Water”).....	C-8
East Deer Lodge Valley Watershed Project (“East Deer Lodge Valley”).....	C-16
Revised East Deer Lodge Valley Watershed Project (“Revised East Deer Lodge Valley”).....	C-28
Rocker Water Reclamation and Habitat Enhancement Project (“Rocker”).....	C-38
Silver Bow Creek Greenway Project (“Greenway”).....	C-52
Watershed Land Acquisition Project (“Watershed Land Acquisition”).....	C-65
APPENDIX D: Project Budget Summary Tables and Environmental Impact Checklists	D-1
APPENDIX E: Application Review Guidelines	E-1
APPENDIX F: Advisory Council Input	F-1

Acronyms

Advisory Council	Upper Clark Fork River Basin Remediation and Restoration Education Advisory Council
AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
ARCO	Atlantic Richfield Company
BMP	Best Management Practices
BSB	Butte/Silver Bow County
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Clark Fork River
DEQ	Montana Department of Environmental Quality
DNRC	Montana Department of Natural Resources
DOI	U.S. Department of Interior
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency
EQIP	Environmental Qualities Incentive Program
GSD	Greenway Service District
MFWP	Montana Fish, Wildlife and Parks
MPDES	Montana Pollutant Discharge Elimination System
MOA	Memorandum of Agreement
NRCS	Natural Resource Conservation Service
NRDP	Natural Resource Damage Program
RMEF	Rocky Mountain Elk Foundation
RPPC	UCFRB Restoration Plan Procedures and Criteria
SBC	Silver Bow Creek
SBR	Sequencing Batch Reactor
Tribes	Confederated Salish and Kootenai Tribes
UCFRB	Upper Clark Fork River Basin

USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
UV	Ultraviolet
WWTP	Waste Water Treatment Plant
VNRD	Voluntary Nutrient Reduction Program

1.0 EXECUTIVE SUMMARY

1.1 Background

The State of Montana (State) obtained approximately \$130 million for restoration of injured natural resources in the Upper Clark Fork River Basin (UCFRB) through a partial settlement of its natural resource damage lawsuit against the Atlantic Richfield Company (ARCO) in 1998. In 1999 the State developed a draft *UCFRB Restoration Plan Procedures and Criteria (RPPC)* to provide the framework for expending these restoration funds. The State revised the draft based on input from the UCFRB Remediation and Restoration Education Advisory Council (Advisory Council)¹ and public comment and finalized the *RPPC* in February 2000. Rather than embarking on a prescriptive process, the State elected to establish an annual grant process whereby various entities could apply for Restoration funds based on procedures and criteria set forth in the *RPPC*. The criteria are aimed at funding the best mix of projects that will restore or replace the natural resources that were injured, and/or services provided by those resources that were lost, due to releases of hazardous substances from ARCO and its predecessor's mining and mineral processing operations in the UCFRB.

The Montana Natural Resource Damage Program (NRDP) administers the UCFRB Restoration Grant process. UCFRB Restoration Grant eligibility requirements include:

Applicant Eligibility: Governmental and private entities and private individuals are eligible to apply for UCFRB Restoration Grants.

Project Type Eligibility: Three types of projects are eligible for funding:

- Restoration projects that will restore, rehabilitate, replace, or acquire the equivalent of injured natural resources and/or the services lost as a result of releases of hazardous substances by ARCO or its predecessors that were the subject of the Montana v. ARCO lawsuit.
- Planning projects that involve developing future grant proposals.
- Monitoring and research projects that pertain to restoration of natural resources in the UCFRB.

Project Location Eligibility: Only projects that are located in the UCFRB are eligible for funding. Activities associated with research projects do not have to occur within the UCFRB, provided the proposed research project pertains to injured natural resources in the UCFRB.

¹ The Advisory Council consists of ten citizen volunteers representing the public and various interest groups and five government representatives. A list of Advisory Council members is provided in Appendix F.

In February 2000, the State launched its Pilot Year 2000 grant cycle. In December 2000, Governor Racicot approved approximately \$7 million for funding eight projects that involve stream restoration, revegetation, easements and land acquisitions, and development of a recreational trail corridor and an UCFRB database. The *State's Final Pilot Year 2000 Upper Clark Fork River Basin Restoration Work Plan*, which outlines the approval process and details the approved projects, is available on the Department of Justice website at www.doj.state.mt.us (under "Legal Services") or upon request from the NRDP (406-444-0205).

1.2 2001 Grant Cycle and Overview of *Final 2001 UCFRB Restoration Work Plan*

This *Final 2001 UCFRB Restoration Work Plan (Final Work Plan)* describes the NRDP's evaluation of the 2001 Restoration Grant applications and the Trustee's final funding determination. The *RPPC* sets forth the process the State followed in evaluating applications and recommending funding. The following summarizes the various phases of the application evaluation process and describes the sections of this *Final Work Plan* that are reflective of these phases:

- In November 2000, the Trustee Restoration Council² adopted a multi-year funding policy and established a \$6.0 million funding limit for the 2001 Grant Cycle.
- In January 2001, the NRDP distributed 2001 grant application materials and conducted educational workshops on the application process.
- In March 2001, the NRDP received eight grant applications for a total funding request of \$6,526,928. Appendix A contains project abstracts provided by the applicants. Appendix B provides maps showing the location of some of the projects.
- In April 2001, the NRDP issued its minimum qualification determinations for the eight applications. Four projects were judged as meeting all the minimum qualification screening criteria and four projects were judged as uncertain as to whether they met the legal threshold minimum qualification criterion. It was determined that those uncertainties could be best addressed through a full detailed project evaluation and public input. Section 2.0 summarizes the NRDP minimum qualification determinations.
- Prior to undergoing the full evaluation, applicants for two grant projects withdrew their applications from further consideration in this grant cycle. The NRDP evaluated the remaining six projects according to criteria specified in the *RPPC*. Section 3.0 summarizes these projects. Section 4.0 summarizes the NRDP's detailed Project Criteria Narratives that are contained in Appendix C and

² The Trustee Restoration Council consists of the Governor's Chief of Staff, the Attorney General, the Chairman of the Advisory Council, and the directors of the State's three natural resource agencies.

constitute the basis for project comparisons and funding recommendations. These evaluations were based on application review guidelines contained in Appendix E that were derived from the criteria set forth in the *RPPC*. Appendix D provides the Budget Summary Tables and the Environmental Impact Checklist provided by the applicants for these six projects.

- The NRDP compared the remaining six projects on a criterion-specific basis and ranked the projects in order of preference for funding consideration based on these criteria comparisons. Section 4.0 provides these NRDP project comparisons and ranking.
- In July 2001, the NRDP submitted a *Pre-Draft 2001 UCFRB Restoration Work Plan (Pre-Draft Work Plan)* to the Advisory Council, the U.S. Environmental Protection Agency (EPA), the U.S. Department of Interior (DOI), the Confederated Salish and Kootenai Tribes (Tribes), and other interested parties. Input from the Tribes and DOI are contained in the Project Criteria Narratives in Appendix C. The *Pre-Draft Work Plan* contained the NRDP's grant evaluations and funding recommendations. The NRDP recommended four of the six projects for funding – the Greenway, the Watershed Land Acquisition, the Butte Water, and Antelope Creek projects. The NRDP did not recommend funding of the Rocker or East Deer Lodge Valley projects.
- The Advisory Council considered the NRDP's *Pre-Draft Work Plan*, the NRDP funding recommendations and public input. In addition to funding for the four projects recommended by NRDP staff, the Advisory Council recommended funding for the Rocker project. A summary of Advisory Council input is provided in Appendix F.
- In August 2001, the Trustee Restoration Council considered the *Pre-Draft Work Plan*, the NRDP funding recommendations and the views of the Advisory Council and other interested parties on the *Pre-Draft Work Plan*. This Council voted to recommend for funding the five projects recommended for funding by the Advisory Council, four of which were also recommended for funding by the NRDP. The Council also directed that the NRDP and East Deer Lodge Valley Watershed project applicant work to seek a compromise partial funding proposal that focused on the first-year projects with time-critical matching funds. In September 2001, the Trustee Restoration Council approved a compromise agreement worked out between the NRDP and project applicant, which is described in further detail in Appendix C. The NRDP incorporated these draft funding recommendations into the *Draft 2001 UCFRB Restoration Work Plan (Draft Work Plan)*.
- The NRDP solicited public comment on the *Draft Work Plan* between October 4 and November 5, 2001. A total of 42 individuals, including those representing 14 entities, submitted either written comments or provided oral comments at two

public hearings held in the UCFRB. The NRDP drafted responses to these comments for consideration by the Trustee Restoration Council.

- On December 7, 2001, the Trustee Restoration Council considered public comments on the *Draft Work Plan* and the NRDP's draft response to these comments in making final funding recommendations to the Governor that are provided in Section 5.0. The following are the six projects and amounts recommended for funding by the Trustee Restoration Council:
 - Silver Bow Creek Greenway - \$ 1,206,755
 - Watershed Land Acquisition - \$ 2,067,673
 - Butte Drinking Water Infrastructure Replacement Phase I - \$1,165,795
 - Antelope and Wood Creek Riparian Management Project - \$10,000
 - Rocker Water Reclamation and Habitat Enhancement Project - \$719,566
 - Revised East Deer Lodge Valley Watershed Project - \$135,941
- In December 2001, Governor Martz considered the Trustee Restoration Council's final funding recommendations and the input from various individuals and entities that commented on the *Draft Work Plan*. The Governor approved the Council's final funding recommendations contained in Section 5.0.

1.3 Response to Public Comments

The NRDP finalized the *State of Montana's Responses to Public Comment on the Draft 2001 UCFRB Restoration Work Plan (Response to Comments)* based on the Trustee Restoration Council's final funding recommendations. Public input on the *Draft Work Plan* project funding recommendations is summarized in the Project Criteria Narratives (Appendix C) of the *Final Work Plan*. The *Response to Comments* indicates what changes were made in the *Draft Work Plan* as a result of public comment. The *Response to Comments* is available upon request from the NRDP or from the Department of Justice webpage at www.state.doj.mt.us under "Legal Services."

2.0 MINIMUM QUALIFICATION DETERMINATIONS

The NRDP initially evaluated the eight applications submitted in March 2001 according to the following minimum qualification criteria specified in the *RPPC*:

- The application is completed fully and accurately and contains all necessary information.
- The proposed project would restore, rehabilitate, replace or acquire the equivalent of the natural resources that were the subject of Montana v. ARCO and injured as a result of releases of hazardous substances by ARCO or its predecessors.
- The proposed project would be located in the UCFRB. (This requirement does not apply to research projects, provided that the proposed research pertains to restoration of natural resources located in the UCFRB)
- The applicant has the ability, financial means, and other qualifications necessary to undertake the proposed project.
- The projected cost of the project as estimated by the applicant is a reasonable approximation of the project cost.

In its minimum qualification determinations, the NRDP noted uncertainties regarding whether the “East Deer Lodge Valley Watershed Project,” “Westside Ditch Planning Grant,” “Rocker Reclamation and Habitat Enhancement Project” and “East Butte Redevelopment Project” proposals met the legal threshold that the projects substantially restore or replace injured natural resources or lost services in the UCFRB. Subsequently, the applicants for the East Butte Redevelopment and Westside Ditch projects formally withdrew their application. The six other projects were fully evaluated.

3.0 PROJECT SUMMARIES

Table 1 summarizes the six projects that received full evaluation. The total request for Restoration funds for these projects is \$6,015,160. The following summary of each project is provided for assistance in understanding the project evaluations and comparisons contained in Section 4.0. More detailed project abstracts provided by the applicants are contained in Appendix A.

Montana Council of Trout Unlimited – Antelope and Wood Creek Riparian Management Project (“Antelope Creek”)

This project involves the rehabilitation of Antelope Creek and its tributary, Wood Creek. The project would improve riparian habitat conditions, stream channel stability, and westslope cutthroat trout habitat. These creeks contain genetically pure populations of westslope cutthroat trout. Phase I, which was completed in 2000, involved installation of riparian fencing along the lower 2.7 miles of Antelope Creek and the lower 2.3 miles of Wood Creek, and development of a grazing management plan. Phase II involves the revegetation of the same reaches with woody riparian species. Of the total Phase II cost of \$49,160, the amount requested from the Restoration fund is \$10,000, which would be used for revegetation design and plantings along 2.5 miles of lower Antelope Creek and 0.5 miles of lower Wood Creek.

Butte-Silver Bow Local Government – Drinking Water Infrastructure Replacement Phase I (“Butte Water”)

Butte-Silver Bow County (BSB) proposes to replace approximately 17,000 feet of inadequate water distribution lines in the City of Butte for a total cost of \$1.7 million, with \$1.1 million requested in Restoration funds. Butte’s bedrock aquifer is contaminated throughout a six square mile area of the City and these distribution lines overlay that aquifer. This aquifer is so severely injured that natural recovery will not occur for thousands of years as concluded by the State’s 1995 Restoration Determination Plan³ and by EPA’s 1994 Record of Decision.⁴ Restoration of the bedrock aquifer is infeasible, thus the aquifer’s drinking water and its storage capacity and transport services have been lost for thousands of years. This proposal constitutes replacement of lost services to thousands of property owners and other members of the public in Butte that could utilize the aquifer if it was not injured. By fixing leaking and corroded water lines, this proposal will enhance the water supply from an uncontaminated source.

³ *Restoration Determination Plan for the Upper Clark Fork River Basin* (NRDP, October, 1995).

⁴ *Record of Decision, Butte Mine Flooding Operable Unit*, (U.S. Environmental Protection Agency, September 1994).

Watershed Restoration Coalition of the Upper Clark Fork – East Deer Lodge Valley Watershed Project (“East Deer Lodge Valley”)

Original Proposal

This project intends to replace injured aquatic and terrestrial resources and associated lost services through a watershed-based approach involving ten subwatersheds located between Warm Springs Ponds and the Clark Fork River covering 121,000 acres of land; 227 miles of perennial streams and numerous intermittent streams; 44 landowners singly or jointly involved in 49 individual projects; and multiple funding agencies. The project seeks to improve water quality and fish and wildlife habitat through activities such as riparian fencing and streambank revegetation; grazing management in riparian and upland areas; development of off-stream watering facilities; integrated weed management; and removal of mine tailings. Specifically, this project would involve: 5.4 miles of riparian forest buffer planting; 16.3 miles of riparian fencing and grazing management; 18.3 miles of water pipeline connected to off-stream water supplies; placement of 41 off-stream stock water tanks; installation of 9 stock water wells; installation of 3 water gaps; restoration of 532 acres of wetlands; establishment of conservation plans on 55,855 acres with prescribed grazing; installation of 17 miles of cross fencing for grazing rotation; critical planting on 452 acres of uplands; and 1.5 miles of shelterbelts. The total project cost is \$1,761,361, with requested Restoration funds totaling \$627,344, or 36% of the total project cost. This is an approximately 4-year effort, with work having begun in 2000. Restoration funds are requested for years 2002-2005.

Revised Proposal

This project represents a reduction in the scope and costs of the project as originally submitted by the Watershed Restoration Coalition (WRC), with the total requested Restoration funds reduced to \$135,941. This revised project resulted from an effort between the NRDP and the WRC, as directed by the Trustee Restoration Council, to reach a compromise funding proposal that focused on first-year projects with time-critical matching funds. This replacement project seeks to improve fish and wildlife habitat and associated services through implementation of agricultural best management practices on rangelands on the east side of the Deer Lodge Valley between Warm Springs Ponds and Deer Lodge. This project is being funded as a pilot project to evaluate the natural resource benefits of activities such as riparian fencing and streambank revegetation, development of off-stream watering facilities, and grazing management in riparian and upland areas. This project involves 9 individual subprojects within several watersheds, principally the Peterson Creek and Cottonwood Creek watersheds. The total cost for the 9 subprojects, including federal funds, is \$268,330, of which 40% would come from the Restoration fund. The remaining part of the grant (\$25,000) would be for planning activities that will primarily involve the collection and analysis of additional assessment data across 122,000 acres in the East Deer Lodge Valley watershed area to assist in the evaluation of the long-term success of these 9 projects, as well as facilitating the development of future projects.

County Water and Sewer District of Rocker – Rocker Water Reclamation and Habitat Enhancement Project (“Rocker”)

This project is intended to accomplish three broad objectives: 1) provide advanced wastewater treatment (primarily nutrient removal) with benefits to Silver Bow Creek; 2) provide replacement and restoration of lost aquatic and terrestrial wildlife habitat, particularly for waterfowl, through the creation of four wetlands/treatment cells; and, 3) provide walking and wildlife viewing recreational opportunities. The project (\$1,176,576 total cost) has four main components: wastewater treatment system improvements, lift station upgrading, ultraviolet (UV) disinfection system installation, and wetlands/treatment cells construction. The 15-acre project area will contain four wetland cells totaling approximately 5 acres that would receive water continually from the Rocker wastewater treatment lagoons. The upper two cells, approximately 2.5 acres total, would be lined and located outside of the Silver Bow Creek floodplain. The lower two cells, approximately 1.2 acres each, would be unlined and intercept groundwater.

A total of \$719,566 in Restoration funds would be applied to the wetlands construction (\$665,615) and the UV disinfection system (\$53,951), which would replace the existing chlorination system. The recreational features of the project, such as trails and wildlife viewing overlooks, are included in the wetlands construction costs. The other project components would be funded by the County Water and Sewer District of Rocker (District) or through other funding sources. Construction of the treatment cells and wetlands comprises about 93% of the total requested Restoration funds.

Greenway Service District – Silver Bow Creek Greenway (“Greenway”)

The Greenway Service District (GSD) is requesting approximately \$1.4 million to develop a recreational trail corridor and to restore aquatic and riparian resources along miles four and five (Reaches D through E) of Silver Bow Creek west of Butte. The Greenway activities will be coordinated with remedial actions. Last year, the GSD was awarded \$1.7 million in Restoration funds for development of the Greenway trail through the first three miles (Reaches A, B, and C) of Silver Bow Creek. This year’s proposal will connect to those first three miles of trail. The proposal also provides an overview of the planned Greenway efforts for the entire 22 miles of Silver Bow Creek over the next 10 – 12 years.

Rocky Mountain Elk Foundation – Watershed Land Acquisition (“Watershed Land Acquisition”)

The Rocky Mountain Elk Foundation (RMEF) holds a purchase option to acquire approximately 32,500 acres in the UCFRB from Y.T. Timber via a phased acquisition over 4 years, from December 2000 to December 2003. The property is located between Anaconda and Georgetown Lake and includes the bulk of the Warm Springs Creek watershed not already in public ownership. The property includes habitats for native trout, critical big game winter range, alpine lakes, and wetlands. To acquire this property

for public ownership, RMEF seeks a total of \$22.5 million total in state and federal grant funds to acquire approximately 9,000 acres for state ownership and management by Montana Fish, Wildlife, and Parks (MFWP) and 23,500 acres for federal ownership and management by the U.S. Forest Service (USFS).

In 2000, RMEF received \$3,764,231 in UCFRB Restoration funds to acquire 5,790 acres, approximately 65% of the lands slated for state ownership. This is referred to as “Phase 1” of the acquisition. As “Phase 2,” RMEF is now applying for \$2,065,700 in Restoration funds to acquire the remaining 3,181 acres. The Phase 1 and 2 acquisition lands consist of two parcels that provide prime wildlife habitat and numerous recreational opportunities – the Garrity Mountain parcel (6,706 acres) and the Clear Creek parcel (2,265 acres). In the Phase 1 transaction, the State acquired 4,343 acres of the Garrity and 1,447 acres of the Clear Creek parcels, respectively. The option agreement allows Y.T. Timber to conduct timber harvest activities on the acquisition lands until December 2006 subject to terms of a timber management policy.

**Table 1
2001 Restoration Projects – Requested Funding**

APPLICANT	PROJECT	BUDGET	2002	2003	2004	2005
Trout Unlimited	Antelope and Wood Creek Riparian Management Project	NRDP - \$10,000 Other - \$39,160 Total - \$49,160	\$10,000			
Butte-Silver Bow Local Government	Drinking Water Infrastructure Replacement Phase I	NRDP - \$1,165,795 Other - \$540,680 Total - \$1,706,475	\$1,165,795			
Watershed Restoration Coalition	East Deer Lodge Valley Watershed Project (original proposal)	NRDP - \$627,344 Other - \$1,134,017 Total - \$1,761,361	\$180,167	\$280,137	\$95,863	\$71,177
County Water and Sewer Dist. of Rocker	Rocker Water Reclamation and Habitat Enhancement Project	NRDP - \$719,566 Other - \$457,010 Total - \$1,176,576	\$719,566			
Greenway Service District	Silver Bow Creek Greenway	NRDP - \$1,426,755 Other - \$0 Total - \$1,426,755	\$1,426,755			
Rocky Mountain Elk Foundation	Watershed Land Acquisition	NRDP - \$2,065,700 Other - \$17,082,014 *Total - \$22,911,945 *\$3,764,231 Funded previously by NRDP	\$2,065,700			
Total NRD Requests for 2001 Grant Cycle --		\$6,015,160				

4.0 PROJECT CRITERIA EVALUATIONS AND COMPARISONS

4.1 Project Comparison Methodology

The NRDP evaluated the six 2001 Restoration grant projects according to the criteria specified in the *RPPC*. These evaluations are set forth in the attached Project Criteria Narratives (Appendix C). In the *RPPC*, the State established a non-quantitative process in which the projects are ranked against each other. The criteria are not rated in terms of importance or assigned numeric values. While each criterion is important, each criterion as applied to individual projects will vary in its importance depending on the nature of the project and unique issues it raises. There are nine Stage 1 criteria reflecting legal requirements that apply to all projects; eight Stage 2 criteria reflecting State of Montana policies that apply to all projects; five criteria that apply only to land acquisition projects; and two criteria that apply only to monitoring and research projects.

The Project Criteria Narratives are the major basis for comparing projects as they provide the detailed information needed to determine how well one project meets or addresses a particular criterion compared to another project. To help in these evaluations, the NRDP developed Application Review Guidelines (Appendix E) based on the *RPPC*. These Guidelines categorize the likely manner in which restoration projects meet or address a particular criterion. For example, for technical feasibility, projects are categorized as reasonably feasible, uncertain feasibility, or not feasible. These categories provide a framework to assist in evaluating and comparing projects consistently. Reviewers should note that it is the explanatory text provided in the detailed Project Criteria Narrative for each criterion, not the titles provided in this guidance to characterize projects, which forms the basis of judging how well a project addresses a particular criterion. The titles/headers should not be misconstrued to denote a certain level of ranking or adequacy in meeting the *RPPC* criteria.

For the revised East Deer Lodge Valley project, two Project Criteria Narratives are presented in Appendix C – one for the project as originally proposed (\$627,344 for 49 subprojects) and one for the revised project that the Trustee Restoration Council approved for funding consideration in the *Draft Work Plan*. The revised project is reduced in scope and cost from the original proposal (\$135,941 for 9 subprojects, with a focus on the first year projects that have time-critical matching funds). The summary statements in this Section, regarding how well this project does or does not meet *RPPC* criteria in comparison with other projects, are specific to the revised project and not the original proposal.

Subsection 4.2 provides the NRDP project comparisons on a criterion-specific basis. Subsection 4.3 provides the overall NRDP project ranking based on these comparisons.

4.2 Project Criteria Comparisons

This section presents the NRDP's comparison of the six projects pursuant to each criterion. It summarizes the similarities and differences between projects that were

determined through a comparison of the NRDP Project Criteria Narratives contained in Appendix C.

4.2.1 Stage 1 Criteria Required by Legal Considerations

#1 Technical Feasibility

This criterion evaluates the degree to which a project employs well-known and accepted technologies and the likelihood that a project will achieve its objectives. The State will not fund projects considered technologically infeasible. All six projects employ well-known and accepted technologies. Five of the six projects have a reasonable likelihood of achieving their objectives, although to varying degrees of certainty.

Projects with the highest certainty of technical and administrative feasibility are the Butte Water and Watershed Land Acquisition projects. Butte Water has successfully conducted similar water main replacement projects in the City in the past 8 years and has properly planned for logistical problems such as temporary disruption of service. With the successful execution of the real estate agreement for the first Phase of the Watershed Land Acquisition in February 2001, almost all the major steps to completing this transaction have been completed. The only remaining uncertainty involves access to the Clear Creek parcels.

The proposed stream revegetation work for the Antelope Creek project is a straightforward method of improving riparian conditions and aquatic habitat for fish. The applicant has appropriately addressed problems associated with revegetating the severely eroding faces of the streambanks. Some uncertainty exists about the permanence of the benefits in the long-term, since contractual obligations of the landowner tied to protecting and enhancing revegetation efforts expire after 15 years.

Both the Rocker and Greenway projects are reasonably feasible overall, although there are uncertainties regarding the likelihood of achieving objectives for portions of these projects. There are uncertainties associated with both the technical and administrative feasibility of the aquatic enhancement efforts of the Greenway project. The applicant has appropriately planned to address these uncertainties during the remedial design phase in coordination with NRDP, DEQ, and MFWP. The Rocker project employs well-known, commonly used methodologies to accomplish advanced wastewater treatment. Uncertainties involve the extent to which the quantity and quality of wildlife habitat will be optimized, whether the 15 acres of land can be obtained at a reasonable price, and whether water rights issues can be addressed in a timely manner to allow for coordination with remedy.

The revised East Deer Lodge Valley project employs well-known, commonly used agricultural best management practices to address resource problems, generally degraded riparian and upland vegetation quality. The project team has expertise in planning and implementing these practices. The subprojects encompassed in the revised project are

reasonably feasible, although there remains some uncertainty as to what extent they will achieve the project's goals of improved fish and wildlife habitat.

#2 Relationship of Expected Costs to Benefits

This criterion evaluates the degree to which project costs are commensurate with project benefits. While it is possible to quantify most costs, quantifying benefits is more difficult. Thus, application of this criterion is not a straight cost/benefit analysis.

Benefits were considered to outweigh costs for the Antelope Creek, Greenway, Butte Water, and Watershed Land Acquisition projects. It is difficult to judge just which of these projects provides the greatest benefits compared to costs. Given its low \$10,000 cost and high matching funds of 80%, the Antelope Creek project stands out from the other three projects that cost over one million and that have reasonable (Butte Water) to no matching funds (Greenway and Watershed Land Acquisition). However, these three projects provide substantially greater benefits to injured or replacement natural resources and their associated services than the Antelope Creek project. In terms of the public and natural resources that will benefit from these three projects, the Greenway offers the greatest benefits and the Watershed Land Acquisition offers greater benefits than the Butte Water project. In terms of benefits to injured resources, the Greenway offers the greatest benefits.

The total cost of the revised East Deer Lodge Valley project is substantially reduced (by about 80%) from what was originally proposed. While some details about the project are still lacking, the benefits of the project are judged to outweigh its costs, given that this is considered a pilot project and its results will be used to help determine whether similar projects will be recommended for funding in the future, and given that the final design plans are subject of NRDP review and approval.

The NRDP judged the costs of the Rocker project to be high compared to the restoration benefits that would be achieved. In the NRDP's analysis, the primary restoration benefits are derived from the creation of 5 acres of wetlands for wildlife habitat, wildlife, and associated public recreational opportunities. The cost per acre of these wetlands is \$133,000, and the NRDP determined that a similar level of benefit could be achieved with other designs within the Silver Bow Creek floodplain at a significantly lower price.

#3 Cost-Effectiveness

This criterion examines whether a particular project accomplishes its goals in the least costly way possible, with preference given to projects with demonstrated cost-effectiveness. Applicants were to address this criterion through the analysis of alternatives and justification of the selected alternative.

The Butte Water, Watershed Land Acquisition, and Antelope Creek projects were judged likely to be cost effective. Replacing the leaking water lines in Butte is the most economical way to replace lost services from the injured bedrock aquifer. Assuming that

Y.T. Timber would only consider a sales agreement covering the proposed acreage that allowed the indicated timber reservation, and given that the price is below the appraised fair market value, the NRDP does not believe a suitable alternative exists that will produce similar benefits at lower costs for the Watershed Land Acquisition. The Antelope Creek represents an appropriate alternative compared to a no-action alternative that would not achieve full recovery of the riparian resources and a more expensive alternative involving mechanical streambank work.

The NRDP determined that most of the components of the Greenway project are cost-effective, but recommended specific budget cuts totaling \$220,000 tied to reducing the proposed \$200,000 comprehensive land planning effort that is insufficiently documented, and reducing the trail's asphalt thickness. The NRDP considers the design of a 10' wide, paved trail to be an appropriate alternative for Reaches D and E given the intended shared use of the trail by pedestrians and cyclists and the anticipated high use of these sections of the trail given their proximity to Butte, Rocker and the Rocker access station.

The revised East Deer Lodge Valley project is considered likely to be cost effective given the proviso of NRDP review and approval of all final design plans, and also given that as this is a pilot project, the results of which will help determine whether similar projects will be recommended for funding in the future.

From the standpoint of the applicant's joint objectives of the Rocker project to both enhance the Rocker plant's wastewater treatment capabilities and create wetlands habitat, the applicant provided a sound analysis demonstrating the cost-effectiveness of the selected alternative. However, from the standpoint of benefits to the natural resources, the NRDP does not consider the Rocker project cost-effective because the benefits of nutrient removal, if any, are comparatively minor, and similar wetlands habitat can be constructed or rehabilitated at significantly less cost than the proposed project.

#4 Environmental Impacts

This criterion evaluates whether and to what degree the proposal will have an adverse impact on environmental resources. None of the projects will cause significant adverse impacts to the environment. In the long term, all six projects are anticipated to benefit environmental resources to varying degrees as highlighted in analyses of other criteria.

The Greenway, Butte Water, Rocker, and revised East Deer Lodge Valley projects have potential short-term adverse impacts associated with construction that can be mitigated. For the Greenway and Watershed Land Acquisition projects, environmental impacts may occur because of the greater public access these proposals provide. These impacts can be addressed, however, through access controls and management plans.

For the revised East Deer Lodge Valley project, a possibility exists that some of the proposed spring developments and upland water developments, if not properly designed, could be detrimental to fish and wildlife. With the proviso of the NRDP's review and

approval of final design plans, the NRDP can likely assure that Restoration funds will be used for activities that will result in a net improvement to fish and wildlife resources.

There are potential adverse impacts associated with the continued timber harvest activities on the Watershed Land Acquisition property. The timber harvest may increase erosion and impact water quality and quantity; however, these impacts are not considered significant assuming that provisions of the timber harvest policy are followed. Impacts will occur to wildlife and visual quality until forest regeneration occurs. The Watershed Land Acquisition offers conditions that provide greater protection to environmental resources than would occur if the landowner were to harvest in the absence of these conditions.

#5 Human Health and Safety Impacts

This criterion evaluates whether and to what degree the proposal will have an adverse impact on human health and safety. None of the projects will cause significant adverse impacts to human health and safety. All the projects have potential impacts related to construction or field activities, but none are deemed significant and mitigative efforts are appropriately planned. A safety hazard associated with public use of roads in the Watershed Land Acquisition area during timber harvest operations can be minimized via travel restrictions in MFWP's travel management plan for these lands.

The Butte Water project will have potentially beneficial impacts on human health and safety by reducing road hazards caused by leaking water and ice; reducing the potential contamination of the water system via leaks; and reducing safety hazards caused by inadequate pressure and flow for fire fighting purposes. By switching from gas chlorine to an ultraviolet disinfection system, the Rocker project will eliminate the threat of a release of toxic gas.

#6 Results of Superfund Response Actions

This criterion examines the relationship between projects and completed, planned, or anticipated Superfund response actions. The State will tend to favor projects that build on response actions rather than those that undo an effective response action. The Greenway, Rocker, Antelope Creek, and revised East Deer Lodge Valley projects positively coordinate with and will or may augment on-going or planned Superfund response actions. Of those, the Greenway and Rocker projects achieve cost efficiencies by directly coordinating with response actions and both will augment response actions. The Greenway project provides for greater coordination with and augmentation of response actions than the Rocker project. Due to its greater scope and its location further upstream, the revised East Deer Lodge Valley project has a greater potential to augment Superfund response actions than the Antelope Creek project.

The Butte Water and the Watershed Land Acquisition projects are considered consistent with Superfund response actions. Neither project will interfere with or duplicate the

results of these actions. The Watershed Land Acquisition integrates with future response actions because it protects headwater streams upgradient of injured aquatic resources.

#7 Recovery Period and Potential for Natural Recovery

This criterion evaluates whether and to what degree a project affects the time frame for natural recovery of the injured resources to their baseline conditions. Reduction of the recovery period benefits a project's overall ranking. This criterion also evaluates the potential for natural recovery of injured resources. If a resource is expected to recover on its own in a short period of time, a restoration action may not be justified.

The Greenway project will reduce the recovery period for injured resources by revegetating the floodplain area of Silver Bow Creek and by enhancing fish habitat in the Creek. The Rocker project may reduce the recovery period to a limited degree via the creation of 5 acres of open-water habitat that would not otherwise be created under remedy. The revised East Deer Lodge Valley project may enhance water quality and trout populations in the Clark Fork River to a limited degree. The Antelope Creek, Butte Water, and Watershed Land Acquisition projects are not expected to have any effect on recovery potential of injured resources in the UCFRB.

#8 Applicable Policies, Rules, and Laws

This criterion evaluates to what degree the proposal is consistent with all applicable policies of state, federal, local and tribal government and in compliance with applicable laws and rules. Consistency with applicable policies, rules, and laws benefits a project's overall ranking. The NRDP concludes that all six projects can be implemented in compliance with applicable laws and rules. The Rocker application did not address the applicability of water rights, but the applicant may be able to resolve these issues and obtain the needed permits before project implementation. All the applicants have conducted the needed coordination with local entities or appropriately planned for this coordination. The NRDP is not aware of any governmental policies specific to these projects, except for the Greenway. The Greenway is authorized via two county ordinances and addressed in Butte-Silver Bow's Master Plan that creates an open space corridor along a quarter of a mile on each side of Silver Bow Creek.

