



MEMORANDUM

TO: Members of the Butte Natural Resource Damage Restoration Council (BNRC)

FROM: Pat Cunneen, NRDP

DATE: April 18, 2014

SUBJECT: Materials for April 24, 2014 BNRC Meeting

The Butte Natural Resource Damage Restoration Council (BNRC) will meet Thursday, April 24, 2014, starting at 6:00 p.m. at the Butte-Silver Bow Public Archives at 17 West Quartz Street. Enclosed are the agenda, the draft 3/27/14 meeting summary, and other back-up materials for this meeting. Following is a summary of the 4/24/14 agenda topics:

Agenda Item #1: Introductions and Administrative Items — Action Item

BNRC Chair Elizabeth Erickson will provide an overview of the meeting agenda. BNRC members will then consider and take action on the 3/27/14 meeting summary.

Agenda Item #2: Butte-Silver Bow Tree Planting Project Update

Butte-Silver Bow Reclamation Manager Tom Malloy will give a presentation on the 2013 Butte-Silver Bow Tree Planting Progress Report, providing an update on what was accomplished last season. Attached is the scope of work and budget for past work in 2013 and on-going work in 2014. Then Mr. Malloy will present the proposed 2014 Butte-Silver Bow Tree Planting Work Plan and budget detailing the work that Butte-Silver Bow hopes to implement this planting season. Mr. Malloy will then field questions from the Council and then the floor will be opened for questions from the audience. We have yet to receive the proposed 2014 Work Plan and budget from Butte-Silver Bow.

Agenda Item #3: Montana Tech Native Plant Diversity Project Update

Beverly Hartline, Vice Chancellor for Research and Dean of Graduate Studies, and Kriss Douglass, Co-Project Investigator from Montana Tech will give a presentation on the 2013 Montana Tech Native Plant Diversity Progress Report, providing an update on what was accomplished last season. Attached is a copy of the scope of work and budget for past work in 2013 and on-going work in 2013. They will also present the proposed 2014 Montana Tech Native Plant Diversity Work Plan detailing the work that Tech hopes to accomplish this planting season, along with their proposed budget (see attached 2014 work plan and budget). Dr. Hartline and Mrs. Douglass will then field questions from the Council and then the audience.

Agenda Item #4: Small Projects Funding Process — Action Item

At the March 27, 2014 meeting, the BNRC members discussed the small project (\$100,000 or less) solicitation process set forth in the 2012 *Final Butte Area One Restoration Plan*. Issues covered included: considering proposals for any restoration category; operating the program on an annual cycle or open cycle; conducting an outreach workshop and requiring proposals to be turned in 30 or 60 days later; the evaluation of projects by BNRC members and NRDP staff; encouragement of matching funds; and the elements of a “small project submittal/instruction form.”

At the April 24, 2014 meeting, the Council will review proposed language for a new Section 3.2.7 that will replace the existing section. This replacement language was drafted by NRDP staff based on the BNRC’s input at your 3/27/14 meeting. After discussion and consideration of any input offered from the public, the Council will take action on the amendment language that will subsequently be the subject of a 30-day public comment period. After consideration of public comment, the BNRC will decide on amendment language to recommend for consideration by the Trustee Restoration Council and final approval by the Governor.

Next on the agenda, BNRC members will review the draft small project submittal/instruction form prepared by NRDP. The council is not required to take action on this document; rather it is offered for consideration now and will be finalized prior to starting the first small project cycle.