#9 Resources of Special Interest to the Tribes and Department of Interior

Pursuant to a Memorandum of Agreement (MOA), the State is to pay particular attention to natural resources of special interest to the Confederated Salish and Kootenai Tribes and the Department of Interior. Projects that may cause potential negative impacts to resources of special interest require special consideration according to provisions of the MOA. The NRDP solicited information from both the Tribes and the DOI regarding these resources or sites that are relevant to proposals.

Based on information available to the NRDP at this time, none of the proposals involve potential negative impacts to resources of special interest. All the projects except Butte Water may or will have beneficial impacts to natural resources of special interest.

The Tribes have not provided specific information regarding tribal resources or sites of special interest to the Tribes relevant to any of the projects. Based on input provided by the Tribes in the pilot year, the Tribes are likely to request review of the four projects that involve land disruption activities (Antelope Creek, Greenway, Rocker, and East Deer Lodge Valley) at the project implementation phases. The Tribes provided a letter of support for the Watershed Land Acquisition pilot year application.

In its comments on the 2001 projects, the DOI indicated its strong support of the Antelope Creek and the Watershed Land Acquisition projects and its support of the East Deer Lodge Valley project. The DOI stated that the Greenway project meets the funding qualifications and would have no adverse impact on DOI resources. The agency expressed concern over the high cost of the Rocker project and recommended further study into the benefits likely to be yielded by this project.

4.2.2 Stage 2 Criteria Reflecting Montana Policies

#10 Project Location

This criterion evaluates the proximity of the proposal to the injured resources it restores or replaces. The *RPPC* expresses a preference for restoration projects that occur at or near the site of injury. All six projects are within the UCFRB. The Greenway and Butte Water projects and part of the Rocker project are in injured areas. The East Deer Lodge Valley, Watershed Land Acquisition and Antelope Creek projects are considered proximate to injured natural resources. The East Deer Lodge Valley and Watershed Land Acquisition projects are in closer proximity to the areas of greatest injury in the Upper Basin than the Antelope Creek project.

#11 Actual Restoration of Injured Resources

This criterion evaluates whether and to what extent a project actually restores an injured resource. A preference exists for those projects that constitute actual restoration (i.e., they operate directly on the injured resources). For those projects that do not constitute actual restoration, a preference can be given to those that may or will indirectly contribute to restoration of injured natural resources over those that do not so contribute.

No project constitutes restoration in its entirety. The Greenway and Rocker projects contain restoration components: revegetation and enhancement of aquatic habitat for the Greenway, and creation of wetlands habitat for Rocker. The Greenway has a more substantial restoration component than the Rocker project.

The Antelope Creek, Watershed Land Acquisition and revised East Deer Lodge Valley projects may contribute to restoration of injured resources. The Watershed Land

Acquisition project, due to its size and the significance of the Warm Springs Creek tributary to the Clark Fork River, would provide a greater contribution over the long-term to restoration of injured aquatic resources than the Antelope Creek project. The Watershed Land Acquisition may also enhance wildlife populations whose range might extend to the nearby-injured areas given initiation of restoration efforts in those areas. The connectivity between water and fisheries resources of Antelope Creek suggests that this project may enhance water quality and trout populations in the Clark Fork River to a very limited degree. If the revised East Deer Lodge Valley project accomplishes its objectives, there may be secondary, minor benefits to the Clark Fork River through improvements to water quality and trout habitat for the two tributaries connecting to the River.

The Butte Water project will not restore or contribute to the restoration of injured resources; however, it replaces services of the injured Butte bedrock aquifer that cannot be restored.

#12 Relationship between Service Lost and Service Restoration

The criterion examines the connection between the services that a project seeks to address and the services that were lost or impaired as a result of natural resource injuries. Projects that closely link the services that are a project's focus with the service flows that have been impaired will be favored over those projects that do not.

The purpose of this criterion was to separate those projects whose focus is to provide the same or similar services as those lost or impaired from those projects whose focus is to provide dissimilar services. All of the projects have a focus of providing services the same as or similar to those services that were lost. Some of the services provided by the Greenway proposal, such as biking and skating, are different from the services lost or impaired as a result of injury to natural resources.

The extent to which the projects provide services that are comparable to impaired services varies greatly. The Butte Water project provides replacement drinking water services that are closely linked to impaired services to a large portion of the public impacted by the injury to the Butte bedrock aquifer. The Greenway and Watershed Land Acquisition provide the greatest fish and wildlife habitat services and associated public recreational services. The Rocker and Antelope Creek projects also provide these habitat and recreational services, but to a lesser extent. The East Deer Lodge Valley project has the potential to enhance fish and wildlife habitat and associated recreational services, but further details are needed to assess the magnitude of these service benefits.

#13 Project Beneficiaries and Collateral Benefits

This criterion involves the evaluation of who and what will benefit from a return of services, with preference for those user groups (natural resources and/or persons) originally harmed by injury to natural resources. This criterion also considers the degree to which a project will produce benefits to more than one resource and/or service.

The Greenway and Rocker projects benefit injured natural resources and persons originally harmed. The Watershed Land Acquisition, Antelope Creek, and revised East Deer Lodge Valley projects will, to varying degrees, primarily provide collateral benefits to multiple replacement natural resources (fish and wildlife), but will also benefit persons originally harmed via the recreational services they will provide. The Butte Water project will benefit persons originally harmed but will not benefit either injured or collateral resources.

The extent to which the projects provide benefits to more than one resource and/or service varies greatly based on the magnitude and type of project. The Greenway provides the greatest level of benefits, due to its scale and its ability to benefit multiple injured resources (fish and wildlife) and a large portion of the public originally harmed. The Watershed Land Acquisition will provide a variety of recreational opportunities over an extensive area close to Anaconda and will protect numerous replacement fish and wildlife resources through public ownership. The Butte Water project provides drinking water services to a large portion of the public impacted by the injury to the Butte bedrock aquifer. Rocker is a much smaller project compared to the above three, with benefits primarily to wildlife resources and service benefits of a lesser extent than the Greenway, Watershed Land Acquisition, and Butte Water projects. Compared to the above four projects, Antelope Creek provides the least extent of benefits to multiple resources and services because of its small size and its limited recreational opportunities. The extent of the benefits from the revised East Deer Lodge Valley project to multiple resources is not certain, but it appears that there will be at least some such benefits from the project.

#14 Public Support

This criterion assesses the level of public support based on information submitted to the State with the project applications, during the application review process, or during the public comment period.

The Greenway and Watershed Land Acquisition have broad support from numerous and varied entities and the greatest demonstrated support of all the projects based on information received for both this year's and last year's grant applications for these projects. Although all the letters for the Greenway support the overall concept of a greenway along the Silver Bow Creek corridor, some commentators disagree with the chosen level of development, preferring alternatives with less trail development and access features. The East Deer Lodge Valley project as originally proposed had broad support from numerous and varied entities, but to a lesser extent than the Greenway and Watershed Land Acquisition projects. The revised project received additional support during the public comment period from four individuals, but also was opposed by one person that viewed the project as one that would derive insufficient public benefits.

The Rocker and Butte Water projects have moderate public support, with four letters of support and five public comments supporting the Rocker project and one letter of support and two public comments supporting the Butte Water project. The Antelope Creek

project has moderate support with five letters of support, but also received opposition from two persons because the project did not address mining impacts.

#15 Matching Funds

This criterion evaluates the extent to which a project entails cost sharing.

High amounts of matching funds have been secured for Antelope Creek (80%), and the revised East Deer Lodge Valley (66%) projects.

The Rocker project provides a reasonable match with 39% for the entire project. However, the UV disinfection and wetland components which focus on restoration rely on 100% Restoration funds. The Butte Water project has a reasonable match of 32%.

With regard to the 9,000 acres proposed for state ownership under the Watershed Land Acquisition, the matching funds are none to minimal. From the standpoint of the entire transaction, matching funds would be high (73%) if federal funds are secured.

The Greenway has no matching funds for this year's proposal. This analysis does not include the estimated costs to be saved through the coordination with remedy.

#16 Ecosystem Considerations, Coordination, and Integration

This criterion examines the relationship between the project and the overall resource conditions of the UCFRB by considering how a project coordinates with other ongoing or planned restoration, remediation, or other actions and how it fits within a broad ecosystem context. Planned restoration activities include, but are not limited to, the State's Restoration Determination Plan for sites still undergoing litigation.

The Antelope Creek, Greenway, Rocker, and Watershed Land Acquisition projects fit within a broad ecosystem perspective, are sequenced properly from a watershed management approach, and do not interfere with the State's Restoration Determination Plan. Of these, the Greenway and Rocker offer the added benefit of direct coordination with ongoing or planned response actions in the UCFRB, with the extent of coordination greatest for the Greenway project. The Watershed Land Acquisition also has the added benefit, from an ecosystem standpoint, of protecting significant headwaters of the Clark Fork River. The Antelope Creek project, though not directly coordinating with other response or restoration actions, may augment the results of such actions that occur further upstream in the UCFRB.

The revised East Deer Lodge Valley project may augment future response actions (see criterion #6) and will not interfere with the State's Restoration Determination Plan.

The Butte Water project, while it doesn't directly coordinate with other response or restoration actions, represents a viable replacement alternative the State identified in its Restoration Determination Plan.

#17 Normal Government Functions

As set forth in the *RPPC*, the State, through its restoration program, will not fund activities for which a governmental entity would normally be responsible or that would receive funding in the normal course of events. Restoration funds may be used to augment funds normally available to government agencies to perform a particular project if such cost sharing would result in implementation of a restoration project that would not otherwise occur through normal agency function.

The Antelope Creek, revised East Deer Lodge Valley, Greenway and Watershed Land Acquisition projects do not involve activities that a governmental entity is obligated by law to conduct or would normally conduct.

The Butte Water and Rocker projects augment normal agency function. While upgrading drinking water lines is normally a responsibility of local government, the funds needed by the Butte Water project are greater than typical community costs due to the pervasive groundwater contamination underlying the Butte area. The restoration components of the Rocker project (wetland system and disinfection system improvements) for which Restoration funding is sought do not entail typical wastewater system improvements. The applicant is also seeking funds for the other components of the project that are typically a normal function of government.

4.2.3 Stage 2 Land Acquisition Criteria

Three projects involve acquiring public lands or interest in public lands – the Greenway, Rocker, and Watershed Land Acquisition projects.

#18 Desirability of Public Ownership

This criterion assesses the benefits of public ownership or interest in land to restoration of injured natural resources or lost services. Acquisition projects that benefit injured natural resources or provide lost services are favored over those that do not. The benefits of public ownership are considered major for both the Greenway and Watershed Land Acquisition projects, given the substantial recreational services they offer in or near large communities in the UCFRB. Public ownership aspects of the Greenway will also benefit injured natural resources and provide lost fish and wildlife habitat services. The Watershed Land Acquisition offers protection of the headwaters of an important tributary to the Clark Fork River and offers high quality hunting, fishing, wildlife viewing and general recreational opportunities in close proximity to injured areas.

The Rocker project will provide for protection of remediated and restored areas of Silver Bow Creek and guaranteed public access for recreational opportunities such as wildlife viewing and hiking, but to a lesser degree than the Greenway and Watershed Land Acquisition projects. Since the NRDP considers the benefits to injured natural resources

and the services provided by this project from the creation of wetlands to be moderate, the benefits of public ownership are considered moderate.

#19 Habitat Protection

This criterion considers the value of the property to be acquired as habitat for wildlife and other terrestrial and aquatic biota. Factors considered include species diversity, relative availability of habitat nearby, and habitat quality. The Watershed Land Acquisition project offers protection of what is considered exceptional habitat. The Greenway and Rocker projects would offer protection of what is expected in the future to become good habitat.

#20 Spillover Benefits

The criterion examines whether and to what degree the acquired land or interest in land benefits either an injured area or, more generally, a larger surrounding uninjured area. The Greenway provides major benefits to an injured area. The purchase of land or easements covering approximately 116 acres of Silver Bow Creek's floodplain provides major benefits to injured natural resources through the restoration components and through the protection of restored areas by controlling public use. With the creation of 5 acres of wildlife habitat in or near the Silver Bow Creek floodplain, the Rocker project will also benefit injured resources, but to a lesser extent than the Greenway project.

The Watershed Land Acquisition provides major benefits to a larger surrounding uninjured area. This acquisition significantly increases the amount of land near Anaconda that can be managed for benefits to natural resources. Acquisition of winter range associated with the Garrity Mountain parcel would benefit the extensive area where elk and deer spend the remainder of the year. The project also has the potential to benefit the recovery of fish and wildlife populations in nearby injured areas in conjunction with other restoration actions.

#21 Access to Public Lands

The criterion evaluates to what extent access to public land is facilitated by the proposal. Projects that facilitate public access are considered favorable compared to those that do not. All three projects will facilitate access to public land. In comparing the extent of access facilitated by these projects, the Watershed Land Acquisition offers public access to a greater area than the Greenway and Rocker projects and the Greenway offers public access to a greater area than the Rocker project. Uncertainties remain regarding the legal and vehicular access to the Clear Creek parcels of the Watershed Land Acquisition project.

#22 Price

This criterion evaluates whether the proposed land, easements, or other property interests are being offered for sale at fair market value. The NRDP considers the price for the

Watershed Land Acquisition at \$50/acre below the appraised fair market value to be reasonable. The price for the Greenway parcels has not been finalized; therefore, the NRDP has recommended funding for this project be contingent upon NRDP review and approval of land acquisitions and appraisals. The price for the Rocker acreage is also uncertain, thus the NRDP recommends a similar contingency as that of the Greenway project.

4.2.4 Research and Monitoring Criteria

None of the six projects have a major research and monitoring component in terms of the project costs; therefore, these criteria were not evaluated. The Greenway and Antelope Creek projects have monitoring components. The revised East Deer Lodge Valley has a data collection component, the details of which are to be worked out between the NRDP and the Watershed Restoration Coalition during project implementation and is subject of NRDP approval.

4.3 NRDP Project Ranking

The NRDP project ranking is based on the comparative analysis provided in the previous subsection of how well the projects meet the *RPPC* criteria. As noted previously, the *RPPC* does not rank criteria in terms of importance, noting that “each criterion as applied to individual projects will vary in its importance depending on the nature of the project and unique issues it raises.” A project does not need to meet all of Stage 1 and Stage 2 criteria in order to be considered worth funding. A project may rank poorly compared to others for a particular criterion, but that criterion may be inapplicable or relatively unimportant for that type of project. Or, the merits of a project based on some number of criteria may significantly outweigh its deficiencies noted for a particular criterion or multiple criteria.

Based on the NRDP’s assessment of how the projects compared for the Stage 1 and 2 *RPPC* criteria, and focusing on the project’s anticipated benefits to the restoration or replacement of injured resources and or/lost services, the NRDP ranked the six projects in the following order of preference reflected in Table 2.

Rank	Project
1	Greenway
2	Watershed Land Acquisition
3	Butte Water
4	Antelope Creek
5	Revised East Deer Lodge Valley
6	Rocker

Of the six projects, the Greenway project best meets the majority of the Stage 1 and Stage 2 criteria and provides the greatest level of benefits to injured natural resources and persons originally harmed. The project ranks above the other projects for the many criteria that give preference to work in injured areas, such as project location, coordination with remedy, reduction of recovery period, actual restoration of injured resources and project beneficiaries/collateral benefits. The planned coordination with remedy will address the uncertainties associated with the feasibility of the aquatic habitat enhancements and the recommended budget cuts will enhance the project's cost effectiveness. Although the project does not have matching funds, the lower ranking for this criterion was considered secondary to the project's higher ranking for most of the Stage 1 and 2 criteria that is attributable to the magnitude of the restoration and recreational service benefits the project will achieve in comparison to other projects.

Of the six projects, the Watershed Land Acquisition provides the greatest benefits to replacement fish and wildlife habitat services and associated public recreational services. It ranks above the Greenway for the land acquisition criteria given the greater acreage of public access it provides and the protection of significant fish and wildlife resources it provides (e.g. critical winter habitat for big game, critical native trout spawning areas). The Watershed Land Acquisition also has a greater certainty than the Greenway in terms of its feasibility and cost-effectiveness. As a replacement project, however, it ranks below the Greenway for the many criteria that give preference to work directly on injured resources. The Greenway's greater restoration benefits and more extensive recreational benefits resulted in NRDP's ranking of the Greenway above the Watershed Land Acquisition.

The Butte Water project ranks high compared to other projects based on its high degree of feasibility and cost-effectiveness. It ranks lower than most of the other projects for the many criteria that focus on resource benefits (e.g. natural recovery potential, resources of special interest, actual restoration, and ecological considerations). However, the NRDP did not consider the project to be deficient based on the lower rankings for these criteria because the project provides services linked to an injured resource that cannot be restored. The project is comparable to the Watershed Land Acquisition in terms of the magnitude of service benefits it provides to the public originally harmed. The NRDP ranked it below the Watershed Land Acquisition given the Watershed Land Acquisition's greater resource benefits.

The Antelope Creek project has the highest matching funds and lowest costs of all the projects, and a favorable cost/benefit relationship. However, in considering the magnitude of its benefits, the NRDP ranked the Antelope Creek project below the Greenway, Watershed Land Acquisition, and Butte Water projects given the greater benefits these other projects will provide to injured resources and services (Greenway) or replacement resources and services (Watershed Land Acquisition and Butte Water).

The NRDP ranked the revised East Deer Lodge Valley project below the Greenway, Watershed Land Acquisition, and Butte Water in terms of the magnitude of benefits to public natural resources and the public's use and enjoyment those resources. While the

project may provide greater benefits to replacement resources than the Antelope Creek project since it covers a greater area, the NRDP ranked it below the Antelope Creek project given the greater certainty of benefits from the Antelope Creek project. The Antelope Creek grant application provided better information on the proposed activities and their link to degraded resource conditions than the East Deer Lodge Valley project, and consequently provided more certainty as to the benefits to public natural resources and services.

Although the Rocker project is recommended for funding (see Section 5.0), the NRDP ranked the project lower than the other five projects primarily because of the NRDP's original determination that the wetlands would not be cost effective and the negative cost/benefit relationship this project has compared to the other projects. The Rocker project will provide greater benefit to injured resources than the four replacement projects (Watershed Land Acquisition, Butte Water, Antelope Creek, and Revised East Deer Lodge). In the NRDP's analysis, however, this favorable ranking for the criteria specific to injured resources did not outweigh the project's deficiencies based on the cost-effectiveness and cost: benefit criteria.

SECTION 5.0 FINAL FUNDING RECOMMENDATIONS

This section provides the Trustee Restoration Council's final funding recommendations and the funding recommendations of the NRDP and the Advisory Council. The projects are listed in this section as they were ranked by the NRDP (Subsection 4.3). In determining its funding recommendations, the Trustee Restoration Council did not rank the projects.

Silver Bow Creek Greenway

The Silver Bow Creek Greenway project is recommended for funding of \$1,206,755 of the requested \$1,426,755. In the *Pre-Draft Work Plan*, the NRDP recommended this project be funded for this reduced amount. The Advisory Council and Trustee Restoration Council concurred with this recommendation.

This project will develop a recreational trail corridor and restore aquatic and riparian resources along miles four and five of Silver Bow Creek. Two major aspects of this project that support its funding are: 1) the benefits of the restoration measures that will be optimized via coordination with remedy; and 2) the substantial recreational benefits to a large populace that has been unable to use and enjoy these public resources. Organic matter placement, plantings of floodplain trees and shrubs, and aquatic habitat enhancements will accelerate recovery of injured resources. Controlling public use in the corridor will assist in protecting restoration and remedial efforts. The project's three main components--ecological improvements, trail and access feature development, and land acquisition--are reasonably feasible and likely to be cost effective. The proposed paved, 10' wide trail design is warranted and cost-effective given its proximity to the Butte and Rocker urban area and the trail's intended multiple uses. The proposal has strong public support but no matching funds.

The final funding recommendation incorporates specific NRDP funding reductions totaling \$220,000 and other NRDP recommendations provided in the Project Criteria Narrative (Appendix C). The proposed budget for the comprehensive land use effort was reduced by \$180,000 due to insufficient information on this effort. While an effort of this sort is needed, \$20,000 is recommended to cover planning needs for Subarea 1 and additional planning needs can be considered in future requests. An additional \$40,000 reduction stems from a reduction in the proposed asphalt thickness of the paved trail from 4 inches to 2 inches. The \$80,000 contingency in the budget that is incorrectly derived from questionable remedy/restoration cost savings is earmarked for any additional stream habitat restoration determined to be administratively and technically feasible and cost-effective based on further evaluation during the coordinated remedial/restoration design efforts. Recommendations for funding are also contingent upon NRDP review and approval of land acquisitions and appraisals.

Watershed Land Acquisition

The Watershed Land Acquisition project is recommended for funding at \$2,067,673. This amount is \$1973.00 higher than the requested amount of \$2,065,700 due to final calculation of the total acreage for the Phase II acquisition. In the *Pre-Draft Work Plan*, the NRDP recommended this project be funded at the requested amount. The Advisory Council and Trustee Restoration Council concurred with this recommendation.

The Watershed Land Acquisition will provide public access to high quality fish and wildlife habitat and recreational lands, protect these areas from potentially detrimental development, and maintain and enhance natural resources through conservation-focused public management of those resources. The strong aspects of the proposed State acquisition are the exceptional big game winter habitat on the Garrity Mountain parcel, the protection of municipal watershed lands, and the substantial recreational services the project offers near Anaconda. With 65% of the State acquisition lands purchased, it is important to complete this transaction to obtain the full benefits. The acquisition of the Phase 2 lands will complete public access to the Garrity parcels, add additional security for wildlife around core winter range on Garrity Mountain, and protect lands that drain into the Hearst Lake/Fifer Gulch municipal watershed. The project has substantial and broad public support but no matching funds. The project is highly feasible given the major land transaction work completed for the Phase 1 purchase.

The timber harvest activities will have negative environmental impacts, primarily to wildlife and visual quality, until forest regeneration occurs. The proposal offers conditions that provide greater protection to environmental resources than would occur if the landowner were to harvest in the absence of these conditions. Considering its long-term benefits, the project is worth funding.

Butte Drinking Water Infrastructure Phase 1

The Butte Drinking Water Infrastructure Phase 1 is recommended for funding at the requested amount of \$1,165,794. In the *Pre-Draft Work Plan*, the NRDP recommended this project be funded for this amount. The Advisory Council and Trustee Restoration Council concurred with this recommendation.

Restoration of Butte's bedrock aquifer that is contaminated throughout a six-mile area of the city is infeasible. By fixing leaking and corroded water lines, this proposal will enhance the water supply from an uncontaminated source. This project will aid Butte-Silver Bow County in replacing lost services to thousands of property owners and other members of the public in Butte that could utilize the aquifer if it was not injured. This project is cost-effective and highly feasible due to the successful water main replacement that has been ongoing in Butte since 1992 and has reasonable matching funds of 32%.

Antelope and Wood Creek Riparian Management Project

The Antelope and Wood Creek Riparian Management Project is recommended for funding at the requested amount of \$10,000. In the *Pre-Draft Work Plan*, the NRDP recommended this project be funded for this amount. The Advisory Council and Trustee Restoration Council concurred with this recommendation.

By revegetating the banks along the degraded reaches of these Creeks, the Antelope Creek project will improve water quality, aquatic and riparian habitat, and trout populations in these tributaries. It may contribute to improvement of the injured resources of the Clark Fork River and enhance recreational opportunities to a limited degree. The project is reasonably feasible and cost-effective, and likely to achieve its objectives. It has moderate public support and high matching funds (80%). The project meets all the evaluation criteria well except for those that give preferences to actual work in injured areas. The project will provide significant benefits to replacement aquatic and riparian natural resources at a low cost with high matching funds, thus giving it a very favorable benefit: cost relationship.

Revised East Deer Lodge Valley Watershed Project

The revised East Deer Lodge Valley project is recommended for funding of \$135,941. In the *Pre-Draft Work Plan*, the NRDP recommended that this project as originally proposed not be funded due to significant uncertainties regarding the extent to which the project will replace injured natural resources and lost services. The Advisory Council concurred with this recommendation. The Trustee Restoration Council deferred taking action on the original proposal and instead directed the NRDP and applicant to work together on a compromise proposal that focused on first year projects with time-critical matching funds. The NRDP and applicant reached agreement on the revised proposal summarized in Appendix C. The Advisory Council and Trustee Restoration Council concurred with the agreement and recommended the revised project for funding.

This project seeks to improve water quality and fisheries, riparian and upland wildlife habitat, and recreational opportunities in the East Deer Lodge Valley through agricultural best management practices such as riparian fencing and streambank revegetation, development of off-stream watering facilities, and grazing management. Although there is some uncertainty as to the extent to which these best management practices, as implemented through the 9 subprojects, would achieve these goals, these uncertainties can be resolved through review and oversight of project design and implementation. The additional data collection and resource assessment activities will help identify resource problems in the project area and help target future project activities to maximize resource benefits. The project is a collaborative effort of local landowners and numerous agencies that has broad public support and significant matching funds of 49%. As a pilot project, it will help determine whether similar projects will be recommended for funding in the future, which is an important result given the extensive agricultural lands in the UCFRB.

Rocker Water Reclamation and Habitat Enhancement Project

The Rocker Water Reclamation and Habitat Enhancement Project is recommended for funding at the requested amount of \$719,566. In the *Pre-Draft Work Plan*, the NRDP did not recommend this project for funding. The Advisory Council and Trustee Restoration Council, however, recommended it for funding. The recommendation for the funding is conditional on the applicant being able to execute a reasonably priced land acquisition for the proposed project acreage.

Based on evaluation of all the Stage 1 and Stage 2 criteria as summarized in Appendix C, the NRDP judged the Rocker project as too expensive for the benefits that would be realized to water quality and wildlife habitat. In NRDP's analysis, the benefits of nutrient removal at this time, if any, are comparatively minor, given the small contribution of the Rocker wastewater discharge to the total nutrient loads of Silver Bow Creek. Benefits to wildlife habitat and wildlife are, in the NRDP's view, moderate, but a similar level of benefit could be achieved with other designs at other locations along the creek at a significantly lower price.

As recognized in the Project Criteria Narrative, meritorious aspects of this project include: 1) that it is an innovative approach that attempts to accomplish multiple benefits to multiple resources; 2) that it incorporates synergistic technology and "natural" processes to accomplish these objectives; and, 3) that it attempts to address basin-wide resource problems in a voluntary manner. Some of these positive aspects of the project were cited as reasons why Advisory Council and Trustee Restoration Council members supported funding the project. In addition, some members of both Councils indicated they gave greater weight to the potential benefits of nutrient reduction than the NRDP did. The NRDP's analysis was based on water quality conditions that exist in Silver Bow Creek at this time; project supporters focused on anticipated future conditions.

Table 3 summarizes the Trustee Restoration Council's final funding recommendations.

Table 3. Trustee Restoration Council Final Funding Recommendations		
Project	Requested Restoration Funds	Recommended Restoration Funds
Greenway	\$ 1,426,755	\$ 1,206,755
Watershed Land Acquisition	\$ 2,065,700	\$ 2,067,673
Butte Water	\$ 1,165,795	\$ 1,165,795
Antelope Creek	\$ 10,000	\$ 10,000
East Deer Lodge Valley	\$ 627,344	\$ 135,941
Rocker	\$ 719,566	\$ 719,566
TOTAL	\$ 6,015,160	\$ 5,305,730

The following funding conditions that apply to these recommended projects and amounts are further detailed the Project Criteria Narratives contained in Appendix C.

1. For all projects except the Watershed Land Acquisition: Funding is contingent on the NRDP's approval of final designs for the various elements of these proposals.
2. For the Silver Bow Creek Greenway project: Funding is contingent on:
 - a. coordination with and approval by the NRDP of all land acquisition activities, including NRDP review and approval of all appraisals; and
 - b. earmarking of the \$80,000 budget contingency for aquatic enhancements for any additional stream habitat restoration determined to be administratively and technically feasible and cost-effective based on further evaluation during the coordinated remedial/restoration design efforts.
3. For the Watershed Land Acquisition Project: Funding is contingent on Rocky Mountain Elk Foundation's payment of \$50,000 in a stewardship fund for MFWP management of the state acquisition lands; a negotiated price of \$650/acre; and NRDP approval of the land purchase agreement and condition of title of the land being acquired.
4. For the East Deer Lodge Valley Project: Funding is contingent on the terms negotiated between the applicant and the NRDP and reflected in the "General Principles of Agreement" provided in Appendix C.
5. For the Rocker Project: Funding is contingent on:
 - a. coordination with and approval by the NRDP of all land acquisition activities, including NRDP review and approval of all appraisals; and
 - b. the applicant being able to execute a land acquisition for the proposed project acreage at a price at or below fair market value and adequately resolving water rights issues.

APPENDIX A

PROJECT ABSTRACTS

YEAR 2001 GRANT PROPOSAL ABSTRACTS

*The following are abstracts submitted to the Natural Resource Damage Program for Year 2001 Restoration Grant funds. **These abstracts are verbatim as submitted by applicants.***

Applicant Name: Montana Council of Trout Unlimited

Project Title: Antelope and Wood Creek Riparian Management Project

Project Description and Benefits:

The Antelope and Wood Creek Riparian Management Project will replace the equivalent of injured natural resources in the Upper Clark Fork River Basin by improving riparian habitat conditions, stream stability and westslope cutthroat trout habitat on two overgrazed stream reaches. Both Antelope and Wood Creeks are tributaries to the Clark Fork River. The entire length of Antelope Creek was historically over-grazed, contributing to channel instability, excessive sediment and nutrient loading, and degraded fisheries habitat. The lower reaches of Wood Creek have been overgrazed while the upper reaches remain in fair condition. Antelope and Wood Creeks contain genetically pure westslope cutthroat trout and sampling found only native species assemblages in both drainages. The landowner allows public fishing access on both creeks.

The riparian management project has two phases: 1.) develop a riparian management system to protect and enhance the overgrazed areas; and 2.) revegetate the riparian areas after livestock exclusion. Phase I, which includes installation of riparian fencing along the creeks and preparation of a grazing management plan, was finished in 2000 through a partnership among Montana Fish, Wildlife and Parks (FWP), USDA Natural Resources Conservation Service (NRCS) and the landowner. Phase II, revegetation, will take place in Spring of 2002 through the cooperation of Montana Trout Unlimited, FWP, NRCS, Montana Power Company and the landowner. Montana TU is involved with Phase II of the project because of an interest in native fish conservation, past experience with similar projects and its ability to generate high-quality volunteer labor. The project fits TU's mission to conserve, protect and restore Montana's coldwater fisheries and their watersheds.

This application seeks funding to complete the revegetation phase of the project. Revegetation will greatly expedite the stream recovery process. The restored riparian conditions of Antelope and Wood Creek will improve spawning, rearing and overwintering salmonid habitat, leading to an increase in native trout populations. The westslope cutthroat population enhanced by this project can help replace those that have been injured upstream, including in areas that have been subject to settlement of NRD claims and EPA Superfund decisions.

Applicant Name: Butte-Silver Bow Local Government

Project Title: Drinking Water Infrastructure Replacement

Project Description and Benefits:

Due to the adverse impacts of mining from the Berkeley Pit and the underground mines, the groundwater aquifers in portions of Butte can never be used for drinking. The NRD assessment estimates for lost groundwater resources on the Butte Hill alone exceed 5,000 gallons per minute – about the average amount of water used by all Butte citizens on a typical day (except during sprinkling season). Consequently, to protect human health, use of existing groundwater wells is limited and there are prohibitions on new wells in certain areas.

At the same time, Butte-Silver Bow ratepayers have invested over \$40 million in the past decade to restore and replace its drinking water system – a complex infrastructure to import water from across the Continental Divide and from the mountain creeks surrounding Butte. These investments were unconditional and mandatory: There were no alternative sources to develop since the local groundwater is permanently damaged, and neglected improvements by the previous owner had led to federal orders to upgrade the system.

More work is needed. Butte-Silver Bow proposes a fifteen-year program to make essential improvements to the system, particularly the need to replace deteriorated (e.g. leaking, corroded, undersized) distribution lines in the neighborhoods where groundwater use is restricted. The proposed 15-year project would result in a coordinated, annual replacement program to respond to precise areas where deficiencies are creating the most problems.

As Phase One of the project, Butte-Silver Bow requests \$1.166 million in NRD funds in 2001, and pledges \$541,000 in matching funds to replace approximately 17,000 feet of distribution lines. Over 15 years, up to 255,000 feet of distribution pipes would be replaced to provide better service to those citizens who cannot use the groundwater. This long-term investment will fulfill essential priorities and also achieve effective coordination with applicable NRDP requirements.

Applicant Name: Watershed Restoration Coalition of the Upper Clark Fork

Applicant Title: East Deer Lodge Valley Watershed Project

Project Description and Benefits:

The East Deer Lodge Valley Watershed Project is a critical replacement project proposed by the Watershed Restoration Coalition of the Upper Clark Fork (WRC). The 121,000-acre project area includes 10 subwatersheds in five HUCs that flow into the main stem of the Clark Fork River. The area supports important fisheries, a host of recreation opportunities, a wide variety of wildlife, a large agricultural economic base, and rural living for area residents. Based on acreage, over 80 percent of the landowners and managers are participating on this project. Baseline data for multiple indicators suggest that nearly all of the riparian corridors are non-functional to functional at risk, resulting in thermal modifications, loss of habitat, fishery degradation, and other impacts. In addition, over 50,000 acres of native range are in poor to fair condition according to a

recent field survey. This project takes important steps at correcting these natural resource impacts by applying much needed BMPs and prescribed practices in the project area. The implementation goals of the project are to improve riparian habitat and fisheries with 5.4 miles of riparian forest buffer planting, 16.3 miles of riparian fencing and grazing management, 18.3 miles of water pipeline connected to off-stream water supplies, placement of 41 off-stream stock water tanks in upland areas, installation of 9 stock water wells, and installation of 3 water gaps. Work in riparian zones also includes restoring 532 acres of wetlands and setting up permanent easements for the areas. For uplands and wildlife enhancement, this project will establish conservation plans on 55,855 acres with prescribed grazing, installation of 17 miles of cross fencing for grazing rotation, complete critical planting on 452 acres, and install about 1.5 miles of shelterbelts for improved songbird and wildlife habitat.