BUTTE NATURAL RESOURCE DAMAGE RESTORATION COUNCIL (BNRC)

BNRC Members:

**Elizabeth Erickson,
Chair**

Bill Callaghan

Mark Gollinger

Helen Joyce

John McKee

Edie McClafferty

Chad Okrusch

Emmett Riordan

Dave Williams

Thursday April 24, 2014

6:00 to 8:30 pm

**Butte-Silver Bow Public Archives
17 West Quartz Street
Butte, Montana**

AGENDA

Introduction and Administrative Items

- Meeting overview – Elizabeth Erickson, BNRC Chair
- 3-27-14 Meeting Summary – Action Item

Butte Area One/Butte Hill Revegetation Projects Updates

Butte-Silver Bow Tree Planting Project:

- Tom Malloy, BSB Reclamation Manager
 - 2013 Annual Progress Report
 - 2014 Proposed Annual Work Plan
 - Questions/Comments from the Council
 - Questions/Comments from the Public

Montana Tech Restoring Native Plant Diversity Project:

- Beverly Hartline and Kriss Douglass, Montana Tech
 - 2013 Annual Progress Report
 - 2014 Proposed Annual Work Plan
 - Questions/Comments from the Council
 - Questions/Comments from the Public

Small Projects – Amendment of BAO Restoration Plan

– BNRC Discussion - Action Item

- Review proposed amendment language
- Review draft project submittal form
- Opportunity for public input

Program Updates

- Pat Cunneen, NRDP
 - New Task Orders

Open Floor for Public Comment on Relevant Subjects

Draft March 27, 2014 Meeting Summary Butte Natural Resource Damage Council (BNRC)

Note: This is a condensed meeting summary.

Location/Time: Second Floor Conference Room of the Thornton Building, 65 East Broadway, Butte; 6:00-8:30 p.m.

Council members present: Helen Joyce, Emmett Riordan, Bill Callahan, Elizabeth Erickson, David Williams, Mark Gollinger

Council members absent: John McKee, Chad Okrusch, Edie McClafferty

NRDP staff present: Pat Cunneen, Carol Fox

Elizabeth Erickson welcomed Council members and members of the public, and reviewed the planned agenda.

Presentation of Science Fair Project

Elizabeth Erickson introduced Trinity Berry and reviewed the numerous awards Trinity received for her science fair project entitled “Making Copper Precipitate Replace Iron on Metal Washers.” Trinity then presented her project and answered questions about it. Questions were asked about the timeframe for the leaching process (response: 88 hours) and what would you do different in the future (response: perform the study on a larger scale).

Presentation on Diggings East Study

Nick Tucci of the Montana Bureau of Mines and Geology presented and answered questions about the *February 2012 Final Draft Version Tailings/Impacted Sediment Delineation of the Diggings East, Blacktail Creek Berm, and Northside Tailings Area*. A copy of Nick’s presentation is available upon request to Pat Cunneen of the NDRP. Nick noted that a new LIDAR survey for Butte Area One/Blacktail Creek was conducted in conjunction with this investigation and that the data is available upon request to Nick. Nick concluded that, without removal of the wastes left in place, groundwater will need to be treated from anywhere between 1,000 to 10,000 years.

Elizabeth next opened the floor to questions from the Council and then the audience. Following is a summary of the questions asked, with responses from Nick or Pat identified by an “R.”

- Is the boundary based on tailings vs. subsurface? R: The proposed excavation boundaries are based on the impacted sediment criteria. If three of the six contaminants of concern exceeded the action level, then the area was marked as impacted and targeted for removal.
- How much of Diggings East is covered with construction debris? R: Nick indicated two areas on one of his presentation slides.