Benefits include: 1) water quality improvement through reducing sedimentation by 15 percent in all tributaries, reducing nutrient loading with fewer cattle in the flood plain, and removing 30,000 cubic yards of metal-contaminated sediment impacting the headwaters of Cottonwood Creek, 2) improved fisheries on about 53 miles of small stream tributaries, 3) improved recreation opportunities through future cooperative agreements, and 4) improved wildlife habitat. This project establishes a crucial link between landowners taking on responsibility for application of BMPs, the WRC providing local leadership, the NRCS providing implementation staff, and funding needed to implement natural resource improvements. This project is designed as a replacement project; however, indirect restoration benefits may be realized in the Clark Fork River through improved water quality and fisheries. Goals of this project will be achieved through a cooperative partnership between 44 landowners, state and federal land managers, state and federal agency personnel, and stakeholders. The NRDP provides 36 percent of the \$1.76 million dollar budget resulting in an excellent cost/benefit ratio.

Applicant Name: County Water and Sewer District of Rocker

Project Title: Rocker Water Reclamation and Habitat Enhancement Project

Project Description and Benefits:

The project entails the construction of four wetlands ponds and an ultraviolet disinfection system to accept treated wastewater from the community of Rocker wastewater treatment plant. Two constructed wetlands, located above the Silver Bow Creek floodplain, will include lined impoundments planted with indigenous plants accepting disinfected wastewater effluent. Following these two cells, water will flow to two natural wetlands built within the groundwater table, in proximity to Silver Bow Creek. Wastewater will flow from these cells into Silver Bow Creek or seep into the adjacent recharge zone. Local surface drainage will be diverted to the lower two wetland cells, to allow treatment of storm runoff which would normally enter the creek directly. The wetlands will be effective in removing sediments (and metals associated with those sediments) which are carried in the storm drainage. The project construction will be coordinated with the Streamside Tailings Removal Project as well as the Silver Bow Greenway Project in a manner to optimize benefits of all projects and reduce cost. The Rocker project will also include the use of trails, viewing areas, islands and peninsulas to maximize the recreational opportunities of an area that will attract wildlife, particularly waterfowl. The project includes the construction of an ultraviolet disinfection system to

replace the existing gas chlorination system which, by location, cannot be used for the proposed wetlands cells. Additionally, the District will be upgrading the existing wastewater treatment plant and raw sewage lift station as a component of the overall project.

The project will provide multiple benefits including the following:

- Creation and restoration of wetlands habitat
- Creation of new riparian zones
- Improved water quality in Silver Bow Creek
- Nitrogen and phosphorus reduction
- Reduction of toxic ammonia compounds
- Recreational access to streamside habitat
- Recreational opportunities including hiking and bird watching
- Educational and interpretive opportunities regarding wastewater treatment through a “natural” reclamation system
- Cost reduction in Streamside Tailings Removal Project
- Treatment of local stormwater runoff
- Creation of new jobs through provision of community infrastructure

The project is directly consistent with the Streamside Tailings Operable Unit Record of Decision (Page 113) which, in the Decision Summary, identifies the use of wetlands to provide treatment for wastewater and reduction of storm water. Furthermore the ROD Summary identifies community improvement actions which develop the Silver Bow Creek recreational corridor land uses, an action also addressed by the proposed project.

Applicant Name: Greenway Service District

Project Title: Silver Bow Creek Greenway

Project Description and Benefits:

Funding to develop and construct restoration improvements within the Silver Bow Creek Corridor over the same period established for remedial work, with restoration design submittals and expenditures made commensurate with progress and workplans for remedial action.

The proposal presents a discussion of the Greenway project and a detailed funding request for 1) restoration work in Reach D and E of Subarea 1 of the Streamside Tailings Operable Unit (SSTOU); and 2) a comprehensive plan for the land/easement acquisition requirements for the entire Silver Bow Creek Corridor.

The project is directly consistent with the stipulations of the SSTOU’s Record of Decision and is based on the applicant’s preliminary design plan to develop a sound strategy for restoration enhancements, protection and beneficial use of the Silver Bow Creek Corridor.

The project will restore and rehabilitate natural resources that suffered severe and widespread injury as a result of area mining and begin to replace those lost or impacted services within the corridor and assure that these restorative components are protected through management of the Silver Bow Creek Greenway, by:

- Restoring aquatic, riparian/wetland and uplands ecosystems;
- Acquiring and providing public access to a passive recreational corridor; and
- Implementing remediation and restoration activities as one project.

Tasks include:

- Design and construct in-stream structures and streambank enhancements to promote the restoration of a self-sustaining fishery;
- Amend soils to accelerate growth, vigor and stability of vegetation;
- Plant additional varieties and quantities of native plants to enhance ecosystem diversity;
- Introduce upper story plantings to improve aquatic and terrestrial ecosystems;
- Develop controlled public access to protect the remediated and restored landscape and manage passive recreational activities.

The project is predicated on the firm belief that coordination of remedial and restoration activities will lead to lower project costs and considerable savings of settlement proceeds.

Applicant Name: Rocky Mountain Elk Foundation

Project Title: Watershed Land Acquisition

Project Description and Benefits:

The Rocky Mountain Elk Foundation (RMEF) holds a purchase option to acquire approximately 32,500 acres of land in the Upper Clark Fork River Basin from the YT Timber Company. The property is located between Anaconda, Mt., and Georgetown Lake and makes up the bulk of the Warm Springs Creek drainage not already in public ownership. The property has high public values including habitat for native fish (bull trout and westslope cutthroat trout), critical big game winter range, alpine lakes and wetlands. RMEF applied for a \$6.075 million grant from the Upper Clark Fork River Basin (UCFRB) Restoration Fund in April of 2000 to acquire nearly 9,000 acres of the property for the State of Montana. The UCFRB Advisory Council and initially, the NRD staff, recommended funding the entire \$6.075 million, however, based on financial constraints, the Trustee Council recommended, and the Trustee awarded, \$3.764 million in December, 2000. RMEF conveyed 5,790 acres to the State of Montana in February, 2001. RMEF is now applying for \$2.066 million from the UCFRB to acquire approximately 3,178 acres and complete the State portion of the acquisition. The remaining 23,500 acres is targeted for purchase by the U.S. Forest Service (U.S.F.S.) using Federal Land and Water Conservation Fund (LWCF) dollars. Five million dollars has been appropriated from the LWCF program for 2001 and will be available in the spring of 2001. The State portion of the acquisition is located in close proximity (less than five miles) to the damaged Anaconda Uplands and Opportunity Ponds. Acquisition of the State portion of the property will replace soil, vegetation and wildlife habitat related services lost in the Upper Clark Fork Basin including services lost in the Anaconda Uplands from smelter emissions and lost in and beneath the Opportunity Ponds from hazardous materials. Acquisition of the Watershed Property by public entities will benefit water quality in Warm Springs Creek, the major tributary of the Upper Clark Fork River and aid in the restoration of the river. Habitat for the endangered bull trout and the westslope cutthroat trout and spawning areas for brown trout will be enhanced or

maintained with the Watershed Land Acquisition. A critical linkage for wildlife between the Flint Range and the Pintlar Range will also be protected from development. The Watershed Land Acquisition project is a partnership between the RMEF, the State of Montana and the U.S.F.S. The first phase of the purchase option was exercised in December of 2000 which required RMEF to borrow \$2 million until the UCFRB Restoration Fund dollars became available and transactional details were worked out. Funding of the acquisition of the remaining land targeted for state ownership will be crucial to exercising the next phase of the option.

APPENDIX B

PROJECT MAPS

**For copies of project maps,
Please contact the
Natural Resource Damage Program
Department of Justice
P. O. Box 201425
Helena, MT 59601**

(406) 444-0205

APPENDIX C

PROJECT CRITERIA NARRATIVES

Montana Council of Trout Unlimited – Antelope and Wood Creek Riparian Management Project

Project Summary

This project involves the rehabilitation of Antelope Creek and its tributary, Wood Creek. The project would improve riparian habitat conditions, stream channel stability, and westslope cutthroat trout habitat. These creeks contain genetically pure populations of westslope cutthroat trout. Phase I, which was completed in 2000, involved installation of riparian fencing along the lower 2.7 miles of Antelope Creek and the lower 2.3 miles of Wood Creek, and development of a grazing management plan. Phase II involves the revegetation of the same reaches with woody riparian species. Of the total Phase II cost of \$49,160, the amount requested from the Restoration fund is \$10,000, which would be used for revegetation design and plantings along 2.5 miles of lower Antelope Creek and 0.5 miles of lower Wood Creek.

Stage 1 Criteria

1. Technical Feasibility – Reasonably Feasible

The proposed stream revegetation work is a straightforward method of improving riparian conditions and aquatic habitat for fish. Plantings will involve cuttings and containerized rooted plant stock of various native species such as willow, dogwood, rose, chokecherry, snowberry, alder and cottonwood. Revegetation in the lower reaches of Antelope and Wood Creeks will address areas devoid of woody vegetation. Revegetation in the upper reaches will concentrate on increasing age class diversity in the woody vegetation community. Species will be planted to their appropriate streamside habitats.

Although revegetation is a commonly used approach to improving riparian habitat quality, there can be uncertainties associated with the success of these kinds of projects. These include selecting appropriate species for the conditions of the site (soils, hydrology) to ensure short-term and long-term survival, revegetating under favorable conditions to ensure plant survival, and reducing competition from weeds. These uncertainties are largely addressed by: following Natural Resource Conservation Service (NRCS) guidance for riparian revegetation work (Riparian Forest Buffer, Code 391); selection of an experienced, qualified contractor to perform the work; performance guarantees included in the contract for the work to ensure acceptable plant survival; planting during the wetter and cooler spring months; and the NRCS contractual requirements of the landowner to control grazing and exclude livestock from the riparian area and to control weeds.

This project is viable as a stand-alone project. Upstream reaches of both Antelope and Wood Creeks are in fair to good condition, based on visual observations by a

Montana Fish, Wildlife and Parks (MFWP) fisheries biologist, and do not present a threat that would compromise the intended results of this project.

The greatest uncertainty about this project is problems posed by severely eroding streambanks on Antelope Creek. The applicant does not propose to revegetate the faces of these eroding banks because it would be difficult reestablishing vegetation due to their inherent erosiveness and instability. Planting will occur at the toe of these banks to increase their stability and reduce movement of eroding bank sediments to the stream channel by creating a vegetated filter strip. It is expected that once these banks are stabilized, vegetation will reestablish naturally longer-term on the eroding faces.

Some uncertainty exists about the permanence of the benefits in the long-term. The NRCS contract requires the landowner to comply with grazing management and project maintenance for 15 years or else return grant funds. If the landowner sells during that time period, the landowner must also return grant monies to the government unless the subsequent landowner assumes all contract obligations. Similar repayment requirements can be included in a NRDP grant agreement. It is possible that, after 15 years, a landowner could undertake activities, such as increased grazing, which would undo some or all of the benefits gained by this project. This is an uncertainty quite common to stream restoration projects on private land. However, stream permitting requirements, such as 310 permits, reduce the likelihood of significant adverse impacts from future activities.

Despite these uncertainties, this project is likely to achieve its objectives and is therefore characterized as reasonably feasible. The current resource condition and underlying causes of the problem are defined, the desired future condition is described, and a detailed project proposal is provided that indicates how the problem will be addressed and the project's effectiveness will be monitored.

2. Relationship of Expected Costs to Expected Benefits – Net Benefits

Costs are presented in the project summary. Numerous benefits will or are anticipated to result from this project to the natural resources of Antelope and Wood Creeks:

- enhanced trout habitat and increased trout populations in these tributaries, with possible positive effects on Clark Fork River trout populations;
- enhanced health of riparian and floodplain vegetation;
- enhanced or increased wildlife habitat and associated wildlife; and

- improved water quality, particularly reduced sediment loading and increased water quantity.

The project will also result in enhanced recreational opportunities such as fishing and wildlife viewing. The significance of the recreational benefits depends on the recreational attributes of the fishery and the amount of public access to the Antelope and Wood Creek drainages. Although public access is not guaranteed by this project, the landowner has historically allowed use by permission. Access will also be addressed as part of the grant application to MFWP's Future Fisheries Program. Even with more certainty of public access, given their small size, these creeks are not considered destination fisheries. Thus the recreational benefit is considered minimal.

Given the project's significant matching funds (80%) and because this project addresses many resources and services that will likely improve significantly in a relatively short time frame (e.g., several years for riparian vegetation), the NRDP considers the benefits of this project to outweigh its costs. With greater recreational attributes, the project benefits would significantly outweigh its costs.

3. Cost-Effectiveness – Likely Cost Effective

The applicant discusses the "No-Action" alternative, which would be to let the impacted areas revegetate naturally over time. This is a viable alternative, but would likely require decades for vegetation to mature, and full recovery might require a much longer time. In fact, the loss of seed and recruitment sources for new willows might make full recovery virtually impossible. During the time natural recovery would occur, bank erosion and sedimentation of the streambed would continue to adversely impact trout populations.

Another alternative discussed by the applicant is to decrease the planting density and number of plantings. However, this would not meet NRCS specifications and would jeopardize NRCS funding of a portion of the project. This would also lengthen the time for recovery of the riparian area.

One alternative not discussed by the applicant would be to mechanically reshape or reconstruct some of the severely eroding streambanks. Because of the steepness and erosivity of these banks, the applicant proposes to let these banks revegetate naturally over time. Mechanical work on banks would substantially increase the cost of the project and would not be as cost-effective as the proposed alternative. Another alternative would be the use of a bio-engineered fabric on the bank faces, together with some revegetation, to control erosion. Again, like mechanical reshaping of the streambanks, this would not be as cost-effective as the proposed project. Plantings at the toes of these banks, as proposed in this project, will help control the bank cutting and slumping, and will create a buffer to reduce movement of bank sediments to the stream channel while allowing the banks to revegetate naturally over time.

Based on this analysis and that provided by the applicant, this project is likely cost-effective in terms of rehabilitating these stream reaches. From a broader perspective, it is unknown whether a similar project on a different stream would accomplish greater benefits.

4. Environmental Impacts – No Significant Adverse Impacts

Because this project involves simple hand planting of cuttings and containerized plants, there would be no adverse long-term impacts. Short-term impacts would include disturbance of some existing soils and vegetation, which will be planted with new stock or reseeded to reduce the risk of erosion and weed invasion. Another short-term impact will be increased vehicle traffic in the area during the planting period of approximately 24 days. Given that there is only one part-time resident within several miles of the site, the temporary increase in traffic would not be burdensome. A road in the Antelope and Wood Creeks drainages already exists.

5. Human Health and Safety Impacts – No Significant Adverse Impacts

Short-term noise and dust impacts due to increased vehicular traffic should not be significant due to the relative seclusion of the site and the fact that there is only one part-time resident within several miles of the site.

6. Results of Superfund Response Actions – Positive Coordination

Superfund response actions will not occur in the proposed project area on Antelope and Wood Creeks. Available information on potential response actions for the Clark Fork River Operable Unit of the Milltown Reservoir Superfund site indicate response actions will not occur on the mainstem of the Clark Fork River or near its confluence with Antelope Creek. The project may augment aquatic resource benefits of upstream response actions.

7. Recovery Period and Potential for Natural Recovery – No Effect on Recovery Period

This project is a “replacement” project, in that the focus is on enhancing the aquatic and riparian resources of Antelope Creek and Wood Creek. The value of the Antelope Creek and Wood Creek fisheries is primarily as a genetic resource for native trout recruitment through out-migration to the Clark Fork River. It is unknown whether trout from the Clark Fork River spawn in these streams. The Interstate-90 culverts may be fish barriers; however, culvert velocities have not been evaluated. In conjunction with efforts to improve water quality and aquatic habitat in the Clark Fork River, the protection and enhancement of Antelope Creek and Wood Creek can benefit the potential for out-migration of native westslope cutthroat trout populations to the Clark Fork River. The project may enhance water quality and trout populations in the Clark Fork River to a limited degree. However, given the magnitude of the injuries to

aquatic resources in the Clark Fork River, it is not likely that this project alone would affect the recovery period of these resources.

8. Applicable Policies, Rules and Laws – Consistent/Sufficient Information Provided

The NRDP has determined that this project is consistent with applicable policies, rules and laws. The applicant has coordinated this project with other interested parties, including NRCS, MFWP, and the Granite Conservation District.

9. Resources of Special Interest to the Tribes and DOI – Beneficial Impact

Improved water quality in Antelope Creek may improve water quality in the Clark Fork River, which could be beneficial to bull trout recovery in the Clark Fork River. The DOI supports this project. The Confederated Salish and Kootenai Tribes have not provided information regarding resources or sites of special interest to the Tribes relevant to this project. On pilot year projects that involve potential land disturbance such as this project does, the Tribes deferred review of Tribal cultural resources and/or religious sites until detailed plans are available during the project implementation phases. The NRDP can accommodate this Tribal review in its grant agreement.

Stage 2 Criteria

10. Project Location – Within the Basin and Proximate

The project is located on a tributary to the Upper Clark Fork River. It is considered proximate to injured natural resources due to the physical connection between the resources of Antelope Creek and those of the Clark Fork River, and the anticipation that the services provided by both systems will be used by residents of the UCFRB.

11. Actual Restoration of Injured Resources – May Contribute to Restoration

As discussed in criterion #7, the connectivity between water and fisheries resources of Antelope Creek and Wood Creek to the Clark Fork River suggests that this project may enhance water quality and trout populations in the Clark Fork River to a very limited degree.

12. Relationship between Service Loss and Service Restoration – Same

The services replaced by this project may be considered the same as those lost, particularly as they reflect services provided by Silver Bow Creek (i.e. riparian habitat and wildlife and attendant recreational services such as wildlife viewing, fisheries and attendant services such as small-stream fishing).

13. Project Beneficiaries and Collateral Benefits – Original and Collateral

The benefits are primarily to a replacement resource and to services the replacement resource would provide. It may also provide limited benefits to the natural resources originally harmed (aquatic resources of the Clark Fork River) and thus to their related services. An important collateral benefit is to the genetically pure populations of westslope cutthroat trout, a species of special concern, which reside in these creeks.

14. Public Support – Moderate

The application includes letters of support from the landowner, MFWP, NRCS, the Granite Conservation District, and the West Slope Chapter of Trout Unlimited. Funding would be provided by four different entities, including federal and state agencies, and a private corporation. During the public comment period on the *Draft Work Plan*, two persons commented in opposition to funding the project because it did not address mining impacts. Based on the majority of the public comments and joint funding, however, the NRDP characterizes public support as “Moderate.”

15. Matching Funds – High

Approximately 80% of the project funding is from sources other than Restoration funds. The sources and amounts of matching funds are as follows:

Montana Power Company	\$ 2,000
Landowner	\$ 3,654
FWP Future Fisheries	\$18,000
NRCS	<u>\$15,506</u>
Subtotal of Matching	\$39,160 (80%)
NRDP	<u>\$10,000</u> (20%)
Total	\$49,160

Not included in this analysis is the \$23,092 already spent on the fencing constructed during Phase 1 of the project.

16. Ecosystem Considerations, Coordination, and Integration – Integrates

The project may augment other restoration/remediation activities (see criterion #6). Nor does the project interfere with the NRDP’s Restoration Determination Plan, with on-going litigation, or with other restoration/remediation actions. The project is consistent with stream enhancement projects on other tributaries across the UCFRB being implemented through other agencies and programs.

From an ecosystem perspective, this project would address resource degradation (water quality, fisheries, riparian habitat and associated wildlife) on a small tributary

to the lower Clark Fork River, and is properly sequenced in terms of restoring this tributary. From a basin-wide perspective, it is difficult to assess the significance of the proposed project. If it is assumed that many other similar stream restoration projects will be implemented in future years across the Basin to improve conditions of aquatic resources in the UCFRB, then this project could be important to a large-scale, basin-wide effort. This project may also produce benefits directly to injured aquatic resources of the Clark Fork River to a very limited degree. (See criterion #7.)

17. Normal Government Functions – Outside Normal Government Function

This project involves stream rehabilitation activities primarily on private lands for which MFWP, the landowner or other governmental or conservation organizations (e.g., Conservation Districts, NRCS, Trout Unlimited) would normally seek grant funding. MFWP is involved in similar activities statewide; however, MFWP is not specifically responsible for these activities at this project site, nor does it receive funding for such activities in the normal course of events. On projects such as Antelope Creek, MFWP often provides matching funds and additional in-kind contributions. For this project, MFWP's Future Fisheries program is contributing \$18,000, or about 37% of the total project cost. MFWP will also make an in-kind contribution of monitoring fish populations once every two years for six more years.

Land Acquisition Criteria – Not Applicable

Monitoring and Research Criteria – Not Applicable

Butte-Silver Bow Local Government – Drinking Water Infrastructure Replacement Phase I

Project Summary

Butte-Silver Bow County (BSB) proposes to replace approximately 17,000 feet of inadequate water distribution lines in the City of Butte for a total cost of \$1.7 million, with \$1.1 million requested in Restoration funds. Butte's bedrock aquifer is contaminated throughout a six square mile area of the City and these distribution lines overlay that aquifer. This aquifer is so severely injured that natural recovery will not occur for thousands of years as concluded by the State's 1995 Restoration Determination Plan⁵ and by EPA's 1994 Record of Decision.⁶ Restoration of the bedrock aquifer is infeasible, thus the aquifer's drinking water and its storage capacity and transport services have been lost for thousands of years. This proposal constitutes replacement of lost services to thousands of property owners and other members of the public in Butte that could utilize the aquifer if it was not injured. By fixing leaking and corroded water lines, this proposal will enhance the water supply from an uncontaminated source.

In its application, BSB also provides a 20-year plan that indicates the County's intent to continue this project and provides for a 15-year water main replacement plan for which BSB will seek an estimated \$17 million in Restoration funds. This evaluation, however, does not specifically address that plan and if BSB seeks further funding of projects contemplated by the plan, it will have to do so through a separate application(s).

Stage 1 Criteria

1. Technical Feasibility – Reasonably Feasible

This project involves the replacement of old (early 1900's) leaking and, in some cases undersized, water distribution mains within the City of Butte. Major project tasks include: 1) selecting a consulting engineer to oversee the project for the upcoming construction season; 2) confirming which water mains to replace; 3) producing designs for water main replacements; 4) preparing and releasing bids to select a general contractor for project; 5) implementing water main construction and performing oversight; 6) preparing record drawings for work completed during the construction season; and 7) updating BSB records and database.

The NRDP has a reasonable degree of confidence that technologies proposed for water distribution main replacement can be achieved. The BSB Department of Public Works, Water Utility Division has extensive experience with the replacement of

⁵ *Restoration Determination Plan Upper Clark Fork River Basin* (NRDP, October, 1995)

⁶ *Record of Decision, Butte Mine Flooding Operable Unit*, U.S. Environmental Protection Agency, September 1994.

water mains in the community. Deteriorated conditions of the water distribution system led BSB to create procedures for water main replacement when BSB acquired the water system in 1992. Since 1992, BSB has annually replaced an average 21,500 feet of water mains. The County has gained valuable insight as to the appropriate volume of replacement that can be accommodated by the water system and by the citizens of the community.

The primary logistical problems to deal with are: 1) the provision of temporary water to affected homes during the construction phase; and 2) traffic congestion and confusion due to street closures. The affected homes must be provided with an alternate source of water during the approximate two week construction period. This temporary water comes from active water mains in adjacent blocks. Due to the difficulty in providing temporary water service in a large area at once, the County has proposed to replace water mains in small areas throughout the city. The applicant has provided a map, which depicts 20 areas in the City scheduled for replacement. The City will replace an average of 850 feet of water main pipe in each area. The areas selected are based upon locations with the highest current water leakage rates. Field conditions, such as an unexpected increase in chronic leaks elsewhere, could cause a modification to this schedule. The other logistical concern is that the water main renewal process disrupts traffic patterns in the community since water mains underlie the city streets. Construction activities will require street closures during the approximate two-week construction period. Taking into account any inconvenience and annoyance to residents, 17,000 feet of water main replacement has been determined by the applicant as a reasonable quantity of lines for replacement per year.

Overall Technical Feasibility

Successful completion of the main renewal project will require careful monitoring by the BSB staff. Standard construction procedures for water main replacement are being planned for this work and the project team has successfully conducted similar efforts. Water main replacement has been ongoing in Butte since 1992 on a large scale with minimal problems. This project is technically feasible based on the information provided.

2. Relationship of Expected Costs to Expected Benefits – Net Benefits

Costs proposed for implementing this year's water line replacement total \$1.7 million. BSB's share for this cost is approximately \$541,000. Restoration funds would cover 70% of the engineering and construction costs. To estimate costs for 2002, BSB added a 10% contingency to the average costs in the last two years of water line replacement of \$84 per foot.

In addition to the 2002 proposal, the applicant has outlined a 15-year project schedule for replacing water lines system-wide to address the long-term maintenance problems of the system. System-wide there are approximately 1,170,000 feet of distribution

mains in Butte. BSB plans to request \$1.2 million per year in Restoration funds, and provide a direct match of about \$0.5 million annually to replace 17,000 feet of line per year. The costs to the Restoration Fund would be approximately \$17.5 million over 15 years and BSB would match \$8.1 million. This effort would result in 255,000 feet of water line replacement over the 15-year time period which, combined with improvements made in the last eight years, total 38% of the entire water distribution system and about half of the sections in most need of replacement. Although this effort will lag behind the accepted rule-of-thumb for a water line replacement of one percent each year, the project would achieve substantial progress toward getting the community's water infrastructure needs met. BSB indicates that all major leak problems will have been addressed and annual maintenance costs will be within reason for the size of the utility system upon successful implementation of this 15-year replacement project.

The NRDP agrees with the applicant that this project represents an important step in replacing services lost due to injured groundwater resources. The lost compensable value from injuries to the groundwater in Butte is substantial based on the 1995 NRD assessment report⁷ with estimates ranging from \$44 million to \$217 million. The State's 1995 Restoration Determination Plan also affirmed upgrading Butte's antiquated water system as a viable replacement alternative for the injured bedrock aquifer.

The benefits to the Butte residents who lost the use of groundwater include the following:

- reduced rate of leakage which will reduce pumping and treatment costs;
- reduction in the potential for the distribution system becoming contaminated through leaking and failing pipes;
- improved fire protection;
- cost savings due to the reduction in the number of leaks per year that have to be repaired;
- reduction in the potential for property damage and reduction in associated insurance claims from leaky pipes;
- assurance of the BSB's continued provision of a reliable source of potable water to its residents meeting current federal and state regulations; and

⁷ *Revised Report and Rebuttal: Assessment of Damages to Groundwater and Literature Review of Water Use Values in the Upper Clark Fork River Drainage*, Duffield, October, 1995. Note: this report estimates lost use values for Butte's bedrock and alluvial aquifers.

- the opportunity to conserve more water during drought conditions as a result of reduced leakage.

Because this proposal will benefit and compensate the public for some of the lost use of groundwater that Butte has suffered due to inability to use groundwater in much of the City, the NRDP believes the benefits gained from this replacement proposal outweigh its costs.

3. Cost Effectiveness – Likely Cost Effective

BSB considers that the proposed project is the most economical way to replace lost services from injured groundwater resources. BSB indicates the no action alternative would eliminate one of the few viable means to replace the lost services that groundwater provides. Another alternative considered by the applicant was to vary the level of effort to replace the distribution system. For example, the proposed project could replace the distribution lines at a faster or slower level of effort per year. The applicant states that the proposed level of replacement, 17,000 feet of line per year, is appropriate based on BSB experience over the last eight years. The State's engineering consultant analysis of the project indicates both the proposed replacement schedule and cost estimates to be reasonable based on previous water line replacement costs in Butte and other similar municipal projects.

If groundwater of acceptable quality were available from wells, the cost of operating and maintaining the water system would be significantly less. Under current state and federal regulations most ground water supplies require little or no treatment other than disinfection with chlorine or ultraviolet light. Groundwater systems typically do not have to be manned on a full-time basis. This alternative is not available due to the extensive groundwater contamination underlying Butte.

If an alternative surface water supply were available, such as a large reservoir, then accessing that source would be an appropriate replacement for Butte's groundwater loss. However, at this time it is difficult to accept this scenario as a legitimate alternative for uptown Butte until the household-to-household distribution system is repaired.

Leakage from distribution lines has been predicted to be about 14%. Leakage at this rate would produce an average loss of treated water that would cost some \$55,000 per year. Another annual cost that would be eventually saved by replacing water lines would be elimination of repairing water main leaks. These leaks, some 325 per year, cost BSB about a \$1000 per leak to fix, or \$325,000 per year. At some point in time, without the proposed water main replacement, the distribution system would become totally unmanageable and unusable due to the excessive leakage and age of piping. Due to these savings and the analysis done by the applicant, the NRDP feels that the level of pipe replacement proposed by the City is cost effective.

4. Environmental Impacts – No Significant Adverse Impacts

Replacing Butte’s water mains presents no significant adverse impacts to the environment. The project will have potentially adverse impacts to aesthetics from the short-term excavation within the city streets for the installation of the mains. This impact will be mitigated, to the extent possible, by limiting public access to the disturbed areas. Actual construction activity will last about two weeks for each renewal segment. The project will have a potentially beneficial impact on conservation of water, by reducing water loss from leaking pipes, which has been estimated around 14%.

5. Human Health and Safety Impacts – No Significant Adverse Impacts

Potentially adverse impacts to the human environment during construction activities include dust, noise, temporary loss of water service, restricted access to commercial facilities and disruption of traffic flow. The applicant has planned effective mitigation measures to alleviate these adverse impacts to the greatest extent possible, such as limiting construction to daytime hours. In addition to bringing clean water to residences, replacing water mains will also benefit the community by reducing impacts on human health and safety by reducing water leaks, which have caused road hazards by leaking water and ice, health hazards due to possible contamination of the water system via leaks, and safety hazards caused by inadequate pressure and flow for fire fighting purposes.

6. Results of Superfund Response Actions – Consistent

The 1994 Record of Decision for the Butte Mine Flooding Operable Unit declared that the bedrock aquifer and parts of the alluvial aquifer on the Butte Hill could never be used for drinking water. BSB has adequately planned to replace water lines in areas where impacts from mine flooding decisions are applicable. This is consistent with remedy in that contaminated groundwater is not being accessed for residential use.

7. Recovery Period and Potential for Natural Recovery – No Effect on Recovery Period

This replacement project will not affect the bedrock aquifer’s recovery period, which will not occur for thousands to tens of thousands of years.

8. Applicable Policies, Rules and Laws – Consistent/Sufficient Information Provided

The applicant has provided sufficient information on the applicable requirements needed to complete this project. The following three standard procedures will be implemented:

- Butte-Silver Bow will submit all design drawings for water main segment replacements to DEQ for review and approval prior to performing the work.
- Butte-Silver Bow will coordinate all replacement activities with the U.S. EPA to ensure any excavated materials that contain heavy metals in excess of remedial action levels are disposed at the mine waste repository and clean back fill materials are used
- Butte-Silver Bow will follow Montana Public Works Specifications in the implementation of the project, including those for ditch width, pipe bury depths, safety measures, and related specifications.

9. Resources of Special Interest to the Tribes and DOI – No Impact

There are no known Tribal cultural resources of special interest to the Tribes or DOI in the vicinity of the project area. The Tribes have not provided specific information regarding resources or sites of special interest to the Tribes for this project. It is unlikely that this project will disrupt any such resources.

Stage 2 Criteria

10. Project Location – Proximate

The project will be conducted above the injured groundwater area.

11. Actual Restoration of Injured Resources – No Restoration

This is a replacement project; actual restoration of the bedrock aquifer is infeasible. The State recognized this infeasibility in its 1995 Restoration Determination Plan that selected a replacement alternative for this groundwater injury.

12. Relationship Between Service Loss and Service Restoration – Same

Restoration of the bedrock aquifer is infeasible, thus the aquifer's drinking water and its storage capacity and transport services have been lost forever. This proposal constitutes replacement of lost services to thousands of property owners and other members of the public in Butte that could utilize the aquifer if it was not injured. By fixing leaking and corroded water lines, this proposal will enhance the water supply from an unaffected source. Thus, there is a direct connection between lost services and services this project will replace.

13. Project Beneficiaries and Collateral Benefits – Original

This project provides substantial benefits to the citizens of Butte who were harmed by the loss of groundwater use.

14. Public Support – Moderate

The application includes one letter of support from the Butte Silver Bow Council of Commissioners. During the public comment period on the *Draft Work Plan*, representatives of Butte-Silver Bow County and the Butte Chamber of Commerce commented in support of project funding.

15. Matching Funds and Cost Sharing – Reasonable

Butte Silver-Bow has matching funds of \$541,000 or 32% of the total project costs for this year's proposal. The matching funds consist of \$500,000 for construction costs and \$41,000 for in-kind labor. The applicant elaborates on an expected direct match over the next 15 years of \$8 million. Another cost-share contribution noted by the applicant, but not considered in this analysis, is \$40 million dollars already invested by Butte municipal drinking water system ratepayers over the past ten years. These monies were used for constructing a treatment plant for the Big Hole water supply (\$20 million), water line replacement over the last eight years (\$10 million) and for other surface water improvements (\$10 million).

16. Ecosystem Consideration, Coordination, and Integration – Integrates

This project does not interfere with the State's Restoration Determination Plan or ongoing litigation on the Butte Priority Soils Operable Unit. In fact, this Plan identified upgrading Butte's antiquated water system as a viable replacement alternative for the bedrock injuries in Butte. It states: "It was recognized at the time plans to upgrade the municipal system were being considered that an alternative to upgrading the entire system would be greater reliance on groundwater wells for domestic supply. However, this alternative was rejected, in part, because of the infeasibility of relying on the contaminated aquifers as a drinking water source. Thus, in effect, the upgraded system, plus any future additions thereto, represents a replacement of the services, which would have otherwise been available from the aquifers underlying Butte if they were not contaminated. Therefore, payment by the potentially responsible parties of a monetary sum to upgrade the water system is a justifiable replacement alternative."