- Who owns the Diggings East land? R: There are four primary owners – Arco, Butte-Silver Bow, Baker, and Kenneally.
- Who owns the Northside Tailings land? R: Mostly Butte-Silver Bow.
- Does the impacted area stop at the water table? R: I did not go below the water table.
- How were the action levels for Streamside Tailings Operable Unit developed? R: Nick did not know, but Brad Archibald of Pioneer Engineering indicated that the levels are leachate based. At SSTOU (a.k.a. Silver Bow Creek), DEQ cleans an area until four of the six contaminants of concern drop by an order of magnitude.
- When can we start digging? R: That’s not something I can predict.
- What other areas outside the boundaries of this investigation might be contaminated? R: I’m comfortable with the southern boundary of Diggings East. I have assumed contamination exists above (north of) George Street, and possibly in the vacant areas west of Columbus Plaza. I’m interested in the stream sediment in Blacktail Creek between Grove Gulch and George Street. Elevated levels in the sediments were indicated in some previous studies. Old reports by Hydrometrics show loading in this area. We could not get our rig across the ditch (that drains the wetlands south of the Interstate) that cuts the Blacktail Creek Berm. The old aerial photos indicate that there was a road over Blacktail Creek to the wetland area—that road/berm may be a concern.
- What prompted the concern for petroleum hydrocarbon? R: Pat indicated that it was theorized that a past underground storage tank leak at the Community Gas site might have caused contamination. Nick indicated this data was important to know for purposes of determining an appropriate repository site.
- What about the other area to the north of the MSD and west of Kaw Avenue? R: That is the “Experimental Wetland Area” owned by ARCO, and they are responsible for the remediation of that area.
- What about the boundary on the north side to the east near Albertsons? R: I don’t believe this is a contaminated area and have not seen any data that shows there were tailings under Albertsons. Pat added that there was a very thin layer of tailings in two boreholes drilled in the north parking lot of the Civic Center during the Parrot Tailings Investigation.
- What about the area in the Northside Tailings (just east of Kaw Avenue) that was not sampled? R: The vegetation in this area is lush with lots of grasses and rushes and we did not want to disturb the vegetation. Lush vegetation would seem to indicate that the soils are not contaminated.
- How much value is there in the copper? R: Assuming the price of copper to be \$3/lb and the three million pound estimate for Diggings East, the estimated value would be \$9

million; with the 15 million pound estimate for Diggings East, Northside Tailings, and Parrot combined, the estimate would be \$45 million.

- Couldn't the copper value go towards the removal? R: I can't answer that. It's something the responsible parties and state, federal, and local government have to address.
- Why did you not sample the old road area over Blacktail Creek and are there plans to do any testing in that area? R: We could not physically get across the channel with our equipment to sample that area, which extends into the buffalo wetland. There are no plans to sample it at this time; it's a data gap.
- What is the timeframe for removal? R: Pat said the State is advocating removal and the Butte Area One restoration plan allocates \$10 million towards removal. The State hopes to get an additional \$10 million from the Silver Bow Creek remediation remainder and have ARCO contribute the rest of the needed funding because removal will save ARCO treatment costs. Whether removal will occur and when is the subject of negotiations and remains to be determined.
- Will the waste be mined? R: Pat indicated that it remains to be determined. There are mineral and property rights questions and permit issues that complicate this matter.
- What is the relationship between the sediment and tailings before and after the flood? R: The Weed Map indicates an artificial lake, so my guess is that the tailings were there before the flood. The dam was built at Montana Street and a massive amount of suspended sediment was rerouted in the area from Blacktail Creek to the Butte Reduction Works (just west of the smelter on Montana Street).
- If you could expand the geographic scope, where would you conduct additional sampling? R: Grove Gulch. Nick showed this area on the LIDAR map and noted the need for additional work in lower Grove Gulch. Pat offered that the LIDAR survey was expanded to cover this area in case restoration actions might occur in that region.
- What about the Bell Smelter (west of Harrison Ave and south of Harvard Ave)? R: I've just seen slag waste there. Tom Malloy added that there are two benches there that seem like a classic tailing dam?
- Does the old landfill contribute anything? R: I don't know.
- Does the light area on the LIDAR map indicate fill? R: Yes. This area is 7-10' deep in Diggings East. Where else was the fill thicker? R: Nick showed this area on the map.
- Was there more recent fill in the 70's at the Diggings East eastern boundary? R: Yes. I "bottle-dated" the fill.

Small Projects – Amendment of BAO Restoration Plan

Pat provided the background on what the *BAO Restoration Plan* has specific to small projects, why an amendment is needed if the BNRC wants a broad choice of project types, and the review/approval process of an amendment. If the BNRC wants to go forward with an amendment, a new process would not likely occur until fall 2014.

Pat indicated he sought concurrence from the BNRC that they did not want to limit the small project process to just projects that fall outside the designated restoration categories. Elizabeth indicated that the original intent was for the small project category to be additive of, not outside of, the other categories. Mark and Emmett agreed and added that they did not want to see the small projects process used for those projects that already had allocations in the *BAO Restoration Plan*, such as more funding beyond the \$10 million allocated for the Basin Creek Water Treatment Plant. Pat reviewed the various category options. Pat confirmed that projects would need to meet the legal threshold of restoring or replacing Butte Area One injured surface or groundwater resources. Members agreed they want the small project process to broadly cover all the categories and types of project but exclude those projects already covered via funding allocations in the BAO Restoration Plan. Pat asked whether they wanted to keep “storm water” as an eligible category for small projects even though they gave it no funding allocation in the *BAO Restoration Plan*. Helen suggested keeping it in, but noted the need to make sure it did not replace normal government function.

Pat next reviewed the funding cycle options. Helen suggested selection occur by spring to allow for work to occur during construction season. Dave suggested that even with an open cycle process, there needed to be structure to it. Elizabeth suggested solicitation late fall, preceded by a public outreach workshop, starting in fall 2014. Dave suggested a workshop in September with a deadline for proposal submittals of 60 days later. Staff analysis would occur in December, with BNRC action in early winter, and no later than March, so that projects would be ready to go by May. Members did not advocate limiting the number of projects per year/cycle or limiting the total dollar value of the projects, as long as they did not exceed the category total of \$1 million. Members agreed to keep the \$100,000 as the maximum NRD funding for any single project. Elizabeth and Helen noted the need for more emphasis on matching funds in the sample form, including adding matching funds the explanations at the top.

Public Comment on Small Projects Process

Bev Hartline, Vice Chancellor of Research for MT Tech, offered the following suggestions:

- 1) That a simpler, separate process be developed to provide opportunities for young people.
- 2) That BNRC structure the proposal form so that it is similar to the scope of work for the project that entities would implement.
- 3) That applicants would need to know by March if they have approved proposals.
- 4) That only 30 days between the workshop and application deadline would be sufficient.

Colleen Elliott suggested condensing the submittal process timeframe and noted her agreement with Bev’s suggestion of an earlier decision date.

In response to Bev's suggestions, Elizabeth noted that there is no minimum for any project and that some specific outreach should occur with the schools to target youth. Dave noted the need for a more simple type of contract arrangement for such projects. Bill noted his agreement with both Bev and Colleen's suggestions. Carol Fox indicated the need for further research on the possibilities of an easier contracting process than what has been used to date for funded NRD projects and mentioned CFWEP might be an alternative.

Charlie O'Leary asked whether a portion of the Avian Park project idea that was submitted in 2010 would be eligible for consideration. R: Previous ideas can be submitted as long as they are within the small project funding limit of \$100,000 and does not overlap/conflict with other funding allocations.

Council Action

Elizabeth proposed a motion to implement the small project process changes that were developed through the meeting discussions. Mark seconded the motion. There was no additional public comment. The motion passed unanimously. The BNRC will take action of the proposed amendment language and revise the proposal submittal form at their next meeting.

Program Updates

Pat presented and answered questions about an overhead slide (attached) that summarized the status of the BAO Restoration Fund and its subcategories as of January 1, 2014. Questions were asked about: 1) whether the expenditures on Diggings East were reflected (R: not yet; costs are about \$60,000); and 2) whether more detailed reports will be available as things start to roll and more substantial amounts are spent? (R: yes, the NRDP can provide expenditure reports at the project level.)

Pat indicated that updates and annual work plans specific to the Butte Tree and MT Tech Native Plants projects would be covered at the BNRC's next meeting to occur in late April. Pat also indicated that the NRDP will be hiring a 3rd party to come in to evaluate all the revegetation projects, including the one being implemented by Norm DeNeal, to assess success/failure and identify ways to improve.