18. Normal Government Functions – Augments Normal Agency Functions

Upgrading drinking water lines is a normal responsibility of local governments that is typically accomplished via funding from grants and ratepayers. But the costs BSB faces to upgrade their system are greater than typical community costs due to pervasive groundwater contamination underlying Butte. In the absence of that injury, Butte would have been able to construct a much simpler and less expensive groundwater system than the existing system as further documented in the State's 1995 NRD assessment report.⁸ BSB ratepayer's costs are significantly higher than other similar communities. For example, the Butte water rates are twice the rates in Great Falls and Anaconda, approximately 25% more than Missoula's, and 20% more than Helena's rates.⁹

⁸ *Revised Report and Rebuttal: Assessment of Damages to Groundwater and Literature Review of Water Use Values in the Upper Clark Fork River Drainage*, Duffield, October, 1995. Note: this report estimates lost use values for Butte's bedrock and alluvial aquifers.

⁹ Water Rate Survey, City of Great Falls, April 2001

Watershed Restoration Coalition of the Upper Clark Fork - East Deer Lodge Valley Watershed Project

Project Summary

This project intends to replace injured aquatic and terrestrial resources and associated lost services through a watershed-based approach involving ten subwatersheds located between Warm Springs Ponds and the Clark Fork River covering 121,000 acres of land; 227 miles of perennial streams and numerous intermittent streams; 44 landowners singly or jointly involved in 49 individual projects; and multiple funding agencies. The project seeks to improve water quality and fish and wildlife habitat through activities such as riparian fencing and streambank revegetation; grazing management in riparian and upland areas; development of off-stream watering facilities; integrated weed management; and removal of mine tailings. Specifically, this project would involve: 5.4 miles of riparian forest buffer planting; 16.3 miles of riparian fencing and grazing management; 18.3 miles of water pipeline connected to off-stream water supplies; placement of 41 off-stream stock water tanks; installation of 9 stock water wells; installation of 3 water gaps; restoration of 532 acres of wetlands; establishment of conservation plans on 55,855 acres with prescribed grazing; installation of 17 miles of cross fencing for grazing rotation; critical planting on 452 acres of uplands; and 1.5 miles of shelterbelts. The total project cost is \$1,761,361, with requested Restoration funds totaling \$627,344, or 36% of the total project cost. This is an approximately 4-year effort, with work having begun in 2000. Restoration funds are requested for years 2002-2005.

Although the 49 individual projects aimed at improving riparian and upland habitat vary in scope and the nature of the activities that would be undertaken, there are several activities common to many of the projects, and the services these habitats provide, that are subject of the requested Restoration funding. These activities and the requested Restoration funds for them are:

- 1) Prescribed Grazing Management: Prescribed grazing management includes all activities associated with grazing management in both upland and riparian areas: riparian fencing, off-stream water development, cross-fencing, reduced grazing, etc. These activities constitute the majority of the NRDP-funded individual project costs. For these activities, NRDP funds are broken down into: 1) 25% NRDP matching funds totaling \$83,373 for the Natural Resource Conservation Service (NRCS) Environmental Quality Incentive Program (EQIP) projects; 2) 100% NRDP funded projects on private lands totaling \$188,500 and state and federal lands totaling \$47,880. In sum, the total Restoration fund request for these project activities is \$319,753.
- 2) Integrated Weed Management: The requested NRDP funding for this activity is \$69,819. Integrated weed management would occur on all lands identified for prescribed grazing and is a component of 34 projects on private lands. The amount is based on a targeted 55,855 acres at a cost of \$1.25 per acre.

- 3) Weed Management on Disturbed Lands: The requested NRDP funding for this component of the project is \$85,752. These funds would be used for integrated weed management on lands disturbed (soils exposed) during project implementation. The amount was based on a cost of 7 cents per foot per year for four years. This funding would be applied to 29 individual private landowner projects, and 3 federal/state lands projects.

Other contracted services proposed for Restoration funding total \$97,176. These services include education workshops and education support (\$38,064), monitoring (\$28,180) and research (\$30,932) efforts. Other projects covering field and project administration staff total \$54,845.

Stage 1 Criteria

1. Technical Feasibility – Uncertain

The project applicant, the Watershed Restoration Coalition of the Upper Clark Fork (WRC), indicates the following project goals:

- Improve fisheries and aquatic resources on tributaries that flow into the Clark Fork River;
- Improve riparian habitat on tributaries in the project area;
- Establish permanent easements for wetlands in the project area and complete wetlands restoration efforts for pollution filtering and protecting sensitive habitat (NRCS funded only);
- Improve wildlife habitat in the project area with individual conservation plans;
- Improve recreational opportunities in the project area;
- Complete abandoned mine reclamation on Cottonwood Creek (USFS funded only);
- Integrate proposed Best Management Practices (BMPs) and conservation practices into long-term conservation plans that landowners implement to maximize restoration benefits;
- Provide education opportunities for area residents;
- Evaluate water resources to develop future off-stream water systems; and
- Monitor practices and results.

The project employs well-known, commonly used BMP strategies to address resource problems, generally degraded riparian and upland vegetation quality, and the project team has expertise in planning and implementing BMP projects. The NRDP is uncertain, however, about the extent to which these strategies, as applied to the project area, would achieve these goals and the more specific objectives identified by the applicant. The key issue affecting this determination is the lack of sufficient information linking the resource problems, the causes of those problems and the

future conditions to the proposed projects. A sufficiently detailed description or assessment of resource problems, particularly for riparian resources, is lacking.

Without more specific identification of resource problems (nature, location, extent, severity), there is substantial uncertainty as to whether the proposed project, and the individual subprojects, are appropriate or represent the most cost-effective way to address these problems. Most of the stream assessment data and information the applicant relies upon are undefined or vaguely defined; of questionable quality (i.e. best guesses rather than actual on-site field measurements); or of insufficient coverage (most of the United States Forest Service (USFS) data on riparian resources were collected on USFS property but almost all of the projects are on private lands downstream). Although the application only provides general data on upland conditions, such as “over 50,000 acres of native range are in poor to fair condition according to a recent field survey,” based on supplemental information provided by the NRCS, more detailed assessments of the upland range are available.

There are also uncertainties about many of the individual projects regarding their locations and the specific conservation measures that will be employed to meet project objectives. Of the 49 individual projects, only 11 are completely or nearly completely designed. While the uncertainties associated with the design of individual projects can be resolved during the project design and implementation phases and the NRDP does not require detailed designs in grant applications, many projects at this time are very preliminary and it cannot be determined how these projects would address specific resource problems to the benefit of fish and wildlife. Thus, the NRDP is unable to assess the linkage between resource problems, the causes of those problems, and a restoration strategy appropriate to addressing the problems and their causes. In its minimum qualifications determination, the NRDP identified these deficiencies as ones that lead to uncertainty as to whether the project meets the legal threshold of substantially restoring or replacing natural resources. Based on review of supplemental information provided by the applicant, this uncertainty remains.

The NRDP offers the following examples to illustrate why the lack of details on resource problems, particularly in riparian areas, and the specific projects, lends great uncertainty as to the extent this project will accomplish its objectives.

Peterson Creek is noted in the application to be on the State’s 303(d) list for impairment caused by thermal modification, riparian degradation, flow alteration, and other habitat alterations. On USFS lands, livestock, roads and past logging activities heavily impact the stream, and the stream is noted to have chronic dewatering problems. USFS surveys identify risk factors such as streambank condition, temperature, sediment, and nutrients. Most judgments on the individual habitat indicators were based on “limited, on the ground data and represent best guesses.” The subwatershed was considered to be in moderate condition and represents a moderate risk in its potential for erosion and sediment delivery to streams. Based on

this assessment information, the applicant has identified 11 projects for this subwatershed, 7 of which involve work addressing riparian areas. Without more specific information about the location and causes of the problems, and what the long-term desired conditions are for Peterson Creek, it cannot be determined whether a project is technically feasible (for example, would planting a riparian forest buffer along a stream that was chronically dewatered in that reach be successful?); what the benefits of a project would be; and whether there might be more cost-effective ways of accomplishing a project's objective (for example, riparian fencing may be less expensive and just as effective as planting vegetation). The WRC notes deficiencies in available information on Peterson Creek and intends to apply for 319 grants to supplement existing data and develop final restoration targets. From the WRC's perspective, this project is the start of a watershed effort and they seek to allow the restoration and planning efforts to begin together to avoid delaying action, retain funding, and encourage greater participation. But the question remains whether sufficient information is available to judge the resource benefits and cost-effectiveness of the 11 proposed projects in this subwatershed. Without this information, some project implementation may be premature and possibly not necessary.

The application states that there are 227 miles of perennial stream in the project area. Twenty two projects include goals of "improving riparian corridor health or habitat." This will be accomplished by implementing 5.4 miles of riparian forest buffer planting, 16.3 miles of riparian fencing, weed control, and grazing management to improve riparian condition. As the factors contributing to the riparian corridor conditions have not been clearly identified (overgrazing? chronic dewatering? road construction?), it is difficult to tell whether the proposed projects will result in much benefit to the resource. For instance, if chronic dewatering or channel downcutting have lowered the groundwater table, or high concentrations of metals are contributing to loss of streamside vegetation, planting new riparian buffers will fail, and implementing improved grazing practices will have little impact. Development of off-stream water sources for livestock may benefit other stream reaches, but there is not enough information to evaluate this. With the level of information provided, it would not appear that the proposed work would provide much benefit to the resource. On the other hand, if targeted appropriately, based on more detailed assessment information and problem identification, the projects could be beneficial.

NRCS guidance emphasizes the importance of completing a functional assessment of riparian areas and determining the underlying causes of a nonfunctional or functional-at-risk rating before designing and implementing a project.¹⁰ Other than on Cottonwood Creek, it does not appear there is any information on stream functions on private property in the project area.

¹⁰ NRCS Bulletin No. MT180-1-3, NRCS Riparian Assessment, which includes "Using the Proper Functioning Condition Assessment Method for Intermittent and Ephemeral Streams."

Many of the proposed projects include improvement of upland native range condition. The application generally describes upland range condition and causes of range condition. Through supplemental information the NRDP learned that the

NRCS does have range condition maps and specific definitions of range classification, and that the desired future condition for upland range for the entire project area was determined. Compilation of this information will likely help connect the resource problems, their causes, the desired future condition, and the proposed projects.

According to the application, benefits from the implementation of prescribed grazing plans and off-stream water developments include improved fisheries and aquatic resources on tributaries that flow into the Clark Fork, improved riparian habitat on tributaries in the project area, improved wildlife habitat, and improved recreational opportunities derived from improved fisheries and wildlife habitat. Though it can be asserted that any improvement in range condition will benefit riparian areas, water quality, wildlife, and fisheries, the application suggests that there is little information on the status of fisheries in many of the subwatersheds, and no information on current wildlife status. Without baseline information and measurable targets, actual benefits cannot be assessed.

In its evaluation of the application, the NRDP identified additional uncertainties that include:

- the specific activities that will be covered with NRDP funds, which are not provided in the project summary tables for projects that involve both 25% NRDP funding and 100% NRDP funding;
- the long-term effectiveness of a 3-year, \$21,000 pilot grazing reserve program; and
- the level of recreational benefits to the general public that will result from the project (see criterion #12).

2. Relationship of Expected Costs to Expected Benefits – Uncertain

The project seeks to improve water quality and fisheries, riparian aquatic and wildlife habitat, upland wildlife habitat, and recreational opportunities. The applicant also identifies more indirect benefits that include ongoing public awareness and increased future landowner participation in watershed-scale restoration efforts; reduced uncertainty about match funding sources, thereby increasing landowner participation; enhanced landowner coordination and cooperation in future endeavors; increased financial wherewithal and long-term viability of large ranching operations; reducing the chances of subdividing and loss of wildlife habitat; increased access opportunities

in the future; and, opportunities to use these funds to leverage funds from other sources.

It is difficult to assess the level of expected benefits to replacement resources and services due to the lack of detail concerning existing resource conditions and how these projects will address these resource problems, particularly with respect to the riparian areas. As discussed in criterion #1, this results in substantial uncertainty as to whether these projects individually, and the project as a whole, will accomplish the resource improvements envisioned by the project applicant. The NRDP does not question that the implementation of a properly designed prescribed grazing management plan, weed control, and BMPs will have a beneficial impact on upland range condition, riparian vegetation, wildlife, and fisheries. The question is not whether there will be benefits to the resources listed, or improvement in condition, but to what extent and at what cost. It is likely that the expenditure of the amount of money requested by the applicant will result in some level of improvement in the condition of aquatic and terrestrial resources across the 120,000-acre project area. However, the lack of detail on what and where the resource problems are, what the causes of the resource problems are, where specific projects will occur, and whether the identified project is appropriate for the resource problem makes it impossible to determine the level of benefits (i.e., minimal, moderate, or significant) of the project, and the likelihood that these benefits will be achieved. Thus the cost-benefit relationship of this project is uncertain.

3. Cost-Effectiveness – Uncertain

The applicant discusses three alternatives: the “No-Action” alternative; partial or reduced NRDP project funding; and, full funding of the project. The partial funding alternative is difficult to evaluate, because no costs were provided for this alternative. The applicant just describes it as funding some but not all projects, such as focusing only on riparian improvement and not upland improvement projects, which would result in “holes” in the watershed effort and provide less resource enhancement. Partial funding alternatives could have included funding for projects for select subwatersheds or, funding only projects that required a Restoration fund match. Obviously, a partial funding alternative would cost less than full funding of this project, but because of the uncertainties concerning resource problem assessment and project description, as described in criterion #1, the NRDP cannot determine whether any partial funding alternative would be more or less cost-effective than the selected alternative. The NRDP did consider a partial funding alternative of funding those projects that had a 75% federal match. However, insufficient information is provided in the application to isolate the specific activities and associated costs and assess the benefits of this alternative and the WRC indicated it did not wish to pursue a scaled-down effort.

The NRDP also notes that due to the scale of the project, alternatives for the individual subprojects could not be identified and assessed. For example, one project

proposes to enhance fish habitat and recreational opportunities through riparian revegetation and grazing management. Another viable option that was not discussed by the applicant would have been reclaiming the site as a wetlands. The scope of the WRC project makes it impossible, without more detailed site-specific information, to determine whether viable alternatives exist for other individual subprojects.

4. Environmental Impacts – No Significant Adverse Impacts

No significant adverse environmental impacts are expected to occur from this project. The Environmental Impact Checklist and Narrative identify potential adverse impacts to surface water quality and historical and archaeological sites. The potential water quality impacts are associated with the USFS tailings removal project on Spring Creek and the USFS plans to employ standard practices to minimize impacts during construction activities. The applicant has planned for needed weed control that might result for site disruption activities. The applicant has identified appropriate efforts to be undertaken and permits to be obtained to mitigate surface water and cultural resource impacts. The applicant also notes the potential beneficial impacts to surface water quality and quantity, fish and wildlife habitat and populations, and wetlands. As noted previously, the NRDP concurs that this project or parts of it may result in such benefits but cannot assess the significance of these benefits due to insufficient information.

5. Human Health and Safety Impacts – No Significant Adverse Impacts

This project will not cause any significant adverse impacts to human health and safety. Short-term noise impacts related to some construction activities should not be significant, given the remoteness of the project sites. The USFS will follow hazardous materials handling requirements.

6. Results of Superfund Response Actions – Positive Coordination

Based on visual inspection of the project area, it did not appear that any of the projects would occur within the 100-year floodplain of the Clark Fork River. EPA has reviewed the project application, and has indicated that projects proposed by the applicant to be funded by Restoration funds or other funds are not likely to interfere with remedial actions along the Clark Fork River or within the river's 100-year floodplain. Furthermore, ARCO has committed to the project applicant that to the extent any projects funded by ARCO do interfere with remedial activities, that ARCO will take measures to remove any obstructing work or obstacles. The project may augment the resource benefits of response actions (see criterion #7).

7. Recovery Period and Potential for Natural Recovery – Uncertain/May Reduce the Recovery Period

Although this project is primarily a replacement project, actions that improve water quality and fisheries on the tributaries to the Clark Fork River that are in the project area could benefit water quality and fisheries of the Clark Fork River. It is unknown whether trout from the Clark Fork River spawn in these minor tributaries (only two of which are perennial tributaries to the Clark Fork River, Cottonwood Creek and

Peterson Creek). The project may enhance water quality and trout populations in the Clark Fork River to a limited degree if the project could achieve significant improvements to water quality and trout habitat in these tributaries. However, given the uncertainty of the project's benefits, it is uncertain whether this project will reduce the recovery time of these injured resources.

8. Applicable Policies, Rules and Laws – Consistent/Sufficient Information Provided

The applicant identified all the permits that may be necessary and appropriate steps associated with obtaining those permits, such as conducting the necessary environmental assessments. The applicant provides for the necessary coordination with local governmental entities and landowners and the necessary cultural resource consultations. The project team consists of local, state, and federal personnel who have conducted numerous similar projects and thus have expertise in assuring the projects will comply with all applicable, policies, rules, and laws.

9. Resources of Special Interest to the Tribes and DOI – Beneficial Impact

This project may benefit these resources of special interest, although the extent of the benefits to these resources cannot be determined due to the indicated uncertainties. The DOI supports this project. The Tribes have not provided specific information regarding resources or sites of special interest on this project. On pilot year projects that involved potential land disturbance such as this project does, the Tribes deferred review of Tribal cultural and/or religious sites until detailed plans were available during the project implementation phases. The NRDP can accommodate this Tribal review in a grant agreement. The applicant indicates cultural resource field assessments will be conducted prior to all construction activity and provides for the necessary consultation with state historical preservation officers and tribal representatives. The applicant also provides for making necessary adjustments to protect these resources of special interest.

Stage 2 Criteria

10. Project Location – Within the Basin and Proximate

The project is located in the Upper Clark Fork River Basin between Warm Springs Ponds and Deer Lodge. It is considered proximate to injured natural resources due to the physical connection between the project area and the Clark Fork River, and tributaries of the Clark Fork River, as well as the relatively short distance to injured upland resources in the Anaconda area (as well as injured riparian areas of the Opportunity Ponds).

11. Actual Restoration of Injured Resources – May Contribute to Restoration

This project is intended to replace injured aquatic and terrestrial resources. (See criteria # 7 and 12). However, if this project could accomplish its objectives, there may be secondary, minor benefits to the Clark Fork River through improved water quality in several perennial and intermittent streams in the project area, as well as potential limited enhanced trout recruitment to the River through improved spawning and rearing habitat in these tributaries. The potential benefits to the Clark Fork River fisheries are considered minor because most of the tributaries in the project area are dewatered or go subterranean after leaving USFS property and are small in size with low fish populations.

12. Relationship between Service Loss and Service Restoration – Similar

The project intends to replace lost aquatic and terrestrial resources and services they provide (wildlife habitat and associated recreational services such as fishing, hunting and wildlife viewing) by improving riparian habitat along, and water quality and fisheries in, tributaries to the Upper Clark Fork River. The aquatic and terrestrial resources addressed by this project are similar to, but not the same as, those of the injured resources. Fish and wildlife habitat services to be provided by enhancing riparian vegetation and the vegetation on native rangeland could be similar to those services lost to resource injuries, depending on the benefits to fish and wildlife resulting from this project.

With respect to recreational services, the applicant suggests that the project would result in increased fishing, hunting, and wildlife viewing, which are recreational services similar to lost services. Other recreational services that could be provided by this project include hiking, bird watching, and open space enjoyment, which are similar to lost services. It is unlikely that any of the streams in the project area would be destination fisheries because of their small size. However, three streams (Cottonwood, Dry Cottonwood and Peterson Creeks) are large enough to present some angling opportunities, though due to the small size of the streams, the angling may be considered similar to but not the same as angling opportunities provided by larger streams such as Silver Bow Creek and the Clark Fork River. Similarly, the

applicant suggests that improved forage for wildlife will result in increased numbers of deer and elk, which will translate into more hunting opportunities. However, realization of increased recreational opportunities is highly dependent on two factors: actual increases in the numbers of upland wildlife and access to lands for hunting trips. More information on the significance of the wildlife resources in the project area, such as wildlife habitat condition and distribution, big game population numbers and distribution, the current recreational opportunity, and MFWP goals for big game population would assist in this evaluation. Based on statistics for 2000, MFWP elk population objectives for hunting districts in the WRC area are being met. NRDP notes that some landowners have expressed the opinion that there are already too many elk and deer in the area, so it remains unclear how improved habitat would result in increased wildlife numbers without landowner support. The WRC has indicated its commitment to increasing access by pursuing access and encouraging landowners to participate in the FWP Block Management Program. Although public access is a component of one project, the applicant indicates that many landowners allow access by permission.

13. Project Beneficiaries and Collateral Benefits – Original and Collateral

As a replacement project, benefits would be primarily to collateral resources. The magnitude of benefits to those replacement resources, however, is uncertain as explained previously. Minor benefits to injured Clark Fork River resources are possible if the replacement resources are improved to a significant degree. This project would benefit persons originally harmed by natural resource injuries, such as residents of the upper Deer Lodge Valley who have been deprived of recreational opportunities due to injuries to upland areas around Anaconda, as well as injuries to Silver Bow Creek and the Clark Fork River.

14. Public Support – Broad

The project is a cooperative effort among conservation districts, weed boards, counties in the UCFRB and numerous federal, state, and university entities. The application includes one letter of support from an individual who is a WRC Board member and seventeen letters of support from state, federal, and/or local government entities, many of who are project partners. Local entities supporting the project include Powell County Weed Board, the Upper Clark Fork River Basin Steering Committee, Powell County, Granite Conservation District, Granite County Commissioners, Mile High Conservation District, Anaconda Deer Lodge County, and the Deer Lodge County Weed Control Board. Representatives of units of the following state and federal entities also provided letters of support: USFS, Montana Bureau of Mines and Geology, DEQ, NRCS (3 letters from different units), Department of Natural Resources and Conservation (DNRC), and the University of Montana. The project also involves potential participation of 44 landowners. During the pre-draft review period, the NRDP also received letters that recommend funding this project from Senator Tom Beck, who is also a participating landowner, and from

John Hollenback, Chairman of the WRC. The NRDP considers the public support for this project to be broad and strong, based on the numerous entities and individuals participating in the project.

15. Matching Funds – High

The applicant identified matching funds at 64%. The breakdown for this percentage is as follows:

Matching Funds

In-kind match of support labor from various entities ¹¹ :	\$110,810
Cash Match from NRCS:	\$574,046
Cash Match from ARCO:	\$ 85,109
Cash Match from USFS:	\$350,000
Cash Match from Landowners:	<u>\$ 14,051</u>
Total Match	\$1,134,016 (64%)
Restoration Funds Requested:	<u>627,344</u> (36 %)
Total Project Costs	\$1,761,360

Not included in the in-kind match are the salary and wages of project support staff estimated to be \$969,996 over the 4-year project length and the landowner's operation and maintenance costs, which are not estimated.

The WRC included as match monies dedicated by ARCO and the USFS to tailings removal and BMP projects in the project area even though those projects are conducted independently of the WRC, do not involve any Restoration fund requests, and will occur regardless of whether this grant project is funded. With these projects not included, the Matching Funds are 54%.

16. Ecosystem Considerations, Coordination, and Integration – Uncertain

The project does not interfere with the State's Restoration Determination Plan or with on-going litigation. The extent to which the 49 projects encompassed in this grant proposal are sequenced properly from a watershed approach cannot be determined due to the inadequate demonstration of the linkage between the current condition, causes of the current condition, desired future condition, and the proposed projects, as further explained under criterion #1.

17. Normal Government Functions – Augments

This project involves stream rehabilitation activities primarily on private lands for which governmental entities, conservation organizations, or landowners would

¹¹ The application breaks this in-kind match down as follows: \$37,400 (DLCD), \$36,580 (WRC Board); \$3,750 WRC technical committee; USFS (\$7000), DNRC (\$16,000); and landowners (\$10,080).

normally seek grant funding. However, some work is proposed on state lands (3 projects totaling \$24,320) and federal lands (2 projects totaling \$28,740). The projects on the federal lands involve channel reconstruction, riparian fencing, and riparian plantings on Perkins Gulch and road improvements to eliminate erosion problems and restore stream functionality to a stream reach on the N. Fork of Cottonwood Creek. While these are activities that the USFS can conduct in its efforts to improve watersheds on USFS lands, the agency's priorities are directed at issues and locations outside the project area and consequently there are no federal funds allocated to this project, or likely to be allocated in the future. Nor are the projects eligible for the federal Superfund monies the USFS will be using to remove tailings in the Spring Creek channel.

A similar situation exists for the projects proposed on State lands. The activities on State lands include riparian pasture fencing, installation of stock water tanks, riparian fencing, and installation of two road dips. Typically, DNRC grazing leases address livestock carrying capacity and weed control. Improvements such as riparian fencing and off-stream water development are typically not required of the lessee and are typically conducted at the lessee's expense. If such improvements are needed, the

DNRC will try to assist the landowners in obtaining funding. Although the DNRC is responsible for maintaining roads on State lands, insufficient monies exist to cover all the road maintenance needs statewide. Since the source of funding for road maintenance is generated from forest sales, the priority for funding goes to forest tracts that get more recreational use. Also, while the road improvement on state lands is more a normal agency responsibility than the other proposed work on state lands, it's a minor aspect of the project with an estimated cost of \$700. Thus, in general, for the work proposed on state and federal lands, the grant funding would augment normal agency functions.

Regarding work on private lands, implementation of BMPs is currently voluntary. If a particular activity can be shown to cause a violation of state water quality standards, then enforcement measures can be taken. The DEQ, via its Nonpoint Source Water Quality Program, is currently focusing its efforts to obtain voluntary compliance, primarily through outreach and financial assistance such as that proposed by this project. Although weed control is a landowner responsibility, the problems are so massive and expensive to remedy that the counties in charge of enforcing weed control seek cost-sharing opportunities such as grant funding to assist landowners in this effort. The \$1.25 per acre for integrated weed management to be covered by Restoration funds is considered nominal compared to typical costs of \$20 to \$40 per acre.

Land Acquisition Criteria – Not Applicable

Monitoring and Research Criteria

This project has research (\$30,932) and monitoring (\$28,180) components. Since these activities are not the focus of the project and grant funding request, these criteria were not evaluated.

Watershed Restoration Coalition of the Upper Clark Fork - Revised East Deer Lodge Valley Watershed Project

Project Summary

This project represents a reduction in the scope and costs of the project as originally submitted by the Watershed Restoration Coalition (WRC), with the total requested Restoration funds reduced to \$135,941.¹² This revised project resulted from an effort between the NRDP and the WRC, as directed by the Trustee Restoration Council, to reach a compromise funding proposal that focused on first-year projects with time-critical matching funds. This replacement project seeks to improve fish and wildlife habitat and associated services through implementation of agricultural best management practices on rangelands on the east side of the Deer Lodge Valley between Warms Springs Ponds and Deer Lodge. This project is being funded as a pilot project to evaluate the natural resource benefits of activities such as riparian fencing and streambank revegetation, development of off-stream watering facilities, and grazing management in riparian and upland areas. This project involves 9 individual subprojects within several watersheds, principally the Peterson Creek and Cottonwood Creek watersheds. The total cost for the 9 subprojects, including federal funds, is \$268,330, of which 40% would come from the Restoration fund. The remaining part of the grant (\$25,000) would be for planning activities that will primarily involve the collection and analysis of additional assessment data across the 122,000 acres in the East Deer Lodge Valley watershed area to assist in the evaluation of the long-term success of these 9 projects, as well as facilitating the development of future projects.

Together, the 9 subprojects rely heavily on spring and off-site water developments, pipelines for water delivery, and upland tanks for livestock watering, in conjunction with best management practices (i.e. grazing management), to improve riparian and upland wildlife habitat. Riparian fencing and upland cross-fencing will also be constructed to help implement grazing management in riparian and upland areas. The following activities constitute the majority of the funding request:

- 1) Off-stream water development: This will be part of 8 of the 9 subprojects, and includes one or more of the following activities: water development (springs or wells), storage tanks, and conveyance pipelines from water sources to storage tanks or between tanks. Development of off-stream water sources can reduce the grazing pressure and associated adverse impacts in the riparian corridor.

- 2) Fencing: Five of the 9 subprojects include riparian and/or uplands cross fencing. Fencing facilitates the implementation of grazing management practices by limiting livestock use of riparian corridors, and developing

¹² (The original project is described and evaluated by the NRDP in the Project Criteria Narrative contained on pp. C-15 to C-26).

pastures in uplands areas for more controlled grazing use of the existing vegetation in these areas.

- 3) Prescribed Grazing Management: All 9 subprojects involve prescribed grazing management, a best management practice that intends to improve riparian and uplands vegetation conditions through implementation of improved grazing practices. There are no costs tied directly to grazing management. Rather, it is implemented through other activities such as off-stream water development and fencing, together with active management of the timing, location, and intensity of livestock use of riparian and uplands areas.
- 4) Weed Management: All 9 subprojects involve construction weed management activities to reduce the potential for weed infestation in areas disturbed by construction activities.

A table that identifies the 9 subprojects, the activities associated with each subproject, and their costs is contained as an attachment to this criteria evaluation. This attachment also identifies the “General Principles of Agreement” negotiated between the WRC and the NRDP that apply to this revised proposal.

Stage 1 Criteria

1. Technical Feasibility – Reasonably Feasible

This project intends to address the following goals of the WRC:

- Improve fisheries and aquatic resources on tributaries that flow into the Clark Fork River;
- Improve riparian habitat on tributaries in the project area;
- Improve wildlife habitat in the project area with individual conservation plans;
- Improve recreational opportunities in the project area; and
- Integrate proposed Best Management Practices (BMPs) and conservation practices into long-term conservation plans that landowners implement to maximize restoration benefits.

The project employs well-known, commonly used BMPs to address resource problems, generally degraded riparian and upland vegetation quality, and the project team has expertise in planning and implementing BMP projects. Although there is some uncertainty as to the extent to which these practices, as implemented through the 9 subprojects, would achieve these goals, NRDP believes that these uncertainties can be resolved through review and oversight of project design and implementation. The greatest uncertainty regarding the 9 subprojects involves their final design, and the details of the final grazing management plans. The 9 subprojects are at different

stages of the design phase, and without complete project designs, it is difficult to determine whether all the subproject activities can accomplish, or contribute to, the restoration objectives of the applicant. The NRDP and the applicant have agreed that the final project designs and supporting plans, such as the grazing management and weed control plans, will be subject to review and final approval by NRDP. This oversight by NRDP will likely ensure that activities funded with Restoration funds will result in a net improvement to fish and wildlife resources.

Many of the proposed subprojects include improvement of upland native range condition. NRDP believes that information the NRCS has on range conditions (vegetation, soils, grazing intensity) will be helpful in assessing the likely results and benefits of individual projects. Although assessment information on riparian resources is lacking at this time (with the exception of Cottonwood Creek), data collected and analyzed through the \$25,000 planning grant should help in identifying resource problems and targeting future project activities to maximize resource benefits.

2. Relationship of Expected Costs to Expected Benefits – Net Benefits

The project seeks to improve water quality and fisheries, riparian wildlife habitat, upland wildlife habitat, and recreational opportunities. The applicant also identifies more indirect benefits that include ongoing public awareness and increased future landowner participation in watershed-scale restoration efforts; reduced uncertainty about match funding sources, thereby increasing landowner participation; enhanced landowner coordination and cooperation in future endeavors; increased financial wherewithal and long-term viability of large ranching operations; reducing the chances of subdividing and loss of wildlife habitat; increased access opportunities in the future; and, opportunities to use these funds to leverage funds from other sources.

It is difficult to assess the level of expected benefits to replacement resources and services due to the lack of detail concerning existing resource conditions and final project designs for some of the projects. The NRDP's review and approval of project design and implementation, as well as additional data collection and resource assessment activities, will likely ensure that implemented projects benefit fish and wildlife habitat and associated wildlife. Given this proviso, the significant matching funds for the project, and that the results of this pilot project will help determine whether similar projects will be recommended for funding in the future, this project is judged to have net benefits.

3. Cost-Effectiveness – Likely Cost-Effective

In arriving at this compromise funding alternative, NRDP considered a number of alternatives. These included other subprojects as well as other activities and BMPs, such as integrated weed management, shelterbelts, pasture plantings, and the Grazing

Reserve Program. NRDP deemed that these other subprojects and activities were either unlikely to result in significant resource benefits and were thus not as cost-effective as the selected projects and activities. The uncertainty about the cost-effectiveness of the selected alternative is due mainly to the lack of information, at this time, about the specific resource problems that these projects are intended to address. Nevertheless, NRDP believes that its involvement in project review and approval will likely ensure that the expenditure of Restoration funds results in the highest level of benefits achievable.

4. Environmental Impacts – No Adverse Impacts

A possibility exists that some of the proposed spring developments and upland water developments, if not properly designed, could be detrimental to fish and wildlife. For example, spring development could decrease instream flows for fisheries or degrade other wildlife habitat. Upland water development could increase the physical disturbance of upland big game and decrease the quantity and quality of available forage for wildlife. With the proviso of the NRDP's review and approval of final design plans, the NRDP can likely assure the Restoration funds will be used for activities that will result in a net improvement to fish and wildlife resources

5. Human Health and Safety Impacts – No Significant Adverse Impacts

This project will not cause any significant adverse impacts to human health and safety. Short-term noise impacts related to some construction activities should not be significant, given the remoteness of the project sites.

6. Results of Superfund Response Actions – Positive Coordination

None of the projects will occur within the 100-year floodplain of the Clark Fork River. Based on EPA's review of the original project application, none of the projects included in this alternative would interfere with remedial actions along the Clark Fork River or within the river's 100-year floodplain. The project may augment the resource benefits of response actions (see criterion #7).

7. Recovery Period and Potential for Natural Recovery – Uncertain/May Reduce the Recovery Period

Although this project is primarily a replacement project, actions that improve water quality and fisheries on the tributaries to the Clark Fork River that are in the project area could benefit water quality and fisheries of the Clark Fork River. It is unknown whether trout from the Clark Fork River spawn in the streams on which the 9 subprojects are located. This project may enhance water quality and trout populations in the Clark Fork River to a limited degree if the project could achieve significant improvements to water quality and trout habitat in these tributaries. However, given

the uncertainty of the project's benefits, it is uncertain whether this project will reduce the recovery time of these injured resources.

8. Applicable Policies, Rules and Laws – Consistent/Sufficient Information Provided

The applicant identified all the permits that may be necessary and appropriate steps associated with obtaining those permits, such as conducting the necessary environmental assessments. The applicant provides for the necessary coordination with local governmental entities and landowners and the necessary cultural resource consultations. The project team consists of local, state, and federal personnel who have conducted numerous similar projects and thus have expertise in assuring the projects will comply with all applicable, policies, rules, and laws.

9. Resources of Special Interest to the Tribes and DOI – Beneficial Impact

This project may benefit these resources of special interest, although the extent of the benefits to these resources cannot be determined due to the indicated uncertainties. The DOI supports this project. The Tribes have not provided specific information regarding resources or sites of special interest on this project. In the past, the Tribes deferred review of Tribal cultural and/or religious sites until detailed plans were available. The NRDP can accommodate this Tribal review in a grant agreement. The applicant indicates cultural resource field assessments will be conducted prior to all construction activity and provides for the necessary consultation with state historical preservation officers and tribal representatives. The applicant also provides for making necessary adjustments to protect these resources of special interest.

Stage 2 Criteria

10. Project Location – Within the Basin and Proximate

The project is located in the Upper Clark Fork River Basin between Warm Springs Ponds and Deer Lodge. It is considered proximate to injured natural resources due to the physical connection between the project area and the Clark Fork River, and tributaries of the Clark Fork River, as well as the relatively short distance to injured upland resources in the Anaconda area (as well as injured riparian areas of the Opportunity Ponds).

11. Actual Restoration of Injured Resources – May Contribute to Restoration

This project is intended to replace injured aquatic and terrestrial resources. (See criteria #7 and #12). However, if this project accomplishes its objectives, there may be secondary, minor benefits to the Clark Fork River through improved water quality in several perennial and intermittent streams in the project area, as well as potential limited enhanced trout recruitment to the River through improved spawning and rearing habitat in these tributaries. The potential benefit to the Clark Fork River

fishery is considered minor because tributaries on which projects are located are small in size with low fish populations.

12. Relationship between Service Loss and Service Restoration – Similar

The project intends to replace lost aquatic and terrestrial resources and services they provide (wildlife habitat and associated recreational services such as fishing, hunting and wildlife viewing) by improving riparian habitat along, and water quality and fisheries in, tributaries to the Upper Clark Fork River. The aquatic and terrestrial resources addressed by this project are similar to, but not the same as, those of the injured resources. Fish and wildlife habitat services to be provided by enhancing riparian vegetation and the vegetation on native rangeland could be similar to those services lost to resource injuries, depending on the benefits to fish and wildlife resulting from this project.

With respect to the recreational services, further details are needed to assess the magnitude of the public benefits that will result from the 9 subprojects. The type of details needed are described in the evaluation of this criterion for the original project (refer to p. C-23). As a pilot project, the degree to which recreational services associated with improved fish and wildlife habitat are increased will be part of the evaluation of this pilot effort and will be considered in future funding decisions for similar projects.

13. Project Beneficiaries and Collateral Benefits – Original and Collateral

As a replacement project, benefits would be primarily to multiple collateral natural resources (fish and wildlife). The magnitude of benefits to those replacement resources, however, is uncertain. Minor benefits to injured Clark Fork River resources are possible if the replacement resources are improved to a significant degree. This project would benefit persons originally harmed by natural resource injuries, such as residents of the upper Deer Lodge Valley who have been deprived of recreational opportunities due to injuries to upland areas around Anaconda, as well as injuries to Silver Bow Creek and the Clark Fork River.

14. Public Support – Broad

The project is a cooperative effort among conservation districts, weed boards, counties in the UCFRB and numerous other entities. The original application received broad public support, including 18 letters of support. During the public comment period on the *Draft Work Plan*, 3 persons and 2 entities (Powell County Weed Board and the WRC) commented in support of the project, generally noting how the project will benefit natural resources, public recreation, and agriculture. One individual commented in opposition to the project, citing insufficient public

benefits and possible negative impacts to fish and wildlife from off-stream watering in upland areas.

15. Matching Funds – High

Approximately 49% of the project funding is from sources other than the Restoration fund. The breakdown for the funding is as follows:

Matching Funds

Cash Match from NRCS:	\$132,389 (49%)
Restoration Funds Requested:	<u>\$135,941</u> (51%)
Total Project Costs	\$268,330

Not included in this match are the salary and wages of project support staff, and the landowner’s operation and maintenance costs.

16. Ecosystem Considerations, Coordination, and Integration – Integrates

The project does not interfere with the State’s Restoration Determination Plan or with on-going litigation. NRDP review and oversight will likely ensure that the 9 subprojects are sequenced properly from a watershed perspective. At this time, there are no obvious impediments to implementing these projects in a sequentially appropriate manner.

17. Normal Government Functions – Outside

Implementation of BMPs is currently voluntary on private lands. If a particular activity can be shown to cause a violation of state water quality standards, then enforcement measures can be taken. The DEQ, via its Nonpoint Source Water Quality Program, is currently focusing its efforts to obtain voluntary compliance, primarily through outreach and financial assistance such as that proposed by this project. Although weed control is a landowner responsibility, the weed control activities for this project are restricted to areas where soils are disturbed to implement other project activities. Thus, the proposed activities are not considered to involve activities that a governmental entity is obligated by law to conduct or would normally conduct.

Land Acquisition Criteria – Not Applicable

Monitoring and Research Criteria – Not Applicable

General Principles of Agreement
for the Revised East Deer Lodge Valley Watershed Project

- 1) Funded projects represent work for Projects #1, 3, 33, 4, 7, 14, 17, indicated as Year 1 projects in the application, and one accelerated Year 3 project, Project #19. The amounts of NRD Restoration funding for each of these projects are shown on the attached spreadsheet.
- 2) Funding will include construction weed management.
- 3) Funding, at this time, will not be provided for the requested integrated weed management, Grazing Reserve Program, or the monitoring, research, and education support efforts.
- 4) The funding will include an additional \$25,000 for collecting additional data and other information to justify funding of other projects. The details of this additional data collection effort are to be agreed upon by the WRC and the NRDP via a NRDP-approved Work Plan.
- 5) Funding will include 6% of entire costs for administrative costs.
- 6) Funding recommendations are conditional upon approval of final design plans for the various elements of these projects.
- 7) This project is being funded as a pilot project. Approval of this pilot proposal does not constitute any predetermination of funding recommendations on similar projects proposed for NRD Restoration funding in the future. For future projects, the applicant will provide data that sufficiently links the proposed projects to degraded resource conditions and improvement of public natural resources (e.g., fish and wildlife) or public recreational benefits.

Landowner	Project	Extent	EQIP 75%	NRD 25%	Lineal Pest Mgt.	100% NRDP	Proj Cost EQIP & NRDP	NRDP EQIP Cost Share
Ted Beck #33 (Part - see below)	Pipeline	10560	\$15,048	\$5,016	\$2,957			
	1100 Gal. Tanks	3	\$2,723	\$908				
	Riparian Fence	5280			\$1,478	\$5,280	\$33,410	\$15,639
	Project Summary		\$17,771	\$5,924	\$4,435	\$0	\$57,669	\$17,466
Arnie Mohl #19	1100 Gal. Tanks	5	\$4,538	\$1,512	\$4,066			
	Pipeline	14520	\$20,691	\$6,897				
	Well	300	\$7,474	\$2,491				
	10,000 Gal. Storage Tank	1	\$7,500	\$2,500				
	Project Summary		\$40,203	\$13,400	\$4,066	\$0	\$57,669	\$17,466
Robert Evans #7	Pipeline	4200	\$5,985	\$1,995	\$1,176			
	1100 Gal. Tank	1	\$908	\$302				
	Spring	1	\$1,500	\$500				
	Project Summary		\$8,393	\$2,797	\$1,176	\$0	\$12,366	\$3,973
Applegate #1	Pipeline	300	\$427	\$143	\$84			
	Tank	1	\$990	\$330				
	Spring	1	\$1,500	\$500				
	Fence	9000	\$5,400	\$1,800	\$2,520			
	Project Summary		\$8,317	\$2,773	\$2,604	\$0	\$13,694	\$5,377
Tom Beck #3	Pipeline	8238	\$11,746	\$3,906	\$2,307			
	Tank	1	\$990	\$330				
	Spring	1	\$1,500	\$500				
	Project Summary		\$14,236	\$4,736	\$2,307	\$0	\$21,279	\$7,043
Dan McQueary #17	Fence - smooth wire	5808	\$2,439	\$813	\$1,626			
	Fence - smooth wire	5808	\$2,439	\$813	\$1,626			
	Project Summary		\$4,878	\$1,626	\$3,252	\$0	\$9,756	\$4,878
Billy Johnson #14	Spring	1	\$1,500	\$500				
	Pipeline	700	\$998	\$333	\$196			
	2749 Gal. Tank	1	\$2,268	\$756				
	Fence	2640	\$1,584	\$528	\$739			
	Spring	1	\$1,500	\$500				
	Pipeline	1200	\$1,710	\$570	\$336			
	2749 Gal. Tank	1	\$2,268	\$756				
	Fence	2693	\$1,616	\$538	\$754			

Landowner	Project	Extent	EQIP 75%	NRD 25%	Lineal Pest Mgt.	100% NRDP	Proj Cost	NRDP EQIP
	Fence	2779	\$1,667	\$556	\$778			
	Project Summary		\$18,596	\$6,199	\$5,908	\$5,280	\$35,983	\$17,387
Vanisko Ranches #33	Fence	5354	\$3,212	\$1,071	\$1,499			
	Pipeline	17200	\$24,510	\$8,170	\$4,816			
	Structure for Water Control	1900 lbs.	\$7,125	\$2,375				
	Storage Tank	20,000 Gal.	\$7,500	\$2,500				
	1100 Gal Tank	1	\$908	\$303				
	Fence	860	NC	NC	\$241			
	Fence	400	NC	NC	\$112			
	Riparian Fence	5280			\$1,478	\$5,280		
	Project Summary		\$43,255	\$14,419	\$8,146	\$5,280	\$71,100	\$27,845
Gene Burt #4	Tank	1	\$1,073	\$358				
	Pipeline	320	\$456	\$152	\$90			
	Pump	1	\$750	\$250				
	Streambank and Shoreline Protection	321	\$1,204	\$401	\$90			
	Pipeline	200	\$285	\$95	\$56			
	Riparian Forest Buffer	321	\$1,248	\$416	\$90			
	1300 Gal. Tank	1	\$1,073	\$358				
	Spring	1	\$1,500	\$500				
	Pipeline	600	\$855	\$285	\$168			
	1200 Gal. Tank	1	\$990	\$330				
	Project Summary		\$9,434	\$3,145	\$493	\$0	\$13,072	\$3,638
	Column Total		\$165,083	\$55,019	\$32,388	\$15,840		

COLUMN TOTALS	NRDP Data Collection Administration (6%)	NRDP EQIP
\$268,330	\$0	\$103,247
\$0	\$0	\$25,000
\$0	\$0	\$7,695
GRAND TOTAL	\$268,330	\$135,941

* same area as stream bank and shoreline protection

County Water and Sewer District of Rocker Upper Clark Fork River Basin Restoration Grant Application

Project Summary

This project is intended to accomplish three broad objectives: 1) provide advanced wastewater treatment (primarily nutrient removal) with benefits to Silver Bow Creek; 2) provide replacement and restoration of lost aquatic and terrestrial wildlife habitat, particularly for waterfowl, through the creation of four wetlands/treatment cells; and, 3) provide walking and wildlife viewing recreational opportunities. The project (\$1,176,576 total cost) has four main components: wastewater treatment system improvements, lift station upgrading, ultraviolet (UV) disinfection system installation, and wetlands/treatment cells construction. The 15-acre project area will contain four wetlands cells totaling approximately 5 acres that would receive water continually from the Rocker wastewater treatment lagoons. The upper two cells, approximately 2.5 acres total, would be lined and located outside of the Silver Bow Creek floodplain. The lower two cells, approximately 1.2 acres each, would be unlined and intercept groundwater.

A total of \$719,566 in Restoration funds would be applied to the wetlands construction (\$665,615) and the UV disinfection system (\$53,951), which would replace the existing chlorination system. The recreational features of the project, such as trails and wildlife viewing overlooks, are included in the wetlands construction costs. The other project components would be funded by the County Water and Sewer District of Rocker (District) or through other funding sources. Construction of the treatment cells and wetlands comprises about 93% of the total requested Restoration funds.

Stage 1 Criteria

This criteria evaluation will focus on the UV disinfection system and wetlands/treatment cells components of the project subject of the Restoration funding request. The wastewater treatment system improvements and lift station upgrading components are considered only as they relate to the evaluation of the components to be funded by Restoration funds.

The specific aspects of the this project considered in this review include:

- 1) the UV disinfection system
- 2) nutrient removal
- 3) wildlife habitat values of the treatment/wetlands cells; and,
- 4) recreational benefits of the project.

1. Technical Feasibility – Reasonably Feasible

Overall, this project employs well-known, commonly used methodologies to accomplish advanced wastewater treatment, particularly enhanced nutrient removal. Wetlands treatment has been applied in many areas of this country and Canada. While it is generally recognized that treatment efficiency may not be as great in colder climates such as Rucker, compared to warmer climates of the south and southwest, the wetlands should nevertheless achieve an acceptable level of nutrient removal, capable of meeting any future permit limits that might be in effect. The applicant has used a commonly used modeling approach, as adjusted for colder operating conditions, to determine the size of the treatment/wetlands cells. The applicant estimates that the system could achieve nutrient removal levels approaching 50 to 70 percent. Long-term operation and maintenance of such systems can include routine servicing of system components, removal of accumulated solids, and removal of unwanted plants that might threaten the structural stability of the pond embankments or liners. Wetlands systems typically have low maintenance requirements, so there should be little uncertainty about the project's ability to provide the desired benefits over the long-term.

UV disinfection is a commonly used method of disinfecting wastewater prior to discharge. These systems have the ability to achieve the required level of disinfection, although high suspended solids levels that can occur in the discharge from lagoon treatment systems may compromise the effectiveness of the disinfection process. At this time, there is some uncertainty as to where the UV system would be installed in the treatment system, but this is a minor issue that can be resolved during the engineering design phase of the project.

Two important objectives of this project are providing wildlife habitat and recreational services, such as hiking and wildlife viewing. Because the project application did not contain detailed information concerning the design of the ponds, and the revegetation approaches to be used for the aquatic and terrestrial habitats in the project area, it is difficult to comment specifically on these aspects of the project. It appears that the project is technically feasible in terms of providing open-water wetland habitat to attract waterfowl and other wildlife and providing recreational opportunities. Review by NRDP consultants identified several factors to be considered in the final design that would maximize the quantity and quality of habitat. These include creating variable water depths and undulating cell bottoms to increase habitat diversity; increasing the diversity of plant species in the upper cells; and adding artificial nest structures or birdhouses. These features could be addressed in the project design phase and the applicant has indicated an intent to maximize the system's ability to attract wildlife. Implementation would depend on whether such features presented any operational or maintenance difficulties.

Several factors were also identified that may limit the wildlife habitat and waterfowl use potential of the wetlands created by this project. First, NRDP's project review consultant noted that the habitat-based characteristics recognized as optimal for waterfowl habitat (50% open water interspersed with 50% emergent vegetation, based on guidance from Ducks Unlimited) are not consistent with DEQ's *Draft Treatment Wetlands Design Guidelines*, which suggest no more than 30% deep, unvegetated zones to maximize treatment efficiency. Second, several entities (MFWP, US Fish and Wildlife Service, and Ducks Unlimited) require 4 acres of heavily vegetated uplands for every acre of open water on small wetland developments to provide upland nesting cover for waterfowl. Where this is not provided, there can be a marked reduction in waterfowl use and brood production. It does not appear that the requisite amount of adjacent upland habitat would exist to maximize waterfowl use. Third, it is possible that human activity that is facilitated by the project's recreational features would disrupt breeding and nesting seasons.

Another uncertainty at this time is the availability of the 15 acres of land desired for implementation of this project. If this land cannot be acquired at a reasonable price, the project, particularly the size of the wetlands, would have to be modified to meet the constraints of whatever land is obtained. This could reduce the size and area of the wetlands and the significance of the benefits derived from them.

There is also uncertainty concerning the long-term existence of the open-water wetlands. While there is greater certainty that the two lined, upper treatment cells will be designed and engineered to remain structurally intact because of the wastewater treatment purposes that they are intended to provide, there is less certainty about the wetland cells constructed in the floodplain along Silver Bow Creek. In coordinating with remedial actions, the ultimate design is intended to be compatible with a dynamic, natural fluvial system. It is possible, and in the long-term likely, that these open water ponds will be captured or otherwise altered from an open-water habitat to something more typical of other riparian areas along the creek.

An uncertainty in terms of administrative feasibility that needs to be resolved by the applicant involves the issue of water rights. The State legislature enacted a basin-wide closure for the UCFRB, effective April 14, 1995, for new appropriations and applications for state water reservations. The construction of wetlands might be determined to be a new appropriation of water that requires a water use permit application. Even with the Basin closure, the DNRC could issue a permit to appropriate groundwater if the application includes an augmentation plan and if the applicant proves by a preponderance of evidence, in addition to the criteria of 85-2-311, MCA, that the augmentation plan provides sufficient augmentation water in amount, time, and location to replace depletions to senior water rights. Based on available information from DNRC and the applicant, it appears the applicant can adequately resolve water rights issues in the timeframe necessary to coordinate with remedy.

2. Relationship of Expected Costs to Expected Benefits – Net Costs

Because this criterion integrates the evaluation of all the Stage 1 and 2 criteria, it is addressed last in the evaluation process. Readers may want to read this discussion after reviewing the following remaining criteria.

The benefits of this project are described in more detail, primarily in criteria #7, 11, 12, and 13. These benefits, summarized below, include:

- Creation of 5 acres of open-water wetland habitat
- Increased habitat diversity along Silver Bow Creek
- Increased diversity of attracted wildlife, particularly waterfowl
- Creation of additional upland habitat
- Reduced nutrient concentrations in Silver Bow Creek
- Improved aquatic habitat with improved water quality
- Enhanced recreational opportunities, including walking, wildlife viewing, and angling.

The NRDP recognizes that there are also indirect benefits that are difficult, if not impossible, to quantify that would result from this project. These include such things as community and societal goodwill engendered by voluntary participation in a basin-wide resource restoration program; public ownership and stewardship of natural resources; and the ability for the project to serve as a model to other small communities as a demonstration of “natural” technology, wherein wastewater treatment needs are combined with wetlands habitat creation.

Overall, the NRDP considers the costs of the Rocker project to be high compared to the benefits that would be realized to water quality and wildlife habitat. In the NRDP’s analysis, the primary restoration benefits are derived from the creation of 5 acres of wetlands for wildlife habitat, wildlife, and associated public recreational opportunities.¹³ The cost per acre of these wetlands is \$133,000, and the NRDP determined that a similar level of benefit could be achieved with other designs within the Silver Bow Creek floodplain at a significantly lower price (see criterion #3). The benefits of nutrient reduction, if any, would be comparatively minor, and the reduction in nutrient concentrations in Silver Bow Creek would likely be immeasurable given the small contribution of the Rocker wastewater treatment plant to total nutrient loads in Silver Bow Creek (see criterion #11).

¹³ There are inconsistencies in the application on the size of wetlands. In one place, the application states that approximately 8 acres of wetted surface area would be created. The project’s engineering costs are based on a total of 4.4 to 4.9 acres. For purposes of this review, a total size of 5 acres of treatment cells/wetlands will be used.

3. Cost-Effectiveness – Not Cost Effective

The applicant discusses the “No-Action” alternative, and presents an analysis of several other alternatives to the proposed project, or components of the proposed project. These include alternatives to the lift station, secondary treatment, disinfection, and advanced treatment options. Of particular relevance to this evaluation are the UV disinfection and advanced treatment option alternatives, because they are the components subject of Restoration funding.

UV disinfection system: The applicant indicates that the existing chlorine disinfection system would need to be replaced because it would no longer be functional in the upgraded system. Although a UV disinfection system would be more expensive than reconfiguring the existing gaseous chlorine system, NRDP agrees with the applicant’s determination that the UV system is the best alternative if wetlands are going to be created.

Nutrients/Wetlands: Alternatives were evaluated for both wetland habitat benefits and for wastewater treatment enhancement. With respect to wastewater treatment alternatives, the applicant discussed the following: no-action, constructed wetlands, spray irrigation, connection to the Butte treatment system, and use of the existing sequencing batch reactor (SBR) mechanical plant for nutrient removal. Under the no-action alternative, Rocker is currently meeting their Montana Pollutant Discharge Elimination System (MPDES) discharge permit and doing nothing is a viable option. This alternative, however, would not achieve the restoration benefits sought by the project applicant. The applicant concluded that the constructed wetlands system was the most cost-effective alternative that met the goals established in the District’s planning process and the goals of the NRDP. Other alternatives could have better addressed individual goals of the project, but at higher cost. For example, a mechanical plant could achieve a higher degree of nutrient removal, but would not have provided the wildlife habitat associated with constructed wetlands, and would have been more expensive.

One viable alternative not presented in the application would be construction of only the lower two wetland cells to provide wildlife habitat and associated recreational opportunities, while maintaining the existing wastewater discharge to Silver Bow Creek. These cells would be constructed deep enough to intercept groundwater. Constructed wetlands costs can range considerably, from \$4,000 per acre to over \$100,000 per acre. A NRDP project review consultant estimated that open-water wetlands constructed at this location along Silver Bow Creek in coordination with remedy would cost approximately \$20,000 per acre, assuming that no riprap was needed for protection and that no wastewater treatment functions were included in the project design. This alternative would provide less wildlife habitat and recreational services benefits (only about half as much wildlife habitat would be created), but would be less than one-tenth the cost of the proposed project.

The NRDP recognizes that there is uncertainty about the viability of this alternative regarding needed water rights (see criterion #1) and the sufficiency of a groundwater source. Groundwater-source wetlands systems are potentially subject to extreme fluctuations in the water level, whereas the wastewater treatment plant might provide a more assured water source. This uncertainty could be addressed in the future when groundwater information collected as part of the site remediation becomes available. Furthermore, this alternative would raise the same water rights issues discussed in criterion #1 with respect to the project as originally proposed by the applicant. This alternative would not attain the nutrient removal benefits sought by the applicant, and would require the existing surface water discharge to be maintained.

From a larger perspective, also not considered were alternatives that would reduce nutrient loadings from other sources, or creation of open-water wetlands at other locations along Silver Bow Creek. For example, it might be more cost effective to remove nutrients from the Butte Wastewater Treatment Plant discharge – there are generally cost-efficiencies that can be obtained in the design, construction, and operation of larger projects. Although this would be a substantially more expensive undertaking, it might provide more benefit for the cost. The NRDP did not evaluate in detail the cost-effectiveness of an alternative nutrient removal system given the determination that the benefits of the proposed nutrient removal, if any, are comparatively minor.

Given the joint objectives of the project to enhance wastewater treatment and wetlands habitat, the applicant provided a good cost-benefit analysis and concluded appropriately that the project was cost-effective. From the NRDP's perspective on the benefits to the resource, the benefits of nutrient removal, if any, are comparatively minor (see criterion #11). From the wildlife habitat perspective, the project is not cost-effective. Information provided to the NRDP indicates that wetlands habitat can be constructed or rehabilitated at significantly less cost than proposed in this project.

4. Environmental Impacts – No Significant Adverse Impacts

The NRDP concurs with the applicant that the project will not cause any long-term adverse environmental impacts. The NRDP notes, however, that some maintenance activities, such as seasonal vegetation removal and occasional removal of accumulated solids from the basins could result in temporary disturbance to wildlife using the area.

5. Human Health and Safety Impacts – No Significant Adverse Impacts

Health and safety issues will be controlled through restriction of access to the wastewater treatment facilities, primarily fencing. Disinfection is a standard way of controlling risks of bacterial infection from contact with treated wastewater. Changing the gas chlorine disinfection to ultraviolet disinfection will eliminate the

threat of a release of toxic gas. The NRDP notes that other safety design features, such as handrails on boardwalks, and avoiding steep levee side slopes to prevent accidental drownings, could be included.

6. Results of Superfund Response Actions – Positive Coordination

The wildlife habitat and recreational components of this project would augment the habitat and recreational services to be provided by the Silver Bow Creek remediation and the Greenway project.

The project applicant has worked closely with the DEQ streamside tailings project manager in the project design. The remedial design was revised to reroute the reconstructed stream channel to allow for construction of the two lower wetlands cells. DEQ has indicated that during the removal of tailings and placement of fill, the two wetlands cells could be created through selective placement of clean fill and leaving approximately 2.4 acres of floodplain that would not be backfilled. Reduced fill requirements will also save money in the cleanup process. Meetings have also been held with the Greenway project staff to coordinate project planning. This coordination will help ensure that all three projects are implemented without conflict or duplication of effort.

The DEQ's Silver Bow Creek project officer has indicated that remedial actions in this reach of Silver Bow Creek will be implemented in early 2002, which is a timeframe favorable for coordinating work on this project with remedial actions. If this project is not approved for funding in this grant cycle, or other uncertainties (land purchase, water rights issues) delay implementation of this project, then it is unlikely that this project could be implemented without undoing some of the remedial actions in this reach at a substantial cost (estimated to be approximately \$60,000 for removing backfill and reestablished floodplain vegetation).

The applicant notes on p. 2 of the application that the project is consistent with language in the Streamside Tailings Operable Unit Record of Decision (ROD) (DEQ, 1995) that identifies the use of wetlands to provide treatment for wastewater and stormwater runoff as a desirable end land-use. The NRDP notes that this language was specifically deleted in the Explanation of Significant Differences (DEQ, 1998).

7. Recovery Period and Potential for Natural Recovery – May Reduce the Recovery Period

This criterion evaluates whether the project will decrease the recovery time for injured resources over what can be expected to occur as a result of response actions. This project is intended to promote recovery of natural resources, including wetlands and riparian zones along Silver Bow Creek, and surface water of Silver Bow Creek. Trees and shrubs would also be planted in the higher ground at the site away from the wetlands and treatment cells. An important aspect to this criterion is that the lower

portion of this area would be restored to natural riparian area in any event, as a result of the stream channel reconstruction and floodplain revegetation that will occur as part of remedy. Based on preliminary remedial designs for the upper reaches of Silver Bow Creek, it appears more likely that a grass and willow riparian community will become established in this area, rather than the open-water wetlands proposed in this project. What would not be accomplished under remedy that this project proposes is the creation of open-water wetlands within and outside the floodplain, as well as other habitat through the planting of shrubs and trees in the upland areas. Nutrient removal would not occur as part of the remedy.

The fact that this project acts directly upon an injured resource increases the potential for affecting the natural recovery period. This project would develop a small number of acres (five) of open-water wetlands habitat in a reach of Silver Bow Creek where no other open-water wetlands would be created, and would provide a slight but not likely measurable improvement in water quality that serves as habitat to aquatic life. The open-water habitat could be attractive to numerous species of wildlife, including furbearers, which were injured along Silver Bow Creek. Given the above, NRDP concludes that this project may reduce the recovery period.

8. Applicable Policies, Rules and Laws – Consistent/Insufficient Information Provided

The applicant presented a discussion of applicable policies, rules and laws, including an identification of the anticipated necessary permits. Based on review of the application by DEQ, the wetlands system generally is in accordance with DEQ's *Draft Treatment Wetlands Design Guidelines, April 16, 2001*. The applicant did not address the issue of water rights, and the possible need to file an augmentation plan and an application for a change in water rights use (see criterion #1). The applicant has been notified of the need to address these issues if the project is to be implemented in a manner timely with the remedial actions along Silver Bow Creek.

9. Resources of Special Interest to the Tribes and DOI – Beneficial Impact

In creating open water wetlands, the project may benefit resources of special interest. The Confederated Salish and Kootenai Tribes have not provided specific information regarding resources or sites of special interest to the Tribes relevant to this project. On pilot year projects that involve land disturbance such as this project does, the Tribes deferred review of Tribal cultural and/or religious sites until detailed plans are available during the project implementation phases. The NRDP can accommodate this Tribal review in its grant agreement for this project if it is funded. DOI gives the project a moderate rating and recommends further study on the project's costs and benefits.

Stage 2 Criteria

10. Project Location – Within the Basin and Proximate

The project is located on and along the injured Silver Bow Creek and its floodplain, in the Upper Clark Fork River Basin.

11. Actual Restoration of Injured Resources – Contributes to Restoration

This criterion evaluates whether, and to what extent, the project will restore injured natural resources. In this criterion, “restore” is used in its specific meaning, i.e. actions that are designed to return injured resources and services to baseline conditions or accelerate the natural recovery process.

UV disinfection system: The applicant identifies the primary environmental benefit of a UV disinfection system as the elimination of chlorine and chlorinated organic compounds that would be discharged to Silver Bow Creek from the Rocker Waste Water Treatment Plant (WWTP). No data are available to determine directly whether chlorine or chlorinated organic compounds are present in Silver Bow Creek in concentrations toxic to aquatic life, nor does the applicant provide the estimated chlorine load reduction. Given the permitted limits for chlorine in the Butte and Rocker wastewater treatment plant discharges (0.5 mg/l), and the water quality standards for instream chlorine (0.019 mg/l acute and 0.011 mg/l chronic), it is possible that acute and/or chronic chlorine standards are exceeded periodically, depending on flows in Silver Bow Creek and actual chlorine concentrations in the WWTP discharges. However, given the small volume of discharge from the Rocker WWTP compared to the typical flows in Silver Bow Creek, it seems unlikely that chlorine in Rocker’s discharge would result in significant in-stream exceedences of chlorine standards. Hence, the restoration benefits attributable to the UV disinfection system are likely negligible.

Wetlands/wildlife habitat: An important consideration in evaluating this criterion is the benefits that would be derived beyond what would be accomplished under remedy. Based on information gathered in the Silver Bow Creek remedial investigation and from subsequent field observations, the project area was a riparian/wetlands area historically, although it is uncertain whether the area historically contained open-water wetlands. Under remedy, the project area will likely be returned to a grass and willow riparian community. This project would create a different kind of habitat - approximately 2.5 acres of replacement open-water wetlands habitat at the treatment cells outside the floodplain, and an additional 2.4 acres of shallow marsh habitat directly in the floodplain. Trees and shrubs would also be planted at the site. These actions would increase the diversity of wildlife habitat and wildlife resulting from remedial actions.

While both habitat types are important for wildlife and wildlife use, the species attracted to these habitat types would differ. This project targets waterfowl use and would also likely receive use by other marsh species, whereas remedy and Greenway efforts would provide habitat for species primarily associated with woody riparian vegetation in a streamside environment. The addition of emergent marsh would serve to increase habitat diversity in the project area. Because the project will increase habitat diversity in the general area and create a few additional acres of wetlands outside the Silver Bow Creek floodplain that would be attractive to injured wildlife species, it would accomplish some restoration of injured resources.

Nutrient removal/surface water: The applicant identifies the following benefits relating to the restoration of injured resources from nutrient removal: accelerating the return of native wetlands plant species and associated wildlife habitat and wildlife (plant, animal and insect populations), and accelerating the recovery of surface water resources and associated aquatic organisms. Nutrients have been identified by the DEQ and the Tri-State Council as a factor limiting attainment of beneficial uses in Silver Bow Creek and the Clark Fork River.¹⁴ However, NRDP does not believe that the impaired beneficial uses from nutrients include adverse impacts to trout populations in Silver Bow Creek or the Clark Fork River.¹⁵ The impaired beneficial uses include recreation, as a result of nuisance algae growth, and slight alterations to benthic macroinvertebrate communities in Silver Bow Creek and the Clark Fork River.

The applicant has estimated that nitrogen loads in the wastewater discharge to Silver Bow Creek would be reduced by about 50% or approximately 3,000 pounds annually, and that phosphorous loads would likely be reduced proportionally.¹⁶ Because Rucker is a small discharger, and the amount of nutrients that would be removed comprise only a few percent of the nutrient load in Silver Bow Creek, the positive effects on water quality, on aquatic life (benthic macroinvertebrates), and recreation are comparatively minor and would not likely even be measurable. The NRDP notes

¹⁴ The Tri-State Implementation Council was established in 1993 by EPA Regions 8 and 10 and the states of Montana, Idaho and Washington. The Council sets policy and direction for water quality management actions, one of which is the Voluntary Nutrient Reduction Program (VNRP) (August 1998). The VNRP calls for voluntary nutrient reduction measures by four key point source dischargers and reductions in key non-point sources to meet specific in-stream algal density and nutrient targets. Although Rucker is not among the four key point source dischargers, the VNRP does state that an approach will be employed to address other point sources, non-point sources and growth-related issues that impact water quality.

¹⁵ In its 1995 aquatic injury assessment, NRDP concluded nutrients are not adversely affecting trout populations in Silver Bow Creek or the Clark Fork River (*Aquatic Resources Injury Assessment Report, Montana NRDP, 1995*).

¹⁶ These estimates are based on design capacity flows of 75,000 gallons per day. Existing flows average approximately 33,000 gallons per day.

that the Rocker WWTP discharge constitutes only 1/220th of the 7-day, 10-year low flow of Silver Bow Creek. Based on data contained in *Assessment of Phosphorous and Nitrogen Sources in the Clark Fork River Basin* (MDHES, 1992) the reduction of nitrogen loading (pounds per year) represents approximately 1.7% of the total nitrogen load in Silver Bow Creek as measured at Ramsay, several miles downstream.¹⁷ The reduction in phosphorous loading represents about 1.3% of the total phosphorous load in Silver Bow Creek. In comparison, the discharge from the Butte WWTP contributes significantly to nutrient loads in Silver Bow Creek. Data from the same period of record show that this discharge accounts for about 91% of the total phosphorous loading and about 76% of the total nitrogen loading, based on data collected from Silver Bow Creek just downstream of the discharge.¹⁸ Nutrient reduction in this instance is comparatively minor and would not benefit the restoration of injured aquatic resources. This is not to say, however, that nutrient reduction generally is not important in addressing basin-wide goals for the long-term attainment of beneficial uses in downstream waters.

The applicant notes that the wetlands would be designed to capture and treat localized non-point source runoff that presently flows directly to Silver Bow Creek. Treatment would include the settling of sediment and removal of any associated contaminants. Because the drainage area is quite small, and the level of contamination slight or non-existent, NRDP views this as a very minor benefit.