Pat briefed the Council about the NRDP's plan to have a new task order with MBMG that would involve a compilation of all the waste/groundwater contamination studies and documentation of why the proposing tailing removal actions are needed. [The report would also look at the potential effect of removal on remedy.] The desired completion date would be July 2014. Documents to be compiled, summarized, and connected include MBMG's review of about a dozen ARCO documents concerning alluvial groundwater studies, and the various MBMG documents, including the 2010 Parrot Tailings investigation, the pumping test report, the Diggings East/Northside Tailings investigation document covered at this meeting, and the pending Blacktail Creek Tracer Study document. Nick Tucci would complete most of the work for this document and no new studies would be conducted. Questions were asked about the document's structure, budget, distribution; the need for BNRC action; and how the timeframe for this document product fits with the negotiation schedule. Nick responded that, while the document structure still remains to be worked out, the document would provide a chronology of

evidence from all the investigations funded by NRDP and groundwater documents produced by ARCO pursuant to the unilateral administrative order (UAO). He estimated the budget as \$50,000 to \$60,000. Pat responded that more information would be provided to the BNRC, that EPA's schedule was aggressive, and that it is important for the State to complete its due diligence.

Past Meeting Summaries

Members reviewed the April 11, 2013 and September 26, 2013 draft meeting summaries. Pat reviewed changes from Rob Collins to the September 26th meeting summary. Elizabeth offered corrections to the April 11, 2013 meeting summary. The Council then approved both meeting summaries, as amended. Final meeting summaries are available from Pat upon request.

The meeting was adjourned.

ATTACHMENT A: SCOPE OF WORK

Butte Tree Planting Project

A. Project Summary

The *2012 Butte Area One Final Restoration Plan* allocated \$2,080,000 to the “Butte-Silver Bow Soil Testing and Placement, Tree and Shrub Planting” project (hereinafter, the “Butte Tree Planting Project”) proposed by Butte-Silver Bow (BSB), the Project Sponsor, to be implemented from 2013 to 2019. This project involves a continuation and expansion of a 2012-13 “expedited” tree planting grant funded by the Natural Resource Damage Program (NRDP). This scope of work and associated budget cover the first two years (2013-14) of this multi-year project.

B. Goal

The primary goal of this project is to restore the vast landscape on the Butte Hill and re-establish native species diversity in open-space areas, with a primary emphasis on erosion resistance and reducing sediment loading to Silver Bow Creek by planting hundreds of mature trees and shrubs that will restore small wildlife habitat and re-establish a diverse, self-sustaining vegetative cover on the reclaimed areas.

C. Objectives

The project will be implemented over a multi-year period, with the following objectives pursued on an annual basis:

1. Identify up to 10 locations for tree and shrub plantings, with an emphasis on taking advantage of natural drainage and soil conditions that promote growth;
2. Install and maintain all plantings; and
3. Promote stewardship through public education about this revegetation project and the importance of long-term protection.

D. Annual Tasks and Activities

The Project Sponsor will perform the following tasks in order to accomplish the objectives, although these tasks could change as a result of the planned annual review process:

Task 1: Select Priority Planting Areas

- a) Retain horticultural and restoration specialists to evaluate potential sites for plantings, and recommend appropriate tree and shrub species for plantings to maximize success and survival rates;
- b) Cross-reference priority locations to the prevailing land use regulations, i.e., Open Space designations in City-County Growth Policy and Zoning Ordinance, to verify long-term site protection and sustainability;
- c) Verify and/or secure access agreements, as necessary, for installation and maintenance of plantings; and

- d) Coordinate with NRDP, DEQ, EPA, BP/ARCO, MT Tech, Butte Extension Service, local Urban Forestry Board, and other entities to identify planting locations and opportunities, including attending and participating in relevant Superfund and community meetings that pertain to this revegetation project.