In summary, this project would develop a small number of acres of open-water wetlands habitat and could provide a comparatively minor but not likely measurable improvement in water quality that serves as habitat to aquatic life.

12. Relationship between Service Loss and Service Restoration – Same/Similar

The service provided to wildlife and users of the resource that would be created by this project are the same as, or similar to, those lost due to injuries to aquatic and terrestrial resources of Silver Bow Creek. They are also similar to the services that will be provided under remedy and the riparian habitat enhancement proposed in the Greenway project, although this project provides for greater habitat diversity that will support a greater diversity of wildlife, mainly more waterfowl. For reasons specified under criterion #11, the proposed nutrient removal will not enhance lost services to a significant degree.

¹⁷ This nutrient loading is reduced further downstream by the Warm Springs Ponds.

¹⁸ *More recent nutrient data have been collected by the Tri-State Water Quality Council. However, because their monitoring location in Silver Bow Creek is at Opportunity, a significant distance downstream of the Rocker WWTP discharge, loading calculations such as those presented would not be meaningful, as nutrients are often rapidly assimilated in-stream, resulting in highly variable water column concentrations.*

This project would also provide recreational services such as walking and wildlife viewing, as well as educational opportunities. These recreational features and services would not be created under remedy in this immediate area, although the Greenway trail that will also offer walking and wildlife viewing will be located in the vicinity of the project area. Furthermore, the increased habitat diversity created by this project should enhance the recreational opportunities and the quality of those opportunities. This assumes that the project is successful in creating the quantity and quality of habitat that is attractive to wildlife. There are also educational interpretive opportunities associated with this project that can benefit recreational users of this project area. The extent to which potentially undesirable site characteristics associated with wastewater, such as odor, would discourage recreational use is unknown.

13. Project Beneficiaries and Collateral Benefits – Original

The project will benefit resources originally injured by creating wildlife habitat directly on and along Silver Bow Creek. The project will also provide recreational services to the residents of the Rocker, Butte and Anaconda areas, as well as other residents of Silver Bow County, who were originally harmed by natural resource injuries.

14. Public Support – Moderate

The application includes letters of support for the project from the Tri-State Water Quality Council, DEQ, the City of Missoula, and one local business. The Tri-State Water Quality Council overseeing implementation of the Clark Fork Voluntary Nutrient Reduction supports this project and similar efforts of small communities in the UCFRB to reduce nutrient discharges. During the public comment period on the *Draft Work Plan*, one individual and three entities (Board of the County Water and Sewer District of Rocker, Greenway Service District, and Butte-Silver Bow County) commented in support of the project.

15. Matching Funds – Reasonable/Minimal

Approximately 39% of the total project funding is from sources other than Restoration funds. For the UV disinfection system and wetlands components of the project, which are the components of the project that focuses on restoration and are the subject of this funding request, Restoration funds would provide 100% of the funding.

16. Ecosystem Considerations, Coordination, and Integration – Coordinates/Integrates

This project would coordinate with remediation and restoration efforts on Silver Bow Creek, and longer term, would complement future remediation and restoration efforts on the Clark Fork River intended to improve water quality and aquatic life.

Furthermore, open water wetlands would benefit migratory waterfowl. Nutrient reduction in the Upper Clark Fork River Basin is an important objective for citizens and agencies in three states (Montana, Idaho and Washington) because of the recognized adverse impacts that nutrients have as far downstream as Lake Pend Oreille in Idaho.

17. Normal Government Functions – Augments Normal Agency Function

This criterion is intended to discourage NRDP’s funding of a project that would normally be funded under some other agency program or mandate. At the present time, the Rocker WWTP is operationally sound: it is meeting its discharge permit limits and is treating flow somewhat less than design flows. Currently, there is no regulatory mandate for the District to upgrade the plant, increase nutrient removal, or construct treatment wetlands, nor is there a pending regulatory action that would require these activities.

The funding of wastewater system improvements is typically a normal function of government. The District is seeking other funding for the components of the project that entail typical system improvements, such as the lift station and secondary plant improvements. The components of the project for which Restoration funds are sought—the wetland system and disinfection system improvements that must occur as a result of the wetlands system—do not entail typical wastewater system improvements. Even if nutrient removal were to be required in the future, the District could meet those requirements via plant modifications or a scaled-down treatment cell system that would not involve the creation of wetlands habitat or public recreational opportunities as proposed in this project. These wetland components are optional, and for this reason, are less likely to be funded via grant programs for public facilities that prioritize funding based on need. For these reasons, the NRDP concludes that this project augments normal agency function: It involves activities that may normally be conducted by governmental agencies, except that the project augments such activities beyond a level required by law and for which funding is presently insufficient to implement the project.

Land Acquisition Criteria

18. Desirability of Public Ownership – Moderate Benefits

Public ownership and access are important components of this proposal, allowing protection of remediated and restored areas and providing guaranteed access for recreational opportunities such as hiking and wildlife viewing. Since the NRDP considers the benefits to injured natural resources and the services provided by this project from the creation of wetlands to be moderate, the benefits of public ownership are considered moderate.

19. Habitat Protection – Good

Presently minimal or no aquatic or wildlife habitat occurs in the floodplain acres of the proposed purchase. By providing open-water wetlands, this project will provide for a greater wildlife diversity than is anticipated from remedy and the Greenway restoration effort. However, given that the project seeks to combine wastewater treatment functions with wetlands creations, it will not likely provide exceptional open water habitat as explained under criterion #1, Technical Feasibility.

20. Spillover Benefits – Moderate

Public ownership will facilitate the creation of a few acres of wildlife habitat. The creation and enhancement of habitat should benefit numerous species, primarily birds and waterfowl, beyond the immediate boundaries of the project.

21. Access to Public Lands – Facilitates

This project will create new and enhanced public access by changing private lands to public ownership.

22. Price – Uncertain

The price per acre is unknown at this time. Land acquisition costs on land purchases between the State, ARCO, and Silver Bow Creek landowners for the Silver Bow Creek settlement averaged about \$1,000 per acre. The NRDP considers this a reasonable basis for estimation of land acquisition costs. The applicant has estimated land acquisition costs at \$2,000/acre. If land cannot be obtained at a reasonable price, the applicant has indicated that the project will be reconfigured within the constraints of the available land already owned by the District. The NRDP's approval of all land acquisitions before they are completed, as well as appraisals, should be a condition of any funding and can be required in the grant agreement.

Monitoring and Research Criteria – Not Applicable

Greenway Service District - Silver Bow Creek Greenway

Project Summary

The Greenway Service District (GSD) is requesting approximately \$1.4 million to develop a recreational trail corridor and to restore aquatic and riparian resources along miles four and five (Reaches D through E) of Silver Bow Creek west of Butte. The Greenway activities will be coordinated with remedial actions. Last year, the GSD was awarded \$1.7 million in Restoration funds for development of the Greenway trail through the first three miles (Reaches A, B, and C) of Silver Bow Creek. This year's proposal will connect to those first three miles of trail. The proposal also provides an overview of the planned Greenway efforts for the entire 22 miles of Silver Bow Creek over the next 10 – 12 years.

Stage 1 Criteria

1. Technical Feasibility – Reasonably Feasible

The NRDP has a reasonable degree of confidence that the technologies proposed for the project can be applied to Silver Bow Creek (SBC). The tasks required to meet the goals and objectives of the project generally employ standard technologies. The following discussion focuses on how the three major components of the plan, namely access features, ecological features, and land acquisition, will accomplish the following goals: 1) restoring aquatic, riparian/wetland and uplands ecosystems within the SBC corridor; 2) acquiring and providing public access to a passive recreational corridor within the SBC corridor; and 3) implementing remediation and restoration activities within the SBC corridor as one project. The access features constitute the majority of project costs.

Access Features

There are no significant uncertainties associated with the technical feasibility of the access components of this proposal. The primary access components include a 10-foot paved trail, two bridges, and construction of five railroad bridge underpasses. No access stations are proposed for this year's grant. Detailed design for the trail and bridge work are not in the proposal. However, all preliminary design components are listed in the proposal's detailed cost sheets. The 1998 draft Greenway Design Report, which was attached to last year's proposal, details the many Greenway components with design drawings along the entire creek. The 1998 document provides added certainty that the access features can be reasonably implemented.

The applicant has requested \$245,000 to construct the trail under five railroad bridges. The space available for this effort is limited on three of these bridges and

extremely limited at one bridge; however, sufficient space exists so that the trail can be placed under all bridges.

It is critical that access features be compatible with the natural fluvial processes of Silver Bow Creek, such as floods and lateral migration of the Creek. The proposed access features for Reaches D and E will not conflict with these natural processes, nor have any measures been proposed to “harden” the stream channel to protect the proposed access features. The main trail will be located outside or at the edge of the floodplain throughout the corridor, except around stream crossings. Secondary trails planned for future proposals would be located in the floodplain, but would be unpaved and only 4’ wide.

Revegetation

The applicant proposes revegetation in Reaches D and E beyond what is planned under remedy. Although detailed revegetation locations are not included in the plan, the type and quantity of plants that are expected to be required are listed in the application. It is appropriate and more efficient to detail planting locations only after the remedial revegetation efforts have been determined. The applicant will rely on the expertise of DEQ’s remedial contractor for designing most revegetation components. The NRDP agrees with the applicant that coordination with the remedial revegetation contractor will be vital for any successful revegetation to take place. For the Reach A planting efforts conducted in June 2001, the remedial revegetation contractor designated which plant species were most suitable and locations for these plants. Although details on Reach D and E efforts remain to be finalized until remedial efforts are determined, based on what has proven feasible on Reach A, the applicant has budgeted sufficiently for the needed level of plantings. The project budget also includes sufficient funds for weed control associated with the initial revegetation efforts.

The applicant does not specifically budget for temporary plant watering which may be needed, depending on weather conditions, to maintain the plantings until they become established. This potential cost may be covered by the 15% cost contingency for ecological features.

The proposal does not specifically address revegetation monitoring. Via the Bighorn Environmental project on Reach A, a revegetation monitoring plan to assess effectiveness has been implemented. This plan goes beyond the scope of the remedy revegetation monitoring. The NRDP recommends that this model monitoring effort be continued on Reaches D and E. Based on Bighorn Environmental’s proposal, long term monitoring would cost about \$12,000 for these two miles, which may be covered by contingencies.

Organic matter incorporation in the floodplain is a significant component of the grant (\$120,000). Organic matter placement, which will enhance floodplain vegetation, was successfully applied in Reach A under the Bighorn Environmental grant. This

effort is the first revegetation component to be implemented on the floodplain, which will be soon after tailings removal in the fall of 2002.

Enhanced Streambanks

A minor component of this proposal (\$50,000) involves enhancing remedial streambanks and stream habitat to create improved aquatic habitat along Reaches D and E. The detailed design for streambank construction was not provided because the applicant will rely on DEQ's fluvial geomorphology contractor for designing the enhanced banks. The enhanced streambank designs consist of adding a woody debris/organic layer with live cuttings between fabric encapsulated lifts and using stone toe materials for deformable streambanks. This appears technically feasible, although the technique has not been significantly tested to date and other alternatives may be more feasible and cost effective as further discussed under criterion #3. In the fall of 2001, some enhanced streambank planning and design will occur on Reach C with assistance from MFWP and NRDP consultants. This effort will provide valuable information for the planning and design of aquatic enhancements in Reaches D and E. Further work is also needed to determine the administrative and technical feasibility of altering remedial designs to accommodate aquatic enhancements covered by Restoration funds. The proposed aquatic enhancements are administratively feasible. More intense restoration of stream banks would require further evaluation by restoration and remedial planners regarding their technical and administrative feasibility.

Another riparian objective that the applicants propose to incorporate is additional areas of wetlands in the floodplain along the entire Silver Bow Creek corridor. This effort would enhance wildlife recovery in the floodplain. However, the applicant has not placed a line item cost in the application for this effort. There is little available space in the floodplain of Reaches D and E to incorporate wetlands due to the narrow, restricted corridor in these reaches. Consequently, wetland and floodplain enhancement efforts will have to be concentrated on the upstream end of Reach D and the downstream end of Reach E where the floodplain is sufficiently wide to accommodate wetland creation. Costs for wetland creation in the floodplain is estimated to be approximately \$15,000 to \$25,000 per acre depending on depth to groundwater and material disposal costs. The need for and ability to acquire water rights for additional wetland development has not yet been evaluated. At this time there is insufficient information to assist the technical and administrative feasibility of constructing these wetlands in Reaches D and E.

Land Acquisition

The Greenway will provide public access to the Silver Bow Creek corridor by acquiring lands or easements along the Creek. The land in and along Reaches D and E that are designated for access efforts total 116 acres. The GSD has initiated access negotiations with landowners along the first three miles of Silver Bow Creek. Based on these initial efforts, the GSD believes that in order to secure access along the entire SBC corridor a strategy for acquisition decisions needs to be developed. The GSD

requests \$200,000 to develop a comprehensive land acquisition plan. This plan would examine the SBC corridor with respect to existing and future land uses within and along the corridor and develop an implementation strategy for land easement/acquisition activities throughout the Creek. The GSD would rely on contracted services for technical support for this planning effort. Specific tasks this planning effort includes are:

- 1) identifying acquisition alternatives and associated costs;
- 2) conducting necessary appraisal, survey and title work; and
- 3) negotiating fee/easement acquisitions.

The majority of this land planning effort would cover areas downstream of Reaches D and E. The NRDP considers a land easement/acquisition planning at this time is imperative for Subarea One; however, it questions the need for such work at downstream locations at this time. As further addressed under criterion #3, insufficient information is available to assess the \$200,000 cost estimate. The NRDP considers the acquisition components of the project to be reasonably feasible but recommends significantly less money be allocated for this effort (see criterion #3).

Overall Technical Feasibility

A key component of the ecological and access features are coordination with the remedial process. Although there are uncertainties associated with the technical and administrative feasibility of the aquatic enhancement efforts, they are not considered significant given the planned effort to work out detailed design in conjunction with remedial efforts. It should be recognized that this coordination requires strict accounting of restoration vs. remedial costs to comply with terms of the Silver Bow Creek Consent Decree. Given the cost efficiencies that can be achieved with such coordination, DEQ remedial staff have indicated their willingness to participate in this cooperative effort.

2. Relationship of Expected Costs to Expected Benefits – Net Benefits

Costs proposed for Reaches D and E of Silver Bow Creek are \$1,426,755. The approximate breakdown of cost categories for the \$1.4 million is as follows:

- ecological features –\$408,000 – 29%
- access features – \$703,000 – 49%
- land acquisition/easements and planning – \$316,000 – 22%

Although the applicant seeks \$1.4 million for this year's budget, the GSD intends to continue this project along the entire 22-mile creek at an estimated cost of \$18 million. Of that amount, the applicant intends to request \$14.8 million from the Restoration Fund. This funding will be sought during the next 10 to 12 years, while

DEQ conducts remedial actions. The GSD intends to use other sources of funding for operation and maintenance costs. The breakdown of costs for the entire \$18 million project is as follows: ecological features—36%, access features—53%, and land acquisition/easements—11%.

The benefits gained from this project outweigh the associated costs. Benefits will be substantial for the public desiring access to the Silver Bow Creek floodplain. The public benefits of having trail access to the corridor include hiking, walking, fishing, picnicking and general outdoor activities. High public use of the trail is anticipated in Subarea One due to its proximity to Butte, and the expected use from people accessing the Rocker Station close to the midpoint of the area. Due to the anticipated high usage and desired multiple uses, the public will benefit from a 10-foot wide, paved trail. The project will also substantially benefit injured natural resources. Organic matter placement, plantings of floodplain trees and shrubs, and aquatic habitat enhancements will accelerate recovery of these resources. Organic matter placement will benefit both remedial and restoration planting efforts by augmenting borrow soil in functioning as plant medium. The restoration planting effort is critical given minimal remedial planting planned in the floodplain. Controlling public use in the corridor will assist in protecting restoration and remediation efforts. The project will benefit not only the citizens of Butte and Anaconda, but also citizens of Montana as a whole.

3. Cost-Effectiveness – Likely Cost Effective

The GSD considered two alternatives to the selected proposal – the no-action alternative and an alternative of delaying the project until Silver Bow Creek remedial efforts are completed in 10-12 years. The applicant adequately addressed why both of those alternatives are inferior to the selected alternative. The no-action alternative would result in significantly less vegetation along Reaches D and E for recreational and wildlife use and decreased aquatic habitat potential. The access components of the proposal would also be absent in a no-action scenario, thus making the Creek less accessible to the public. Delaying the project until remedy is completed would be inefficient and delay restoration of injured resources. Adding aquatic enhancements in the future would be substantially more expensive than coordinating them with remedial actions.

Trail Feature Alternatives

Certain trail and access features in Reaches D & E was listed as “later phases of development costs.” The \$590,000 in deferred costs, which are not included in the requested \$1.4 million, include secondary trails, trailside interpretive areas, and most significantly in terms of costs, a station called “Silver Bow Station.” These additional access costs could have represented an alternative to the present proposal. It is uncertain whether these deferred access features would qualify as restoration or replacement and whether they will be included in future Restoration Fund requests.

The NRDP has evaluated the need for a paved trail through Reaches D and E. Based on this evaluation, responses from the GSD, and the State's review engineer, paving the trail will be cost effective even though the costs are higher for asphalt. The cost for a hard, asphalt trail is about \$85,000 per mile. The cost for a firm, smooth crushed stone trail is about \$40,000 per mile and cost for a gravel trail is about \$15,000 per mile.¹⁹ The GSD justifies the need to pave Reaches D and E due to: the trail's designed multi-uses and expected high use in these reaches; compliance with standards such as those in the American Association of State Highway and Transportation Officials (AASHTO) and Americans with Disability Act (ADA); reduction in liability exposure; and the reduced maintenance costs and long-life of a paved trail compared to a non-paved trail. Due to these advantages of a paved trail, the NRDP agrees with the GSD that paving these reaches is appropriate.

The proposed trail asphalt thickness indicated in the application is four inches thick, which the NRDP consulting engineers consider excessive. Based on recent information on the success of utilizing two inches of asphalt on Butte trails, the GSD consultant has indicated that an asphalt thickness of two inches is presently planned for that component of the trail. This should result in a lower cost per foot for trail construction by about \$4/foot or approximately \$20,000 per mile. Thus \$40,000 total should be subtracted from the grant request.

The NRDP also considered an alternative of a narrower trail width than the proposed 10-foot trail with a 2-foot path on both sides. The advantages of a 10-foot trail compared to a narrower trail are similar to the advantages attributable to paving. A narrower trail will not safely accommodate two-way bike traffic and maintenance and emergency vehicles. Given the anticipated high use of the Greenway in Subarea One and its design as a multi-use trail, the NRDP considers the advantages of a 10-foot wide trail over a narrower trail outweigh the cost-saving advantage of a narrower trail, which is estimated to only be about \$6,000 per mile for a 2-foot width reduction.

Another consideration in trail and access feature design alternatives is how well the design balances the goals of enhancing the fish and wildlife habitat and populations in and along the SBC corridor and augmenting the public's use and enjoyment of the corridor via land acquisition and recreational trail and access feature development. The additional planting and controlled public access will increase wildlife habitat, security, and cover. But the more the recreational corridor is developed to accommodate multiple uses and high use, then the more likely wildlife use will be hindered. The NRDP believes that the expected high use of the trail in Subarea One given its proximity to Butte and Rocker urban area and the proximity of the Rocker access station to Reaches D and E justifies the proposed paved, 10' foot wide trail. The GSD has established a technical working group to collaboratively develop design and engineering solutions relative to both ecological and access features of the Greenway and indicated that for future reaches of the Greenway, proposed multi-use path designs will be based on consensus of this group and the status of public use.

¹⁹ *Surfacing Your Trail*, Rails-to-Trails Conservancy, 2001

Land Access Alternatives

The applicant has not yet determined the type of acquisitions to be pursued and the associated costs for Reaches D and E and further downstream reaches. Thus, it is impossible to judge whether other acquisition alternatives exist that would result in similar benefits for lower costs. However, the \$200,000 comprehensive planning effort for land acquisition the Greenway requests in this grant application is aimed at determining the most cost-effective manner to acquire public access to the SBC corridor. A specific component that the planning effort will address is acquiring access via the inactive Milwaukee railroad right of way. By acquiring this route, efficiencies will be gained by securing access with only one landowner rather a dozen landowners through Reaches D and E. Concerns of rail bed contamination and associated liability need to be addressed if the Milwaukee railroad option is pursued. The NRDP acknowledges the importance of this effort, but does not have sufficient details on how the \$200,000 cost estimate was derived and what it will cover. Therefore, NRDP recommends that this planning effort be addressed in another restoration grant or project development grant application. The NRDP does recommend leaving \$20,000 in the budget for land planning needs in Subarea One, including Reaches D and E. In addition, funding for acquisition in Reaches D and E, estimated at \$116,000, should be contingent upon NRDP approval of all land acquisition activities, including NRDP review and approval of all appraisals.

Ecological Feature Alternatives

It is difficult to assess whether the quantity of plants and organic matter listed in the ecological components are cost-effective. At some point, the additional costs associated with increasing revegetation efforts exceed the benefits created by those efforts. But determining that point is difficult, as there are no specialized revegetation formulas for these quantities. As discussed under technical feasibility, it is appropriate to defer development of the details of the restoration revegetation effort until after the remedy revegetation design is finalized. Because of the planned coordination with the remedial ecological contractor and MFWP, and due to the proven feasibility of revegetation in Reach A, the NRDP believes the proposed revegetation effort is likely to be cost-effective.

In addition to feasibility, cost effectiveness will be a factor in determining the detail design of enhanced streambanks in coordination with remedial design efforts. The \$10 per foot cost for bank enhancements is cost effective for the proposed minimal stream bank restoration effort. The NRDP's consulting stream ecologist, in coordination with MFWP, GSD and DEQ representatives, has offered the following modifications to the proposed design to better enhance aquatic habitat in Reaches D & E: 1) install rock structures in the narrow stream sections; 2) add additional pools; 3) increase the willow planting density; 4) add logs to the streambanks during construction; and 5) add woody debris to the floodplain. The proposed budget has an \$80,000 contingency that should be earmarked for these suggested modifications and any other additional aquatic enhancements that are determined feasible and cost

effective.²⁰ Other likely additional enhancements would focus on optimizing pool habitat and the stream width/depth ratio for aquatic life. As discussed in criterion #2 (technical feasibility), further evaluation will be needed by restoration and remedial planners to determine what additional restoration efforts are technically and administratively feasible and cost effective. The full costs for these efforts may not be presently available in the applicant's budget, however, the \$80,000 discussed above should cover the majority of these aquatic efforts.

Overall Cost Effectiveness

Most of the components for this project are cost effective, however, there are three cost items that the NRDP suggest be eliminated from or specially earmarked from the present budget. These are:

- 1) Due to the vagueness of the \$200,000 land-planning request, the NRDP is recommending that only 10%, or \$20,000 be approved for this effort at this time to focus on the time critical access planning needed for Subarea One. NRDP suggests that if more money is needed for this effort, then a separate grant application should be submitted.
- 2) Approximately \$80,000 resulting from adding designs and contingency costs on "coordination cost savings" for stream habitat restoration could be subtracted from the budget. Since these "cost savings" are not an actual cost, it does not make sense to add a contingency to the total request. However, if NRDP/DEQ/MFWP all agree that aquatic restoration costs should be more than the \$10/foot already set aside, then this money may be needed. As stated in this review, the possibility of this level of remedial coordination is unknown at this time. Thus NRDP is not recommending removing this amount from the total requested at this time, but is recommending that this money be earmarked for possible additional aquatic enhancements.
- 3) The \$40,000 that will be saved from changing the thickness of the trail from 4 inches to 2 inches should be removed from the budget.

These recommendations result in a budget decrease totaling \$220,000, (\$180,000 from land acquisition and easements category and \$40,000 from the trails category). This would result in a total request of \$1,206,755 for Reaches D and E.

4. Environmental Impacts – No Significant Adverse Impacts

Development of the Greenway presents no significant adverse impacts to the environment. The applicant provided a thorough evaluation of all environmental impacts and acknowledges the permits necessary for wetland protection and

²⁰ Because the applicant has placed contingencies and design overhead costs on the estimated \$238,000 cost savings, \$80,000 can be set aside for aquatic enhancements beyond the \$50,000 already budgeted for aquatic enhancements.

floodplain management impacts. The planned coordination of stream crossings and the trail with remedial actions will minimize the duration of short-term impacts to surface water quality associated with construction activities.

A potential exists for impacts to recently revegetated areas from increased public access to the floodplain. The access management components of the project, however, are likely to reduce these potential impacts. The Greenway trails and trailheads provide access control points and will also serve to minimize motor vehicle travel in the area. The NRDP concurs with the applicant's evaluation that, once constructed, the Greenway will provide and protect beneficial impacts to environmental resources, such as providing aquatic and wildlife habitat, and the public's use of them.

5. Human Health and Safety Impacts – No Significant Adverse Impacts

Dust and noise impacts may occur during construction. The applicant indicates dust impacts will be mitigated. The planned coordination with remedial action will shorten the duration of potential impacts. Most construction activities will occur away from residential areas. The NRDP has concerns about pedestrian safety with railroad activity in the corridor. Even though rail use is light, it is imperative that rail safety is fully considered during implementation of the project.

6. Results of Superfund Response Actions – Positive Coordination

This project will complement and enhance remedial actions on Silver Bow Creek. Coordination with remedy is imperative to the success of the project. The applicant intends to maximize that coordination through use of the DEQ remediation design and construction contractors on revegetation and aquatic enhancement activities. Access features will also be designed to complement remedial actions. DEQ remedial design and construction contractors will be used to design and construct the access features that, from a practical and economic standpoint, should be constructed simultaneously with remedial actions. The positive coordination of the Greenway with remedial actions is also reflected in the Streamside Tailings Operable Unit Record of Decision regarding incorporation of components consistent with a recreational corridor land use along Silver Bow Creek.

7. Recovery Period and Potential for Natural Recovery – Reduces Recovery Period

Organic matter placement in the backfilled materials will accelerate recovery of vegetation in the floodplain of Reaches D and E. Plantings of floodplain trees and shrubs will improve the quantity and diversity of wildlife habitat. Aquatic enhancements may accelerate the recovery of fisheries by pool creation and other habitat efforts. A major component of this plan is access management, which will accelerate recovery of all the injured resources by properly controlling public use.

8. Applicable Policies, Rules and Laws – Consistent/Sufficient Information Provided

The applicant's technical narrative identifies the necessary permits and intent to acquire them. The applicant's statements indicating that permit exemptions under CERCLA would apply to restoration activities are inaccurate. The NRDP has informed the applicant of this inaccuracy and they have acknowledged the need for acquiring the indicated permits. Reasonable assurance is also provided that any easement, deed and/or right-of-way necessary for this proposal will be obtained. Butte-Silver Bow and Anaconda-Deer Lodge city-county governments have both passed ordinances authorizing the establishment of the multi-jurisdictional Greenway District and indicated full endorsement of this proposal. Also of note is that in 1995, the City and County of Butte-Silver Bow created an open space corridor, via the County's *Comprehensive Land Use Master Plan*, along a quarter mile of both sides of Silver Bow Creek.

9. Resources of Special Interest to the Tribes and DOI – Beneficial Impact

The project is expected to have a beneficial impact to the interests of both the Tribes and DOI because of improved wildlife and aquatic resources. The DOI has indicated the project would have no adverse impact on resources of special interest to the DOI.

The Tribes have not provided specific information regarding resources or sites of special interest to the Tribes in Reaches D and E. In the pilot year proposal, the Tribes deferred review of Tribal cultural and/or religious sites related to this project until detailed plans are available during the project implementation phases. The NRDP can accommodate this Tribal review in its grant agreement with the GSD.

Stage 2 Criteria

10. Project Location – Proximate

All the restoration activities associated with this proposal will be conducted at or near the injured resource areas of Silver Bow Creek. The trail on Reach D will be in or near the SBC floodplain. Due the narrow corridor in Reach E, the trail route will be out of the SBC floodplain and follow a course about 500 feet from the Creek. This route will change if the Milwaukee railroad line is used as a trail.

11. Actual Restoration of Injured Resources – Restoration/Other

Some project components that constitute actual restoration are: 1) planting additional plants and adding organic matter to the cover soils to enhance wildlife habitat; and 2) enhancing streambanks to accelerate development of aquatic habitat.

Other project components contribute to restoration: 1) purchase of land or conservation easements along the Silver Bow Creek floodplain; and 2) protection of

restored riparian areas through controlled public access. Access features primarily constitute replacement of lost services.

12. Relationship between Service Loss and Service Restoration – Same and Similar

This project will provide some of the same services that were lost as a result of natural resource injuries. Those services include fishing, hiking, birdwatching, wildlife viewing, and open space enjoyment. Although the project will also provide services that are different than the services lost or impaired, such as skating and biking, the project's focus is to provide some of the same or similar services as those lost or impaired.

13. Project Beneficiaries and Collateral Benefits – Original and Collateral

The Greenway project will benefit the residents of the Butte and Anaconda areas and the citizens of Montana as a whole. A clear and direct relationship exists between the benefits derived from the project and the user groups who have lost use of injured resources. Benefits to injured aquatic and terrestrial resources will also result from the actions proposed.

14. Public Support – Broad

The public support for this project is strong as evidenced by the community planning efforts that have been devoted to the project and by letters of support submitted in last year's application and during the public comment period on the *Pilot Year 2000 Restoration Work Plan*. Since the GSD was formed over three years ago to help implement the project, it has received wide public support. The 1998 Design Report, which involved considerable public input, has been presented to the public a number of times. The public response to this document and the entire Greenway concept has been positive. One letter of support is included in the application from the Butte-Silver Bow Council of Commissioners. However, due to the large public support shown in the past for the entire project, the NRDP characterizes public support as broad. The heavy use and popularity of the nearby Blacktail Creek Trail is an indication of the likely popularity of the Greenway.

During the application review period, the State received nine comment letters from Butte citizens, which noted both positive and negative observations about the proposal. Most of these letters support the positive benefits of the enhancement of injured resources by implementation of the proposed ecological components. However, most of the letters questioned the need for the proposed infrastructure along Silver Bow Creek corridor such as a paved, ten-foot trail and railroad bridge improvements. These letters also expressed concern about the cost of infrastructure proposed throughout the 22-mile corridor and that costs for direct restoration components may be shortchanged.

Four members of the UCFRB Restoration and Remediation Education Advisory Council also provided letters to the NRDP and GSD indicating their support of the overall Greenway project but suggesting modifications to project design and budget. These modifications include increasing streambank enhancements and obtaining MFWP input and approval of these enhancements; not paving this section of the trail and using “softer” trail surfaces such as gravel instead; reducing the scope and budget of the land planning effort; and reducing the width of the bridges. Another Council member’s letter indicated support of the entire project and the specific trail design proposed by the GSD.

During the public comment period on the *Draft Work Plan*, 6 persons and 4 entities (Butte YMCA, Butte Chamber of Commerce, BSB, and the GSD) commented in support of the project. One person commented in support of the ecological components of the Greenway but in opposition to spending on access features that are considered to contradict the natural state of the corridor.

15. Matching Funds – None

The GSD identifies matching funds that are included in the pilot year proposal and subsequent proposals. For this proposal, there are no matching funds. The NRDP does not consider the applicant’s estimated cost-savings resulting from coordination with remedy as matching funds because they are based on the possibility that remedial actions would be undone to accommodate restoration actions later, which is speculative and questionable.

16. Ecosystems Considerations, Coordination, and Integration – Coordinates and Integrates

The project coordinates positively with remedy and does not interfere with on-going litigation. It fits within a broad ecosystem context as it involves improvements to the headwaters of the Clark Fork River. Creating enhanced riparian and aquatic habitat will not only benefit Silver Bow Creek, but will also benefit the Clark Fork River. Seeds from grasses, trees and forbs will be a continual source for colonizing vegetation downstream.

17. Normal Government Functions – Outside Normal Government Function

None of the project activities entail those that a governmental entity is obligated by law to conduct or would normally conduct. DEQ and EPA have determined the proposed revegetation and aquatic efforts to be beyond the scope of remediation.

Land Acquisition Criteria

18. Desirability of Public Ownership – Major Benefits

Public access is a fundamental objective of this proposal. Public ownership of or interest in the Greenway corridor lands provides major benefits to injured natural resources and provides lost services as previously described. The project will enhance restoration of fish and wildlife habitat along Silver Bow Creek. It will provide additional opportunity for a variety of recreational services in or near the Butte, Anaconda, Opportunity, Rocker and Ramsay communities that were greatly impacted by natural resource injuries. The comprehensive land acquisition strategy plan will greatly assist the GSD in planning future land needs.

19. Habitat Protection – Good

Presently minimal or no aquatic or wildlife habitat occurs in or along the creek. Provided that remediation and restoration efforts are successful, good habitat will be provided in the future. The NRDP plans on coordinating future habitat efforts with its consultants and with MFWP to insure habitat enhancements efforts are indeed successful.

20. Spillover Benefits – Major

The purchase of land or easements covering approximately 116 acres of Silver Bow Creek's floodplain in Reaches D & E provides major benefits to injured natural resources through the restoration components of this proposal and through the protection of restored areas by controlling public use. The entire Silver Bow Creek injured area will also benefit from land acquisition efforts in Reaches D and E and from the comprehensive land acquisition plan.

21. Access to Public Lands – Facilitates

This project will create new and enhance existing public access by changing some private lands into public ownership. Public access to the Silver Bow Creek recreational corridor will be accomplished either through easements or land purchases.

22. Price – Uncertain

The price for land parcels or easements has not been determined; therefore, it is uncertain how they compare to fair market value. The project applicants have based land acquisition costs on the land purchases between the State, ARCO and Silver Bow Creek landowners that have averaged about \$1000 per acre. The NRDP considers this to be a reasonable basis for estimation. The GSD intends to coordinate all land acquisition activities with the NRDP. The NRDP's approval of all land

acquisitions before they are completed, as well as appraisals, should be a condition of funding and can be required in the grant agreement.

Rocky Mountain Elk Foundation – Watershed Land Acquisition

Project Summary

The Rocky Mountain Elk Foundation (RMEF) holds a purchase option to acquire approximately 32,500 acres in the UCFRB from Y.T. Timber via a phased acquisition over 4 years, from December 2000 to December 2003. The property is located between Anaconda and Georgetown Lake and includes the bulk of the Warm Springs Creek watershed not already in public ownership. The property includes habitats for native trout, critical big game winter range, alpine lakes, and wetlands. To acquire this property for public ownership, RMEF seeks a total of \$22.5 million total in state and federal grant funds to acquire approximately 9,000 acres for state ownership and management by Montana Fish, Wildlife, and Parks (MFWP) and 23,500 acres for federal ownership and management by the U.S. Forest Service (USFS).

In 2000, RMEF received \$3,764,231 in UCFRB Restoration funds to acquire 5,790 acres, approximately 65% of the lands slated for state ownership. This is referred to as “Phase 1” of the acquisition. As “Phase 2,” RMEF is now applying for \$2,065,700²¹ in Restoration funds to acquire the remaining 3,181 acres. The Phase 1 and 2 acquisition lands consist of two parcels that provide prime wildlife habitat and numerous recreational opportunities – the Garrity Mountain parcel (6,706 acres) and the Clear Creek parcel (2,265 acres). In the Phase 1 transaction, the State acquired 4,343 acres of the Garrity and 1,447 acres of the Clear Creek parcels, respectively. The option agreement allows Y.T. Timber to conduct timber harvest activities on the acquisition lands until December 2006 subject to terms of a timber management policy. The following criteria evaluation focuses on the state acquisition. When applicable, benefits for the proposed combined state/federal acquisition are also considered.

Stage 1 Criteria

1. Technical Feasibility – Reasonably Feasible

RMEF has successfully orchestrated similar state/federal land acquisitions and completed the major steps involved in brokering this purchase. Those steps include negotiating an option agreement and timber harvest policy with Y.T. Timber; obtaining a full appraisal, mineral estate report, and hazardous materials survey; conducting the necessary coordination with MFWP and USFS; completing the necessary access and title work for the Phase 1 lands; and successfully executing a real estate purchase agreement with the State for the Phase 1 lands. The land acquisition is well-planned, as demonstrated in the thoroughness of the application materials. Other than funding, uncertainties exist regarding access to the Clear Creek

²¹During the finalization of title documents, it was determined that the actual amount to be funded should be \$2,067,673 based on final acreage.

parcels further described under criterion #21. RMEF is also trying to obtain the mineral rights that are held by other owners besides Y.T. Timber. Remaining title work involves obtaining the title commitment for the Phase 2 lands. Based on preliminary title work, there are no significant exceptions associated with these lands.

In the summer of 2001, RMEF will receive \$5 million in federal funds which will enable acquisition of approximately 7,000 acres of the federal acquisition. This gives added certainty to RMEF's ability to meet the phased funding terms of the option agreement. Given the RMEF's progress to date on this complex transaction and experience with other similar transactions, this project is considered reasonably feasible.

2. Relationship of Expected Costs to Expected Benefits – Net Benefit

The total cost for the entire State acquisition (Phase 1 and 2) is \$5.83 million based on a cost per acre of \$650/acre. In 2000, RMEF received \$3.764 million in UCFRB Restoration funds to acquire 5,790 acres, or approximately 65% of the lands slated for state ownership. RMEF is now applying for \$2.066 million in Restoration funds to acquire the remaining 3,181 acres.

MFWP will incur undetermined operation and maintenance costs in assuming ownership and management responsibilities. RMEF has committed \$50,000 in a stewardship fund for MFWP management of the state acquisition lands and has committed another \$50,000 if the Phase 2 acquisition is funded.

By acquiring public ownership of high quality fish and wildlife habitat and recreational lands, the project will protect these areas from development that might be detrimental to natural resources, provide public access, and maintain and enhance natural resources through conservation-focused public management of those resources. Major public benefits attributable to the entire project include:

- Public access to lands that provide an array of services, including hunting, fishing, wildlife viewing, hiking, bird watching, and other general recreational opportunities.
- In the long-term, maintenance and enhancement of habitat for elk, mule deer, whitetail deer, bighorn sheep, moose, black bear, mountain lions and mountain goats. The acquisition would help preserve an expansive, continuous forested habitat between the Flint Creek and Pintlara ranges and forested areas to the south for movement of bighorn sheep, moose, wolverine, and lynx.
- In the long-term, maintenance and enhancement of native trout habitat. Bull trout and westslope cutthroat trout are found in the Storm Lake, Twin Lakes, Barker and Cable creeks. The Warm Springs Creek Drainage is designated a core area for

the recovery of bull trout in the UCFRB and is the most important spawning tributary for brown trout in the Upper Clark Fork River.

- The protection of a portion of the Warm Springs Creek watershed from potential detrimental impacts associated with sale and commercial development of the property. The project area includes lands that drain into the two municipal watersheds, Storm Lake (industrial water supply) and Hearst Lake (municipal water supply). With this protection, the water quality of Warm Springs Creek will be maintained or improved, which could, over the long term, assist the restoration of injured aquatic resources of the Upper Clark Fork River.
- Preservation of open space and scenic views between Anaconda and Georgetown Lake.

Two distinct parcels make up the proposed lands for State acquisition – the Garrity Mountain parcel (6,706 acres) and the Clear Creek parcel (2,265 acres). Both these parcels offer the general benefits described above: watershed protection; maintenance or enhancement of a variety of fish and wildlife habitat and species; access for fishing, hunting, wildlife viewing, hiking and other recreational activities; and open space and scenic views. The Garrity Mountain parcel provides critical winter range for elk, deer, and bighorn sheep as well as important buffer habitat to the winter range. Although the Clear Creek parcel does not provide critical winter game habitat equivalent in quality to that of the Garrity Mountain parcel, it offers the benefits of protection of the Hearst Lake municipal water supply, winter range for mountain goats, and habitat for elk, moose, and deer, primarily during summer.

A strong aspect of this project is that it provides substantial recreational opportunities, such as hunting and fishing opportunities, near Anaconda. The project area had once been part of the public domain and of great use in the past by Anaconda area residents. Some negative impacts to environmental resources will occur from the planned timber harvest activities as detailed under criterion #4. The State may have to spend monies restoring some of the harvested areas. However, the project provides environmentally protective conditions that would not be imposed without the option agreement. In evaluating the long-term benefits associated with the entire acquisition or only the proposed State acquisition, the NRDP considers the benefits derived from the project to outweigh its costs.

The comparison of benefits to costs is even more favorable when considering the specific 2001 request of \$2.066 million to acquire the remaining 3,181 acres and complete the State acquisition. Acquiring the remaining portion will:

- provide the connected acreage to the proposed federal acquisition;
- add sections that contain parts of the major access road to the Garrity parcels;

- add the remaining portions of the critical big game winter habitat on the Garrity parcels;
- add the portion of the Clear Creek parcels that drain into the municipal watershed; and
- complete the acquisition of the 20-acre parcel that provides MFWP vehicular access to the parcel on Clear Creek Road.

The completion of the State acquisition also increases the likelihood of further federal funding. Acquisition of the Phase 2 acres is critical in order to obtain the full benefits of the state acquisition summarized above.

3. Cost-Effectiveness – Likely Cost Effective

RMEF compared the benefits/costs of no action, entire federal ownership, and entire state ownership to the proposed state/federal ownership. The no-action alternative involves timber harvest without the additional restrictions provided by the timber harvest policy and subsequent sale to a private entity. This could result in commercial development that could negatively impact the natural resources of the area and the public's use of them. The selected alternative of joint state/federal partnership has the advantage of cost-sharing and splitting the properties based on desired State (Garrity Mountain parcel) and federal ownership (parcels closest to existing USFS lands). Therefore, the selected approach is considered cost-effective compared to these alternatives presented in that it accomplishes greater benefits for the same costs.

Other possible alternatives for this specific acquisition not covered by the applicant include: 1) varying levels of timber harvest activities and the associated varying levels of price (e.g. a higher price per acre for lands with more timber remaining; 2) a conservation easement or lease agreement; or 3) an acquisition involving only the Garrity parcels. Since the NRDP was not involved in the negotiations with Y.T. Timber and the option agreement negotiations were completed before the grant application submittal, the NRDP does not know whether Y.T. Timber would consider alternate timber harvest volumes or the other indicated alternatives. RMEF has indicated these alternatives were not acceptable to Y.T. Timber. Assuming that Y.T. Timber would only consider a sales agreement covering the proposed acreage that allowed the indicated timber reservation, and given that the price is below the appraised value, the NRDP does not believe a suitable alternative exists that will produce similar benefits at lower costs for this specific transaction.

From a broader cost-effectiveness perspective, the question to consider is whether other UCFRB land acquisition alternatives exist to this specific acquisition that might

provide similar benefits to natural resources and the public's use of them at lower costs. Such an evaluation is difficult since a comprehensive planning effort that identifies critical areas within the UCFRB for public ownership and management has not been conducted. A 1998 MFWP list of potential land acquisitions in the UCFRB does not indicate any alternative comparable to the Watershed Land Acquisition in terms of magnitude of the acreage and associated benefits from a combined federal/state acquisition. Nor is the NRDP aware of another readily feasible acquisition within the UCFRB in such close proximity to injured areas and affected communities that might derive the substantial benefits this project does given the cumulative benefits of the state/federal acquisition and the long-term protection it provides of a critical spawning tributary of the Clark Fork River. Thus the project is considered likely to be cost-effective.

4. Environmental Impacts – No Significant Adverse Impacts (in the long term)

This analysis evaluates potential impacts associated with both the acquisition of these lands for public ownership, use, and management, as well as activities that would be allowed to occur on the property under terms of the option agreement. Since this land acquisition involves a timber harvest reservation, it is appropriate to consider environmental impacts of timber harvest activities because the timber harvest will affect the condition of the land to be acquired and managed by the State. RMEF identifies the long-term beneficial environmental impacts of the acquisition and some potentially short-term adverse environmental impacts associated with the timber harvest activities. Their analysis summarizes MFWP's November 2000 environmental and socio-economic assessments on this acquisition. Both are provided in Appendix D. The NRDP concurs with these analyses and the conclusions of MFWP that the acquisition will not result in a cumulative significant adverse impact to the environment and will, in the long-term, have positive cumulative effects for fish, wildlife, recreation, and open space. The following section summarizes these environmental assessments.

From the standpoint of precluding potentially harmful development, this project will have beneficial impacts to soil, air, water (surface water and ground water), wetlands, vegetation, fish and wildlife habitat and species, and aesthetics for reasons already discussed. Potential impacts to environmental resources can occur with the increased public access the project provides (e.g. high intensity camping or use of off-road vehicles in fragile areas). Through the use of conservation-oriented management plans, the MFWP and USFS can reduce the likelihood and magnitude of these impacts. The remaining impact summary focuses on the timber harvest activities that would be allowed to continue under terms of the option agreement.

Under the terms of the option agreement, Y.T. Timber retains the right to harvest 30 million board feet (MMBF) of merchantable timber, following an agreed-upon timber

harvest policy, until December 2006, with an additional two years allotted to complete normal timber harvest cleanup activities. Approximately 20 MMBF has already been harvested on the entire property since 1981. The estimated remaining merchantable timber after harvest activities are completed on the entire property is 30 MMBF. Although Y.T. Timber has until December 2006 to complete harvest operations, the company intends to concentrate their harvest activities on the state parcels first before the federal parcels and may complete them in the next two years.

Of the 30 MMBF timber reservation, approximately 5.2 MMBF will be harvested on the proposed State parcels. To date, less than 10% of this volume has been harvested. Some 2,000 acres of non-forested, grassland habitat on the Garrity Mountain parcel will not be harvested. Almost all of the Clear Creek parcel will not be harvested due to the steep terrain, the low quantity of merchantable timber, and the restrictive covenants associated with this parcel. A potential exists for up to 365,000 board feet to be harvested from this parcel via helicopter logging; however, whether this will occur is still uncertain.

The timber harvest policy has provisions that, in addition to the 30 MMBF cap and 7-year harvest timeframe restrictions, require Y.T. Timber to: 1) meet all applicable laws and regulations governing harvest operations, which primarily include water quality laws and rules and the Montana Stream Side Zone Management Act; 2) comply with State's voluntary best management practices for forestry; 3) comply with additional restrictions in the Storm Lake and Twin Lake Creek drainages that support bull trout fisheries; 4) emulate previously employed harvest methods considered acceptable by state and federal forestry officials; and 5) meet specified road construction standards. The timber policy also offers the opportunity for RMEF, USFS, and MFWP to monitor harvest methods. It is also agreed that the State, once it acquires the property, will succeed to the rights of RMEF to enforce the timber harvest provisions. The MFWP, RMEF, USFS, and Y.T. Timber have signed a memorandum of understanding stating that the timber harvest policy is "generally acceptable and will protect the wildlife and natural resources associated with the Property."

Slash disposal will cause temporary air quality impacts due to burning. Timber harvest activities will impact visual quality until forest regeneration occurs. Harvesting of up to 5.2 MMBF and construction of approximately 17 miles of roads on the State Acquisition has the potential to increase erosion and impact water quality and quantity. Impacts may occur to Barker Creek and Big Gulch from increased sedimentation. The removal of 5.2 MMBF of timber has the potential to impact the timing and duration of spring runoff due to the removal of forest canopy. The applicable rules and laws and additional restrictions provided in the timber harvest policy are intended to prevent significant impacts to surface waters and fisheries from the proposed harvest activities. These restrictions are designed to reduce excessive runoff and sedimentation and maintain shade in the riparian area. Even with the

indicated intent to accelerate harvest activities on state acquisition lands, the potential impacts to surface waters and fisheries are judged to be minor, assuming provisions of the timber harvest policy are followed.

The proposed timber harvest will impact wildlife habitat, use and distribution for decades until forest regeneration occurs. Generally, species dependent on mature forest habitats will be negatively impacted. Elk security and winter thermal cover will be reduced due to timber removal and road construction. Alternately, some species such as mule deer may benefit from the opening of timber canopy and increased shrub production. Negative impacts to wildlife habitat could result in more restrictive hunting opportunities.

The construction of approximately 17 miles of logging road may increase the noxious weeds and erosion along roadbeds and road cuts. Y.T. Timber will broadcast seed the roadways at the completion of their harvest activities on a one-time basis. The MFWP will need to address weed control and native vegetation reseeding as necessary along roadways and other disturbed sites in its management plan for the acquired lands. MFWP will also need to address issues such as reseeding roadways and creek crossings to reduce erosion and closing roads to deal with the lost cover for wildlife until forest regeneration occurs. Insufficient information is available at this time to determine the magnitude and costs of these efforts following the completion of timber harvest.

RMEF notes that the Y.T. Timber purchased the property to harvest timber for its sawmills and intends to conduct additional harvest activities regardless of this transaction. They conclude that identified short-term adverse impacts would be greater if RMEF did not hold a purchase option agreement with Y.T. Timber that includes constraints to timber harvest volumes and techniques. The NRDP is not privy to specific information regarding Y.T. Timber's business plans and thus cannot specifically predict the volume or type of harvest activities that would occur without this transaction. What is certain, however, is that the conditions that would occur under the proposed options agreement provide greater protection to environmental resources than would be applicable should Y.T. Timber harvest in the absence of these conditions.

5. Human Health and Safety Impacts – No significant adverse impacts

A potential safety hazard exists with public use of roads on the Garrity parcels during timber harvest operations. The MFWP management plan in effect for the Phase 1 lands addresses this hazard by restricting vehicular access on the Garrity parcels to weekends, when logging activity will not occur. A similar restriction would likely apply to Phase 2 lands. Thus these impacts are not considered major.

6. Results of Superfund Response Actions – Consistent

This project will not duplicate or interfere with results of a completed, planned, or anticipated Superfund response action. Available sampling data does not indicate the potential for Superfund response actions in the state acquisition land. It integrates with future response actions because it protects headwater streams upgradient of injured aquatic resources.

7. Recovery Period and Potential for Natural Recovery – No Effect on Recovery Period

This project, by itself, will not affect the timeframe for recovery of injured resources. It has potential to enhance restoration of injured natural resources in conjunction with other restoration activities as described under criterion #11.

8. Applicable Policies, Rules and Laws – Consistent/Sufficient Information Provided

RMEF has already provided many of the needed land transaction documents and arranged for completing the remaining tasks. RMEF has also coordinated with local entities and properly addressed the applicable policies, rules, and laws associated with this transaction, such as those that cover the proposed timber harvest activities.

9. Resources of Special Interest to the Tribes and DOI – Beneficial

The DOI has indicated that the long-term protection afforded through an easement on the property would likely benefit migratory birds, listed species, and their habitat and indicated its strong support for funding this project. Public ownership and management of the property will preclude potentially detrimental development and maintain or improve terrestrial and aquatic habitats. The property supports the bull trout and lynx; both listed as threatened under the Endangered Species Act; the westslope cutthroat trout, a species of special concern; and the wolverine, a rare species. The Warm Springs Creek Drainage is designated a core area for the recovery of bull trout in the UCFRB.

In its comments on the *Pilot Year 2000 UCFRB Restoration Work Plan*, the Tribes did not comment specifically on this project. The Tribes provided a letter of public support for this project for the Pilot Year application.

Stage 2 Criteria

10. Project Location – Within the Basin and Proximate

The lands proposed for State ownership between Anaconda and Georgetown Lake are close to the Smelter Hill (about 1.5 miles), Stucky Ridge (about 2.0 miles), and

Mount Haggin (about 4.5 miles) injured areas. Thus, this project is considered proximate to injured areas.

11. Actual Restoration of Injured Resources – May Contribute to Restoration

Although this project does not specifically restore an injured area, it has the potential to enhance the recovery of fish and wildlife populations in nearby injured areas in conjunction with other restoration actions. Public ownership and management will maintain or enhance the fish and wildlife habitat and species in the project area. Warm Springs Creek is a primary tributary of the Upper Clark Fork River and is the most important spawning tributary for brown trout. Maintenance or enhancement of water quality and fisheries habitat in the Warm Springs Creek watershed headwater streams that support native trout could possibly, over the long term, contribute to improved water quality and fish populations in the Clark Fork River. While the project will not enhance the restoration of wildlife habitat in the nearby-injured areas, the acquisition may enhance wildlife populations whose range might extend to the nearby-injured areas given initiation of restoration efforts in those areas.

12. Relationship between Service Loss and Service Restoration – Same and Similar

The project area includes structurally diverse habitats that are similar to those of the terrestrial injury areas – upland areas that are a mix of native grasslands and forests and wetland and riparian communities. Given these similarities in habitat and the proximity of this area to the injured areas, a close link exists between services lost and services replaced by this project. The fishing, hunting, wildlife viewing, bird watching and general recreational services to be provided by this project are substantially equivalent to some of the services lost due to natural resource injury in the UCFRB including the Anaconda Uplands. This project will also provide some services that are similar to but not the same as lost services, such as migratory bird habitat that was once available in the area now occupied by Opportunity Ponds.

13. Project Beneficiaries and Collateral Benefits – Original and Collateral

This project primarily benefits natural resources outside injured areas and the services these resources provide. In the long term, it may also benefit injured natural resources and lost or impaired services provided by those injured natural resources as described under criterion #11. Beneficiaries of the services provided by this project include the same groups originally harmed by injury to natural resources in the UCFRB. In particular, those who can no longer enjoy the wildlife habitat of the injured Anaconda Uplands and Opportunity Ponds can use the project area for hunting, fishing, and wildlife viewing and general recreation. The fish and wildlife species to be protected and enhanced by this project are the same species that once occupied the injured areas of the Clark Fork River (bull trout, westslope cutthroat) and damaged Anaconda Uplands (elk, deer, moose, bighorn sheep). The open space and scenic views protected by the acquisition benefit an even broader user group.

14. Public Support – Broad

The application indicates strong public support from numerous and varied entities and individuals. Groups supporting the entire acquisition in the Pilot Year 2000 grant application included the Anaconda-Deer Lodge County Commission and Planning Department, MFWP, the Montana Fish, Wildlife, and Parks Commission, the George

Grant Chapter of Trout Unlimited, Clark Fork Pend Oreille Coalition, Montana Wilderness Association, Skyline Sportsman's Association, the Montana Wildlife Federation, Montana Coalition for Appropriate Management of State Lands, Anaconda Snowmobile Club, Public Lands Access Association, and the Confederated Salish and Kootenai Tribes. Three of these letters, while indicating overall support of the project, noted concerns regarding the timber reservation and the need to focus management for ecological values and restoration. In addition to these groups, 181 individuals signed a petition supporting the land acquisition and 15 individuals/families also wrote letters of support. The 2001 grant cycle application included three additional letters for support from the Anaconda Chamber of Commerce, the Montana Wildlife Federation, and MFWP.

During the public comment period on the Pilot Year 2000 application, the State received numerous comments about this project. Eighteen persons or entities commented in support of funding this project. Most of them also recommended funding the entire project in the Pilot Year 2000 grant cycle through the commitment of \$2.3 million of next year's available funding. Three individuals or entities expressed concerns regarding the timber harvest provisions associated with the Watershed Land Acquisition. One entity suggested more detailed scrutiny of the timber harvest aspects of the project.

During the public comment period on the *Draft Work Plan*, 12 persons and 3 entities (Montana Wildlife Federation, RMEF, and National Wildlife Federation) commented in support of the project. Three individuals commented in opposition to project funding: two because the project was not considered to address mining impacts, and the other because keeping the land in private ownership was considered to better support the tax base. Given that the majority of the public comments received via letters in the application or during the comment period are in support of this project, public support is characterized as "Broad."

15. Matching Funds – None to Minimal (State acquisition)/High (entire acquisition)

From the standpoint of only the 9,000 acres proposed for State ownership, the matching funds are none to minimal. RMEF has spent a total of \$312,000 to date on transaction costs and expects to spend an additional \$95,000 on the project for a total of \$407,000. This total includes \$50,000 RMEF has already set aside for MFWP to cover its management costs and the additional \$50,000 RMEF plans to set aside if the Phase 2 acquisition is funded. It also includes a \$100,000 option payment that is only

a cost to RMEF if RMEF does not meet the terms of the option agreement. If funding for this acquisition is approved, RMEF will meet those terms and receive a \$100,000 credit against the purchase price. However, it is unlikely that RMEF will incur net transaction costs. Although the difference between RMEF's total purchase costs and the government's purchase costs is unknown at this time, considering that, under the terms of the option agreement, Y.T. Timber will donate to RMEF about 18% of the total acreage slated for state and federal purchase, RMEF is likely to recoup its costs and profit from the entire transaction.

For the entire Watershed Land Acquisition Project involving the purchase of 32,500 acres, \$5.83 million is requested from the UCFRB Restoration Fund and \$16.675 million is requested from the federal Land and Water Conservation Fund, \$5 million of which was awarded to the project last year. Thus, from the standpoint of the entire acquisition, matching funds are high (73%).

16. Ecosystem Considerations, Coordination, and Integration – Integrates

This project does not specifically coordinate with other ongoing or planned restoration or remediation actions within the UCFRB nor does it interfere with any such action, including the State's Restoration Plan or on-going litigation. The project fits within a broad ecosystem context. The project provides an expansive, continuous forest habitat connecting the Flint Creek and Pintlar mountain ranges. Having this large area protected from incremental habitat loss and fragmentation should help maintain healthy wildlife populations. From an ecosystem standpoint, protecting the headwaters of Warm Springs Creek, an important tributary to the UCFRB, is an important step in restoration as it helps reduce additional detrimental impacts to downstream, injured resources. Finally, the protection of the significant fish and wildlife habitat as described previously offers benefits to the UCFRB ecosystem.

17. Normal Government Functions – Outside Normal Government Function

MFWP is involved in land acquisitions through the Habitat Montana Program and through other funding sources such as grant funds. However, MFWP is not specifically responsible for acquiring lands in the UCFRB, nor does it receive funding for such acquisitions in the normal course of events. The acquisition of the Garrity Mountain Property has been a MFWP priority since 1996 but has not been acted on due to lack of funding and other statewide commitments. It is unlikely the State could acquire this property through its normal agency funding, and certainly not within the time frame of the negotiated options agreement. MFWP has not requested use of Restoration Funds to cover future land management costs. RMEF has already provided \$50,000 for MFWP's management costs and will commit another \$50,000 if the Phase 2 state acquisition is funded.

Land Acquisition Criteria

18. Desirability of Public Ownership – Major Benefits

Regarding impacts to tax revenues, the MFWP is statutorily required to pay property tax; therefore, the land proposed for acquisition by the State will generate standard tax revenue. The USFS makes payments in lieu of taxes, which are less than the current tax rate for these lands that is paid by the present owner.²² Y.T. Timber, Inc. is marketing portions of their property along Highway 1 separately from the Watershed Land Acquisition, which will create some additional tax revenue if buyers develop it. RMEF representatives met with the Anaconda Deer-Lodge County Commissioners last year to describe the project and discuss the fiscal implications to the counties. The Commissioners have provided a letter of support for the project that is included in the Pilot Year 2000 application.

Public ownership of this Watershed Property will provide replacement of lost or impaired services as described under criterion #12 and has the potential to benefit injured natural resources as described under criterion # 11. The project offers protection of the headwaters of an important tributary to the Clark Fork River and offers high quality hunting, fishing, wildlife viewing and general recreational opportunities in close proximity to injured areas and the UCFRB communities that were greatly impacted by natural resource injuries. For these reasons, public ownership is considered to offer significant benefits to injured natural resources and lost or impaired services.

19. Habitat Protection – Exceptional (in the long term)

The Watershed Property has a diversity of habitats including riparian, wetland, forest, grassland, lakes, and streams and supports a variety of fish and wildlife species. An estimated 2,000 acres of riparian or wetland habitat exist on the entire property in the form of lakes, ponds, streams, and wetlands. The project will benefit species of special concern as described under criterion #9. RMEF states that, according to MFWP, the quality of the habitat on the State acquisition is good to excellent. The wildlife habitat will be diminished from timber harvest activities as described under criterion #4. With forest regeneration in harvested areas, the acquisition area will offer excellent habitat values, especially in combination with adjacent federal public lands.

²² Payment in lieu of taxes (PILT) formulas are complex and vary from year to year. Although the State does not have information regarding the exact amount tax revenues might decrease due to PILT payments on federal lands acquired, based on information provided by the USFS, it is believed that the PILT payment would be about 60% of the current tax revenues.

20. Spillover Benefits – Major

This acquisition provides major benefits to the natural resources of a large surrounding area that is not injured. Limited benefits to injured areas may occur in the long term as described under criterion #11. This acquisition significantly increases the amount of land near Anaconda that can be managed for benefits to natural resources. The acquisition would help preserve an expansive, continuous forested habitat between the Flint Creek and Pintlar ranges and forested areas to the south for movement of bighorn sheep, moose, wolverine, and lynx. Acquisition of the critical winter range associated with the Garrity Mountain parcel would benefit the extensive area where elk and deer spend the remainder of the year. The acquisition will benefit aquatic and terrestrial sensitive species as described under criterion #9.

21. Access to Public Land – Facilitates

With public ownership, this acquisition both creates new and enhances existing public access. It also would facilitate access to extensive amounts of USFS land adjoining the property on the west, south, and north portions of the property. Restrictions to public access on the Garrity parcels during timber harvest operations and uncertainties regarding the type and magnitude of public access to the Clear Creek parcels are further described below.

Upon acquiring nearly 5,790 acres of land in February 2001 as part of the Phase 1 state acquisition, the State entered into reciprocal access agreements with Y.T. Timber to provide reciprocal access across each other's land. The agreement requires MFWP, with input from Y.T. Timber, RMEF and the public, to develop a public access plan. MFWP solicited public input on a draft plan and then finalized it in June 2001. The plan is of interim nature and is focused on public access management during active timber harvest by Y.T. Timber on the lands already acquired and proposed for acquisition by the State. In general, public access will be allowed from June 1- Dec. 1, annually, for the Garrity Mountain lands and year-round for the Clear Creek lands. Vehicular use of the Garrity Mountain lands will be allowed on the main access road from 5PM Friday through 5PM Sunday only, for safety reasons, until the timber harvest is complete. After timber harvest is complete, which could be as soon as the end of 2002, the main access road will be open to public use seven days a week during the June 1 – Dec.1 time period. On the Garrity parcels, motorized vehicles are prohibited from going off established roads, on roads gated and locked, or on roads posted closed. The major access road to the Garrity parcels bisects two sections that are part of the Phase 2 state acquisition, making these important lands to acquire for public access. The current MFWP travel management plan for the Phase I Clear Creek parcels prohibits motorized vehicle use.

Uncertainties remain regarding the legal and vehicular access to the Clear Creek parcels. The Phase 1 acquisition of an undivided ½ interest in the 20-acre Tract 75A at the end of the Clear Creek Road assures the State has legal, administrative and vehicular access to this Tract via the Clear Creek Road; however, legal access to the

parcels that connect to this 20-acre Tract 75A via this road is uncertain. Non-vehicular access for the State and public to the Clear Creek lands is via the Anaconda Municipal Watershed Lands in Fifer and Ice House Gulches and also via Phase I Garrity lands. Any uses on the Anaconda Municipal Watershed Lands must be in compliance with the state "Class A-Closed" water classification and local regulations adopted to protect the municipal water supply. RMEF is also working with Anaconda Deer Lodge County on pursuing non-vehicular access from the Clear Creek Ridge, which can be accessed by Sheep Gulch Road, which is public. Thus, the State and public have non-vehicular access to the Clear Creek parcels via different routes but it is not clear that the State and public have verified legal and vehicular access to these parcels via the existing Clear Creek Road.

22. Price – Reasonable

A September 2000 appraisal commissioned by RMEF indicated a value of \$700/acre for the state acquisition lands. A USFS review appraiser found the appraisal met federal standards. RMEF and the NRDP negotiated a price per acre for the Phase 1 acquisition of \$650/acre. RMEF also agreed to sell the remaining 3,181 acres to the State at \$650/acre, provided funding is approved in 2001, and subject to review and final approval by the State's Trustee. Thus, the land is being acquired at \$50/acre below the appraised fair market value.

Monitoring and Research Criteria – Not Applicable

APPENDIX D

PROJECT BUDGET SUMMARIES AND IMPACT CHECKLIST

**For copies of the Project Budget Summaries
And Impact Checklists,
Please contact the
Natural Resource Damage Program
Department of Justice
P. O. Box 201425
Helena, MT 59601
(406) 444-0205**

APPENDIX E

**APPLICATION REVIEW
GUIDELINES**

UCFRB RESTORATION GRANTS

APPLICATION REVIEW GUIDELINES²³

Introduction

The February 2000 *UCFRB Restoration Plan Procedures and Criteria (RPPC)* provides the framework for expending Restoration funds and describes the criteria to be used to evaluate Restoration Grant Projects. To help in these evaluations, the NRDP developed the following Application Review Guidelines based on the *RPPC*. These Guidelines categorize the likely manner in which restoration projects meet or address a particular criterion. For example, for technical feasibility, projects are categorized as reasonably feasible, uncertain feasibility, or not feasible. These categories provide a framework to assist in evaluating and comparing projects consistently. Reviewers should note that it is the explanatory text for each criterion provided in the detailed Project Criteria Narratives, not the titles provided in this guidance to categorize projects, that forms the basis of judging how well a project addresses a particular criterion. The titles/headers should not be misconstrued to denote a certain level of ranking or adequacy in meeting the RPPC criteria.

STAGE 1 CRITERIA REQUIRED BY LEGAL CONSIDERATIONS

1. TECHNICAL FEASIBILITY

General Considerations: Reviewers should bear in mind that the ultimate question to be answered under this criterion is: To what degree is the project likely to achieve its objectives? As per the DOI regulations, “Are the technology and management skills necessary to implement the project well known and does each element of the plan have a reasonable chance of successful completion in an acceptable period of time?” To evaluate both the technology aspects and management aspects, the application asks for a scope of work as well as information regarding successful application of the selected technology to similar sites. We are not just evaluating whether a particular technology has been successfully applied in the past, but also whether it will work as applied to this particular project as planned by the applicant.

Reasonably Feasible: The following descriptions apply to a project that is “Reasonably Feasible.”

- The project employs well-known and accepted technology in design, engineering and implementation components of the project, and/or;
- The project applicant demonstrates that any innovative technologies proposed in the project are reasonably likely to achieve their stated objectives.

²³ These review guidelines are provided in Appendix E of the *Final Pilot Year 2000 UCFRB Restoration Work Plan*.

- Any uncertainties/issues requiring future resolution associated with the project are insignificant.
- There is a reasonable degree of confidence that the technologies proposed to be utilized in the project (whether well-known and accepted or experimental or innovative) can be applied to the project site to achieve their stated objectives.
- The project applicant demonstrates management skills necessary to implement the technologies at the project site in an acceptable period of time.

Based on these findings, the project is “Reasonably Feasible,” and is therefore reasonably likely to achieve its objectives.

Uncertain Feasibility: If any of the following descriptions apply to a project that otherwise satisfies the description of a “Reasonably Feasible” project, then the project is of “Uncertain Feasibility.”

- It is uncertain whether any innovative or experimental technologies proposed in the project are likely to achieve their stated objectives.
- There are many or significant uncertainties associated with the project that require future resolution.
- It is uncertain whether the technologies proposed to be utilized in the project (whether well-known and accepted or experimental or innovative) can be applied to the project site to achieve their stated objectives.
- It is uncertain whether the project applicant demonstrates management skills necessary to implement the technologies at the project site in an acceptable period of time.

Based on these findings, the project is of “Uncertain Feasibility,” and therefore the likelihood of the project achieving its objectives is uncertain.

Not Feasible: The conclusion that a project is “Not Feasible” may be based on one or more of several possible findings, including:

- Technologies (or a technology) proposed in the project are (is) not likely to achieve their (its) stated objectives.
- The project applicant does not demonstrate management skills necessary to implement the technologies (technology) at the project site in an acceptable period of time.

Based on these findings, the State concludes that the project is “Not Feasible,” and therefore not likely to achieve its objectives.

2. RELATIONSHIP OF EXPECTED COSTS TO EXPECTED BENEFITS

General Consideration: Pursuant to this criterion, reviewers should evaluate to what extent a project's costs are commensurate with the benefits it provides. All costs and benefits, both direct and indirect, should be considered in this evaluation. Costs include monetary and other costs associated with the project. Because some project benefits and costs may be hard to quantify, reviewers should not attempt to assign a monetary value to all costs and benefits.

Note: Because this criterion involves a weighting of all benefits expected to be derived from a project against all costs associated with the project, it is suggested that reviewers undertake this evaluation only after completing all other Stage 1 and Stage 2 criteria evaluations. If the project is part of a larger project, evaluate the costs/benefits from the perspective of the benefits the project achieves by itself and its costs, as well as the benefits of the larger project and its costs. This criterion will ultimately be used to relatively compare projects. At this stage, however, the evaluation is confined to assessing the degree to which the project's costs are commensurate with the project's benefits.

High Net Benefits: Project benefits significantly outweigh/exceed costs associated with the project.

Net Benefits: Project benefits outweigh/exceed costs associated with the project.

Commensurate Benefits and Costs: Project benefits are generally commensurate with, or proportionally equal to, costs associated with the project.

Net Costs: Project costs outweigh/exceed benefits to be gained from the project.

High Net Costs: Project costs significantly outweigh/exceed benefits to be gained from the project.

3. COST-EFFECTIVENESS

General Consideration: Does the project accomplish its goals in the least costly way possible when compared to alternative projects that may accomplish the same goals? For example, if the project replaces a service, is this the most cost-effective way to replace that service? In our application guidelines, we asked applicants to provide:

1. a description of alternatives to the proposed project that were considered, including the no-action alternative;
2. a comparison of the benefits and costs of each alternative (to the extent possible); and,
3. justification for the selection of the preferred alternative.

Note: Whereas the previous criterion compared all of the costs and benefits associated with the project as proposed by the applicant, this criterion requires reviewers to compare the project as proposed with alternative methods of accomplishing the same or substantially similar goals. Reviewers should not limit this evaluation to the alternatives discussed by applicants. If the applicant does not discuss an obvious alternative, reviewers should consider that alternative in reaching their conclusions on cost-effectiveness.

Cost Effective: The applicant provides a complete and thorough analysis and the selected alternative is most cost-effective.

Likely Cost Effective: Although the applicant only provided a limited alternatives analysis, the State concludes that the selected alternative is likely to be cost-effective.

Not Cost Effective: A suitable alternative exists that will produce the same or similar level of benefits, but at significantly lower costs.

Uncertain: Insufficient information is available to conclude that the selected alternative is likely to be cost-effective.

4. ENVIRONMENTAL IMPACTS

General Consideration: To what degree will the project adversely impact the environment? Reviewers will evaluate to what degree the applicant has properly identified and addressed any potential short-term or long-term adverse impacts that significantly affect the quality of the human environment. For Montana Environmental Policy Act (MEPA) compliance, we will need to assure that all adverse environmental impacts and reasonable alternatives have been adequately characterized and considered during decision-making. If this assurance is uncertain, we may conduct some further evaluation or seek supplemental information.

Note: In the application, we divided our information requests to applicants regarding the impacts to the human environment into “environmental impacts” and “human health and safety” components. In this section, reviewers should consider applicant responses in the “environmental impacts” section as set forth in the application. In the following section, reviewers should consider applicant responses in the “human health and safety” section as set forth in the application. For assistance with MEPA terminology, please refer to Attachment A.

No Adverse Impacts: Without mitigation, the project presents no potential adverse impacts, either significant or minor, to the environment.

No Significant Adverse Impacts: Without mitigation, the project presents no potential significant adverse impacts to the environment. The project involves the potential for some minor adverse environmental impacts that do not rise to the level of significance.

Short-Term Adverse Impacts with Mitigation: The project presents potential significant short-term adverse environmental impacts. Mitigation measures, however, are included in the

project that reduce otherwise significant adverse environmental impacts to below the level of significance. Mitigation that reduces significant adverse environmental impacts to below the level of significance results in a finding of no significant adverse impacts.

Long-Term Adverse Impacts with Mitigation: The project presents potential significant long-term adverse environmental impacts. Mitigation measures, however, are included in the project that reduce otherwise significant adverse environmental impacts to below the level of significance. Mitigation that reduces significant adverse environmental impacts to below the level of significance results in a finding of no significant adverse impacts.

Significant Adverse Impacts with Insufficient Mitigation: The project presents potential significant adverse environmental impacts, either short-term or long-term, and includes no (or insufficient) mitigation measures to reduce the otherwise significant impacts to below the level of significance.

5. HUMAN HEALTH AND SAFETY IMPACTS

General Consideration: To what has degree will the project have an adverse impact on human health and safety? If this is uncertain, further evaluation may be conducted or supplemental information may be gathered.

No Adverse Impacts: Without mitigation, the project presents no potential adverse impacts, either significant or minor, to human health and safety.

No Significant Adverse Impacts: Without mitigation, the project presents no potential significant adverse impacts to human health and safety. The project involves the potential for some minor adverse human health and safety impacts that do not rise to the level of significance.

Short-Term Adverse Impacts with Mitigation: The project presents potential significant short-term adverse human health and safety impacts. Mitigation measures, however, are included in the project that reduce otherwise significant adverse human health and safety impacts to below the level of significance. Mitigation that reduces significant adverse human health and safety impacts to below the level of significance results in a finding of no significant adverse impacts.

Long-Term Adverse Impacts with Mitigation: The project presents potential significant long-term adverse human health and safety impacts. Mitigation measures, however, are included in the project that reduce otherwise significant adverse human health and safety impacts to below the level of significance. Mitigation that reduces significant adverse human health and safety impacts to below the level of significance results in a finding of no significant adverse impacts.

Significant Adverse Impacts with Insufficient Mitigation: The project presents potential significant adverse human health and safety impacts, either short-term or long-term, and includes no (or insufficient) mitigation measures to reduce the otherwise significant impacts to below the level of significance.

6. RESULTS OF SUPERFUND RESPONSE ACTIONS

(Readily Available Information)

General Consideration: This criterion considers the results, either existing or anticipated, of completed, planned, or anticipated (if there is a reasonable measure of confidence in the anticipated action) UCFRB Superfund response actions. To what degree would the project be consistent with, augment or, alternately, interfere with or duplicate the results of such actions, including Superfund investigations and evaluations?

Note: A finding of inconsistency with response actions will *RPPC* usually, but not always, mean that the action is inappropriate or unjustifiable. As stated in the, the State will tend to favor projects that augment response actions rather than undo a response action. If, however, the State considers a response action to be ineffective and non-beneficial, then interference or inconsistency with the response action may positively improve restoration of natural resources to baseline. This should be assessed on a case-by-case basis. If necessary, reviewers should utilize the form attached as Attachment B to record any additional information pursuant to this criterion not included in the application and required for complete evaluation of the project.

Positive Coordination: The project coordinates with and augments the results of an effective Superfund action(s).

Consistent: The project may or may not augment the results of an effective Superfund response action(s), but it will not interfere with or duplicate the results of such an action(s).

Inconsistent but Potentially Beneficial: The project would interfere with or duplicate the results of an ineffective Superfund action(s).

Inconsistent: The project would interfere with or duplicate the results of an effective Superfund action(s).

7. RECOVERY PERIOD AND POTENTIAL FOR NATURAL RECOVERY

(Readily Available Information)

Note: If necessary, reviewers should utilize the form attached as Attachment B to record any additional information pursuant to this criterion not included in the application and required for complete evaluation of the project.

General Consideration: Will the proposed restoration project affect the time frame for recovery of the injured resource and if so, to what degree? In addition to information presented by the project applicant, reviewers should rely on the 1995 Restoration Determination Plan and backup injury assessment reports to estimate natural recovery potential for injured resources addressed

by the project. For projects that involve actual restoration of natural resources and, consequently, services, this criterion aims at determining just how well the project enhances the recovery period – does it significantly hasten that recovery? This criterion also evaluates the potential for natural recovery of an injured resource. If a resource is expected, on its own, to recover in a short period of time, a restoration action may not be justified.

Note: Given that the State recovered damages for past lost value of natural resources and services, it is not critical that all replacement projects consider the potential for recovery of the injured resource or services being replaced. This consideration may be relevant, however, when comparing replacement projects and relatively weighing the necessity of replacing one service or resource over another. For example, one project may replace services that will recover naturally in one year, while another project replaces services that will not recover naturally for 500 years. Depending on the service or natural resource replaced, the State may favor one of these projects over the other, based on the fact that the services or natural resources replaced will naturally recover in a short period of time for one project and not the other. For this reason, reviewers should consider recovery potential in the context of replacement projects.

Reduces the Recovery Period: The project enhances recovery potential of the injured resource and/or services provided thereby by reducing the time in which they will recover to baseline.

Note: This is a qualitative evaluation that should be assessed on a scale ranging from slight enhancement to complete restoration/replacement to baseline.

May Reduce the Recovery Period: It is possible but not certain that the project may reduce the time in which the injured resources and/or services provided thereby will recover to baseline.

No Effect on Recovery Period: The project most likely will not change the time frame for recovery.

Increases Recovery Period: The project diminishes recovery potential of the injured resource and/or services provided thereby by lengthening the time in which they will recover to baseline.

8. APPLICABLE POLICIES, RULES AND LAWS

(Readily Available)

General Consideration: To what degree is the project consistent with all applicable policies of state, federal, local and tribal government, including the *RPPC*, and in compliance with applicable laws and rules, including the consent decree?

The application requested information from applicants regarding four sub-issues: (1) permits obtained and any other permits required to complete the project, including pertinent dates; (2) deeds, easements or right-of-way agreements required to complete the project; (3) communication and coordination with local entities; and, (4) the effect, and consistency/inconsistency with other laws, rules, policies, or consent decree requirements. The State may

supplement applicant's information to the extent necessary to assess consistency with applicable policies and compliance with applicable laws and rules.

Note: For this criterion, applicants for projects over \$10,000 were only required to submit readily available information. Applicants for projects of \$10,000 or under were not required to address this criterion. Thus, the State may need to supplement information to evaluate this criterion. If necessary, reviewers should utilize the form attached as Attachment B to record any additional information pursuant to this criterion not included in the application and required for complete evaluation of the project.

Consistent/Sufficient Information Provided: The applicant has provided sufficient information to make the following determinations:

- All permits necessary to complete the project on schedule are identified and obtained, or reasonable assurance is provided that they will be obtained.
- All deeds and easements or rights-of-way necessary to complete the project on schedule are identified and obtained, or reasonable assurance is provided that they will be obtained.
- As necessary, the applicant has demonstrated that communication and coordination with local entities has occurred, or reasonable assurance is provided that such communication and coordination will occur.
- The applicant has demonstrated measures taken to comply with, and that the project is otherwise consistent with, other laws, rules, policies, or consent decree requirements.

Consistent/Insufficient Information Provided: Based on information provided by applicant and supplemented by State through the Attachment B form, it has been demonstrated that the project is Consistent as described above.

Inconsistent: After supplemental information has been obtained by the State (if necessary), the State concludes that the project may not be implemented consistent with policies of state, federal, local and tribal government, including the *RPPC*, or in compliance with applicable laws and rules, including the consent decree.

9. RESOURCES OF SPECIAL INTEREST TO THE TRIBES AND DOI

(Readily Available)

General Consideration: Are any of the following located in the vicinity of the proposal? This criterion will require NRDP consultation with Tribes and DOI. For affirmative response, indicate whether the project may have a positive or negative impact on Tribal cultural resources or Tribal religious sites (as defined in MOA) and/or natural resources of special environmental, recreational, commercial, cultural, historical, or religious significance to Tribes or DOI. Projects of potential negative impact require special consideration according to the provisions of

the MOA. If necessary, reviewers should utilize the form attached as Attachment B to record any additional information pursuant to this criterion not included in the application and required for complete evaluation of the project.

Beneficial Impact: Project will have or may have beneficial impacts on these special sites/resources.

No Impact: Project has no adverse impacts on these special sites/resources.

Minor Adverse Impact: Project has potential minor adverse impacts on these special sites/resources but protective measures have been integrated or can be easily integrated without significant project changes.

Major Adverse Impact: The project has potential major adverse impacts on these special sites/resources that will require further consideration under terms of the MOA.

STAGE 2 CRITERIA REFLECTING MONTANA POLICIES

10. PROJECT LOCATION

General Consideration: This criterion requires evaluation of the geographic proximity of the project to the injured resources it proposes to restore or replace. The *RPPC* and application instructions express a preference for restoration (or replacement) projects that occur at or near the site of injury, with the exception of Big Blackfoot River native trout restoration or replacement activities (see specific instructions below). There is no absolute scale of distance to determine proximity. Rather, proximity may be judged independently for each project, depending on a number of factors including the natural resource injury addressed and the geographic extent of benefits that may accrue from the project.

Specific instructions regarding Big Blackfoot River native trout restoration or replacement activities: The *RPPC* requires projects to be in the UCFRB. For projects on the Big Blackfoot River watershed that an applicant states are intended to restore native trout that cannot, from an economic or practical standpoint, be restored in the UCFRB, categorize the project into the “Big Blackfoot Exception” below. Analyses conducted pursuant to other criteria will determine whether the project will actually accomplish what it says it will. So for the purposes of the “Big Blackfoot Exception” only, rely on applicant’s statement for this criterion.

Within Basin and Proximate: All or most of the restoration or replacement activities associated with this project will be conducted at or reasonably near the site of natural resource injury to be addressed through the project.

Within Basin and Proximate/Other: Some of the restoration or replacement activities associated with this project will be conducted at, or reasonably near, the site of natural resource injury to be addressed through the project. Some of the restoration or replacement activities

associated with this project will be conducted at other locations away from the site of natural resource injury to be addressed through the project.

Within Basin: All or most of the restoration or replacement activities associated with this project will be conducted at a location that is within the UCFRB but away from the site of natural resource injury to be addressed through the project.

Big Blackfoot Exception: Applicant states that this project proposes native trout restoration or replacement activities located in the Big Blackfoot River watershed which cannot, due to practical or economic considerations, be conducted within other areas of the UCFRB.

Not Applicable: The project is a research or monitoring project.

11. ACTUAL RESTORATION OF INJURED RESOURCES

General Consideration: The *RPPC* states that actual restoration of the resources that are injured should be given priority. This criterion requires evaluation of whether, and to what extent, the project will restore injured natural resources that were the subject of the Montana v. ARCO lawsuit.

Note: The term “restore” under this criterion is used in its specific meaning, i.e., actions are designed to return injured resources and services provided thereby to baseline conditions or accelerate the natural recovery process.

Restoration: All aspects of the project are intended to accomplish restoration of an injured natural resource.

Restoration/Other: Some aspects of the project are intended to accomplish restoration of an injured natural resource.

Contributes to Restoration: Although the project is not intended to directly accomplish restoration of an injured natural resource, some aspects of the project contribute to the restoration of an injured natural resource.

May Contribute to Restoration: Although the project is not intended to directly accomplish restoration of an injured natural resource, some aspects of the project may contribute to the restoration of an injured natural resource.

No Restoration: The project is not intended to accomplish restoration of an injured natural resource, nor is it likely to contribute to restoration of an injured natural resource.

12. RELATIONSHIP BETWEEN SERVICE LOSS AND SERVICE RESTORATION

General Consideration: The *RPPC* states that proposed restoration projects (general sense) that closely link the services that are the project's focus with the service flows that have been impaired, will be favored over projects that do not. To address this criterion, reviewers should examine the connection between the services that a project seeks to provide or augment and the services lost or impaired as a result of natural resource injuries.

Note: Complex projects may involve a combination of the following categories. Reviewers should note which aspects of each project falls into each of the categories.

Same: The services restored or augmented by the project are the same or substantially equivalent to services lost or impaired due to natural resource injury.

Similar: The services restored, augmented, or replaced by the project are not the same or equivalent to, but are similar to those lost or impaired due to natural resource injury.

Dissimilar: There is no connection between the services lost or impaired and the services provided or augmented by the project.

13. PROJECT BENEFICIARIES AND COLLATERAL BENEFITS

General Consideration: The *RPPC* states that projects that benefit the user group originally harmed by injury to natural resources will be favored, and that the State will also examine to what extent and degree a project will produce benefits to more than one resource and/or service. To address this criterion, reviewers should determine whether, and to what degree, the project benefits the user group (persons and/or natural resources) originally harmed and whether the project will produce benefits to other resources and/or services (collateral benefits).

Original and Collateral: The project significantly benefits the persons and/or natural resources originally harmed by the loss of services and other resources and/or services.

Original: The project significantly benefits the persons and/or natural resources originally harmed by the loss of services.

Collateral: The project does not benefit the persons and/or natural resources originally harmed, but does benefit other resources and/or services.

No Benefits to Original or Collateral: The project benefits neither the original user group nor provides collateral benefits.

14. PUBLIC SUPPORT

General Consideration: What is the extent of public support for the project demonstrated in the application?

Note: The evaluation conducted pursuant to these instructions is based exclusively on information available at the time of the evaluation, which is primarily the letters of support provided in an application. Subsequently, public support may be demonstrated throughout the funding selection process (e.g. at the pre-draft and draft review stages). Therefore, the evaluation presently undertaken will need to be updated after the public comment period on the draft Restoration Work Plan is completed. Public comment may demonstrate further support, opposition, or a mixture of support and opposition.

Broad: Documentation indicates strong and broad public support from numerous and varied persons and entities.

Moderate: Documentation indicates support from more than a few but not numerous persons and entities.

Limited: Documentation indicates public support from a few persons and entities.

None: No public support is documented.

15. MATCHING FUNDS

General Consideration: To what extent does the project entail cost sharing? The State will calculate matching funds by determining the percentage of the total project costs for activities under the project's scope of work to be funded by other sources besides Restoration Funds. For projects that are part of a larger project for which future funding will be sought, the State will only consider the matching funds dedicated to the phase of the project that is to be funded by Restoration funds. For land acquisition projects, the State will accept as matching funds payments or donations that make up the difference between the funding request and the appraised value.

Note: If necessary, reviewers will need to consult matching fund entities to determine the likelihood of matching funds. The State's determination of matching funds will not always match the applicant's determination.

High: Confirmed or likely cost share of 50% or greater.

Reasonable: Confirmed or likely cost share of between 25% and 50%.

Limited: Confirmed or likely cost share of between 10% and 25%.

Minimal/None: Cost share < 10%.

16. ECOSYSTEM CONSIDERATION, COORDINATION, AND INTEGRATION

(Readily Available Information)

General Consideration: How well is the project planned to integrate with other ongoing or planned restoration, remediation or other actions, considering the complex arrangement of interdependent ecological components of the UCFRB? Planned restoration actions include, but are not limited to, the State's Restoration Determination Plan for Step 2 sites that are still undergoing litigation. In addition to evaluating how projects coordinate with other actions, the criteria examine the relationship between a particular project and overall resource conditions of the UCFRB, attempting to understand the impact of a project on the ecosystem as a whole.

Note: If necessary, reviewers should utilize the form attached as Attachment B to record any additional information pursuant to this criterion not included in the application and required for complete evaluation of the project. Additionally, this evaluation requires a determination of whether implementation of the project will conflict with ongoing litigation. To make this determination, reviewers should consult with NRDP legal staff.

Coordinates/Integrates: Project coordinates and achieves efficiencies not otherwise possible through coordination with other restoration/remediation activities. The project fits within a broad ecosystem concept in that it improves a resource problem when viewed on a large scale, is sequenced properly from a watershed management approach, and will not interfere with other efforts. The project does not interfere with the State's Restoration Determination Plan or ongoing litigation on Step 2 sites.

Integrates: Although the project does not directly coordinate with other actions, it fits within broad ecosystem concept as described above. The project does not interfere with the State's Restoration Determination Plan or on-going litigation on Step 2 sites.

Conflicts: Project may interfere with significant, beneficial on-going or planned actions or is one that should wait from an ecosystem standpoint or a litigation standpoint (Step 2 sites) until other actions occur or certain environmental conditions occur.

17. NORMAL GOVERNMENT FUNCTIONS

(Readily Available Information)

General Consideration: The *RPPC* states those activities, for which a governmental agency would normally be responsible or that would receive funding in the normal course of events, (absent the UCFRB Restoration Fund) will not be funded. The Restoration Fund may be used, however, to augment funds normally available to government agencies to perform a particular project if such cost sharing would result in implementation of a restoration project that would not

otherwise occur through normal agency function. For this criterion, reviewers should determine whether the project is intended to accomplish activities that would otherwise not occur through normal agency function.

Note: If necessary, reviewers should utilize the form attached as Attachment B to record any additional information pursuant to this criterion not included in the application and required for complete evaluation of the project.

Outside Normal Agency Function: The project does not involve activities normally conducted by government agencies or obligations of governmental entities under law for which they receive funding or for which they are responsible for securing funding.

Augments Normal Agency Function: The project involves activities that may normally be conducted by governmental agencies, except that the project augments such activities beyond a level required by law and for which funding is presently insufficient to implement the project.

Within Normal Agency Function: The project involves activities normally conducted by government agencies or obligations of governmental entities under law for which they receive funding or for which they are responsible for securing funding.

STAGE 2 CRITERIA – LAND ACQUISITION PROPOSALS ONLY

18. DESIRABILITY OF PUBLIC OWNERSHIP

General Consideration: To what extent does the public ownership of land or interests in land (e.g. water rights, conservation easements) involved in this proposal benefit injured natural resources or provide services that have been lost or impaired?

Major Benefits: The project provides major benefits to injured natural resources and/or provides lost services of major magnitude/scale in terms of the quality of services provided and the user groups likely to benefit from those services.

Moderate Benefits: The project provides moderate benefits to injured natural resources and/or provides lost services of moderate magnitude/scale in terms of the quality of services provided and the user groups likely to benefit from those services.

Minor Benefits: The project provides minor benefits to injured natural resources and/or provides lost services of limited magnitude/scale in terms of the quality of services provided and the user groups likely to benefit from those services.

19. HABITAT PROTECTION

General Consideration: What is the value, as habitat for fish and wildlife, of the property proposed for acquisition? Among other factors, consider the benefits to multiple species, the quality of the habitat, and the relative habitat availability.

Exceptional: The property provides, or will provide, exceptional habitat for fish and wildlife.

Good: The property provides, or will provide, good habitat for fish and wildlife.

Marginal: The property provides, or will provide, marginal habitat for fish and wildlife.

20. SPILLOVER BENEFITS

General Consideration: To what extent does the acquisition benefit either an injured area or, more generally, a large surrounding area that is not injured?

Major: Acquisition provides major benefits to an injured area and/or a large surrounding area that is not injured.

Moderate: Acquisition provides moderate benefits to an injured area and/or a large surrounding area that is not injured.

Minor: Acquisition provides minor benefits to an injured area and/or a large surrounding area that is not injured.

None: Acquisition does not provide any spillover benefits.

21. PUBLIC ACCESS

General Consideration: Will access to public land be facilitated by acquisition?

Facilitates: The acquisition creates new or enhances existing access to public land.

Does not Facilitate: The acquisition does not create any new or enhance any existing access to public land.

22. PRICE

General Consideration: To what extent is the land/interest being offered for sale at fair market value?

Reasonable: Documentation indicates property is being acquired at or below fair market value.

High: Documentation indicates property is being acquired above market value.

Uncertain: Insufficient information is available at this time for comparison to fair market value.

STAGE 2 RESEARCH AND MONITORING CRITERIA

These criteria are applicable only to research and monitoring projects. Through minimum qualification determinations, we have already established that the proposed research or monitoring project pertains to restoration of injured natural resources in the UCFRB. These two criteria are designed to distinguish the level of benefits these projects will have on restoration of injured natural resources.

23. OVERALL SCIENTIFIC PROGRAM

General Consideration: To what extent is the monitoring or research project coordinated or integrated with other scientific work in the UCFRB?

Coordinates: The project will augment and not duplicate past and on-going scientific work, focussing on existing data gaps. The applicant has also demonstrated thorough knowledge of and coordination with other scientific work in the Basin.

Does not Coordinate: The project does not involve any coordination or integration with other scientific work in the Basin or may be duplicative.

Uncertain: Insufficient information has been provided to determine the level of coordination/integration with other scientific work in the UCFRB.

24. ASSISTANCE WITH RESTORATION PLANNING

General Consideration: To what extent will this project assist with future restoration efforts?

Major Benefits: The project will be of major benefit to future restoration efforts in terms of needed information on the status and condition of natural resources and recovery potential/constraints or assistance with restoration project planning, selection, implementation, and monitoring.

Moderate Benefits: The project will be of moderate benefit to future restoration efforts in terms of needed information on the status and condition of natural resources and recovery potential/constraints or assistance with restoration project planning, selection, implementation, and monitoring.

Minor Benefits: The project will be of minor benefit to future restoration efforts in terms of needed information on the status and condition of natural resources and recovery potential/ constraints or assistance with restoration project planning, selection, implementation, and monitoring.

ATTACHMENT A

MEPA Terminology

The Montana Environmental Policy Act (“MEPA”), Mont. Code Ann. § 75-1-101 through § 75-1-324, requires state agencies to carry out the policies in part 1 of MEPA through the use of a systematic, interdisciplinary analysis of state actions that have an impact on the human environment. To this end, MEPA has two central requirements: agencies must consider the effects of pending decisions on the environment and on people prior to making each decision; and, agencies must ensure that the public is informed of and participates in the decision-making process. Through the “Environmental Impacts” and “Human Health and Safety” analyses, reviewers accomplish this first important requirement of MEPA. This appendix provides basic information regarding MEPA with which reviewers should be familiar before undertaking their analyses of “Environmental Impacts” and “Human Health and Safety” criteria statements.

1. Terminology used in the *RPPC*: short-term, long-term, direct and indirect adverse impacts.

The *RPPC* states that **short-term, long-term, direct** and **indirect** adverse impacts will be evaluated. “Short-term” and “long-term” adverse impacts are not specifically discussed in MEPA. These terms, however, should be used by reviewers to subjectively categorize the duration of adverse impacts potentially presented by a project.

The Montana EQC guide to MEPA provides the following definitions of “direct” and “secondary” (rather than indirect) impacts.

- **Direct impacts** are those that occur at the same time and place as the action that triggers the event.
- **Secondary impacts** are those that occur at a different location and/or later time than the action that triggers the effect.

2. MEPA evaluations apply to the “human environment.”

Reviewers should be aware that the MEPA analysis of adverse impacts applies to the “**human environment**.” The MEPA definition of the term “human environment” includes, but is not limited to “biological, physical, social, economic, cultural, and aesthetic factors that interrelate to form the environment. . . . [E]conomic and social impacts do not by themselves require an EIS . . .” but when an EIS is prepared, “economic and social impacts and their relationship to biological, physical, cultural and aesthetic impacts must be discussed.” MEPA Model Rule II (12).

3. What is a “significant” adverse impact, and what is a “minor” adverse impact?

The determination of the “**significance**” of an adverse impact on the human environment involves the consideration of several factors, as set forth in MEPA Model Rule IV. The standard set forth in this rule is somewhat subjective, and reviewers should be familiar with the rule to make a determination of the significance of adverse environmental impacts. Additionally, there

is a library-full of caselaw (speaking metaphorically) on what constitutes a “significant adverse environmental impact.” Questionable or borderline determinations should be referred for a legal opinion.

MEPA Model Rule IV sets forth the following criteria for determining the significance of an impact on the quality of the human environment:

- (a) the severity, duration, geographic extent, and frequency of occurrence of the impact;
- (b) the probability that the impact will occur if the proposed action occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact will not occur;
- (c) growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts;
- (d) the quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources or values;
- (e) the importance to the state and to society of each environmental resource or value that would be affected;
- (f) any precedent that would be set as a result of an impact of the proposed action that would commit the department to future actions with significant impacts or a decision in principle about such future actions; and
- (g) potential conflict with local, state or federal laws, requirements or formal plans.

“**Minor**” adverse environmental impacts are adverse environmental impacts that do not rise to the level of significance.

4. “Mitigation” under MEPA.

Mitigation reduces or prevents the undesirable impacts of an action. Mitigation measures must be enforceable. MEPA Model Rules II(14) and V(2)(h) define mitigation as: avoiding an impact by not taking certain action or parts of an action; minimizing impacts by limiting the degree or magnitude of an action and its implementation; rectifying an impact by repairing, rehabilitating, or restoring the affected environment; or, reducing or eliminating an impact over time by preservation and maintenance operations during the life of an action or the time period thereafter that an impact continues. Examples of mitigation include designs, enforceable controls, or stipulations to reduce the otherwise significant impacts to below the level of significance.

ATTACHMENT B

Supplemental Information Form (to be utilized by reviewers)

Results of Superfund Response Actions – Supplemental Information

Recovery Period and Potential for Natural Recovery – Supplemental Information

Applicable Policies, Rules and Laws – Supplemental Information

- Additional permits necessary to complete the project on schedule.
- Additional deeds, easements or rights-of-way necessary to complete the project on schedule.
- Additional communication and coordination with local entities necessary to complete the project on schedule.
- Additional measures necessary for compliance and consistency with other laws, rules, policies, or consent decree requirements.

Resources of Special Interest to the Tribes and DOI – Supplemental Information

APPENDIX F

ADVISORY COUNCIL INPUT

UPPER CLARK FORK RIVER BASIN REMEDICATION AND RESTORATION EDUCATION ADVISORY COUNCIL

Jim Flynn, Chair
Anaconda

TO: Trustee Restoration Council Members

Sally Johnson
Vice chair
Missoula

FROM: Jim Flynn, Advisory Council Chairman

Chris Marchion
Anaconda

DATE: August 16, 2001

Kathleen Hadley
Deer Lodge

RE: Advisory Council Recommendations

Bruce Hall
Milltown

The UCFRB Remediation and Restoration Education Advisory Council met on August 8, 2001 to review the application for expenditure of Natural Resource Damage fund for the year 2001. The Council recommended the following projects for full funding except where noted:

Gail Jones
Deer Lodge

Judy Jacobson
Butte

1. RMEF Watershed Land Acquisition
2. Greenway Project (\$1.2 million of the \$1.42 million)
3. Antelope and Wood Creek Project
4. Rocker Project
5. Butte Drinking Water Project

Pat Munday
Walkerville

Mary Seccombe
Butte

Matt Clifford
Missoula

Jan Sensibaugh, Director
MT Dept. of Environmental
Quality

Jeff Hagener, Director
MT Dept. of Fish, Wildlife and
Parks

The Council voted not to fund the East Deer Lodge Valley Project. I am attaching a summary of the action taken by on the Council on each project. I look forward to the discussion at the meeting on August 30th.

Carol Fox
Restoration Program Chief
NRDP/ MT Dept. of Justice

Carole Lankford
Confederated Salish &
Kootenai Tribes

Darlene Koontz
U.S. Dept of Interior

ADVISORY COUNCIL ACTION FROM AUGUST 8, 2001

1. RMEF Watershed Land Acquisition – Motion to approve staff’s recommendation of full funding for \$2,065,700 passed 10-0. No discussion
2. Greenway Project – Motion to approve the staff’s recommendation was amended to utilize crushed stone for the trail surface instead of pavement. The amendment motion failed 6-5. The discussion centered on the benefits of pavement versus crushed stone and the use of the trail as a multi-use path. The motion to approve the staff’s recommendation of partial funding at \$1,206,755 passed 11-0.
3. Antelope and Wood Creek Project – Motion to approve staff’s recommendation to fund the project for \$10,000 passed 10-1. No discussion.
4. Rocker Project – Motion to reject the staff’s recommendation and approve the project for funding at \$719,566 passed 8-3. The discussion centered around the creativeness of this project; the value of nutrient reduction and wetland creation; the potential need and options for water rights for the lower wetlands; and the high cost per acre of the wetlands as well as the nutrient reduction.
5. Butte Drinking Water Project – Motion to approve the staff’s recommendation to fund the project for \$1,165,795 passed 11-0. The discussion was that this project appears to be a long term one and that it may be a lower priority in later years in relation to other projects proposed.
6. East Deer Lodge Valley Project – A motion to fund the entire project for \$627,344 failed 6-4. A second motion to accept the staff’s recommendation and not to fund the project passed 7-3 with one member abstaining. The discussion centered around the potential for this project to be a good one; however, with the data gaps and resulting uncertainty that existed, it was difficult to assess the benefits to the resources and public. Some felt that it was a good attempt to work with private landowners, while others felt that work should not be done on private lands at this time. Options for partial funding were also discussed, which several members supported; however, the applicant rejected any alternatives and requested a yes or no vote on the application as submitted.

UPPER CLARK FORK RIVER BASIN REMEDICATION AND RESTORATION EDUCATION ADVISORY COUNCIL

Jim Flynn, Chair
Anaconda

Sally Johnson
Vice chair
Missoula

Chris Marchion
Anaconda

Kathleen Hadley
Deer Lodge

Bruce Hall
Milltown

Gail Jones
Deer Lodge

Judy Jacobson
Butte

Pat Munday
Walkerville

Mary Seccombe
Butte

Matt Clifford
Missoula

Jan Sensibaugh, Director
MT Dept. of Environmental
Quality

Jeff Hagener, Director
MT Dept. of Fish, Wildlife and
Parks

Carol Fox
Restoration Program Chief
NRDP/ MT Dept. of Justice

Carole Lankford
Confederated Salish & Kootenai
Tribes

Darlene Koontz
U.S. Dept of Interior

TO: Governor Martz
FROM: Jim Flynn, Advisory Council Chairman
DATE: December 6, 2001
RE: Advisory Council Recommendations

The UCFRB Remediation and Restoration Education Advisory Council met on November 14, 2001 to review public comment and make final recommendations on the 2001 grant applications. The Council voted to reaffirm their support for the following five projects at the indicated funding levels.

1. RMEF Watershed Land Acquisition - \$2,065,700
2. Greenway Project - \$1,206,700
3. Antelope and Wood Creek Project – \$10,000
4. Rocker Project - \$719,566
5. Butte Drinking Water Project - \$1,165,795

Since the amount and the details of East Deer Lodge Valley Project had changed due to the comprise funding plan agreed to by the applicant and the NRDP, the Council voted on this project separately and ultimately recommended this project for funding for \$135,941.