Task 2: Plant Trees and Shrubs

- a) Clear and grub each location; remove all loose debris and perform general cleanup;
- b) Salvage any available topsoil for re-use; re-grade locations to desired elevations;
- c) Install weed control fabric (as necessary) and rock along steep slopes;
- d) Import soils and/or compost to achieve the desired nutrient mix in soils (fertilize and mulch);
- e) Plant trees and assorted shrubs at each approved location;
- f) Enhance adjacent and surrounding vegetation with native plants and grasses that are drought tolerant;
- g) Install temporary drip irrigation systems (from nearby water sources) or arrange for consistent watering of all new plantings for at least three years;
- h) Install tree stakes and other site management features (e.g., re-install fences) as necessary; and
- i) Record all locations with GPS coordinates and input to database; maintain database for long-term project reporting and management needs.

Task 3: Promote Stewardship through Public Education about Revegetation Project

- a) Prepare multi-media materials for educational use, make presentations in local classrooms and to civic groups, and promote news stories about the ongoing tree planting project and restoration work; and
- b) Install public information and interpretive signage at selected locations to enhance citizen knowledge and promote stewardship within the community.

E. Submittals

The Project Sponsor will submit the following deliverables to the NRDP in conjunction with the execution of the above tasks:

1. An “annual work plan” that identifies locations of proposed plantings, quantifies the proposed planting effort, and specifies a project budget and schedule for the field season, beginning with the 2014 field season. For each proposed restoration location a “waste cover improvement/revegetation” form will be completed and subjected to a “decision tree process.” The form and decision process will be developed by the NRDP with consultation from the Project Sponsor. The annual work plan will be subject to NRDP approval. Once approved, the Project Sponsor will implement the annual work plan.
2. Quarterly progress reports and invoices to the NRDP. The Project Sponsor can elect to submit progress reports and invoices on a monthly basis.
3. An ‘annual progress report’ to the NRDP detailing the work completed during the previous year. This report will summarize the Project Sponsor’s activities and identify successful actions, as well as failures, and offer suggestions on how to improve the project in the subsequent year. It will also include a proposed budget for the upcoming year. Project Sponsor will present a summary of the material in this progress report at a BNRC meeting.

F. Staff/Budget Narrative

BSB has prepared its budget for the 2013-14 construction seasons based on the actual work completed during the 2013 construction season in excess of the grant funds allocated from the Expedited BSB Tree Planting Project² and for work to be completed under the 2014 annual work plan for the Butte Tree Planting Project. This first budget (Attachment B1) covers work in 2013; the second budget (Attachment B2) covers work in 2014. A subsequent budget will be submitted with each annual work plan and will essentially cover one calendar year, a period from January 1 to December 31. Future year's activities will be subject of updated funding agreements to be negotiated and, if agreed to, executed on an annual basis.

Salaries

The primary BSB employee managing the project will be the Reclamation Manager. It is expected that the Reclamation Manager would devote approximately 416 hours/year to the project; BSB will contribute 50% in-kind for the Reclamation Manager's salary and benefits, and 50% of such will be paid through this Agreement. A number of other BSB professionals will also spend time working on this project, and the annual budget will be used to project the cost of their contributions. Through standard time-card procedures, the Project Sponsor will provide for actual time spent on tasks – contract administration, managing contractors, field oversight, etc. – directly related to the project.

Substantial field work will be done by BSB operators and laborers who are part of the Superfund operations and maintenance work program. When assigned to the tree project, generally, the work crew will be two operators and one laborer to do the plantings (excavation, soil and compost hauling and placement, some watering, etc.) and work in concert with any contractors hired to complete construction activities. Operators and laborers will be budgeted for approximately 416 hours each year, with 100% of their wages paid through this Agreement for only actual hours devoted to tasks directly related to the project.

Benefits

For budgeting purposes, benefits are estimated at 50% of workers' salaries/wages. However, actual benefits paid to personnel working on this project will be invoiced along with the backup detail from the accounting system.

Contracted Services

In general, the scope of work in this Agreement will be performed through a combination of services provided by BSB personnel, construction contractors, and landscaping specialists. When contractors are to be retained, BSB will follow its standard contract selection processes

² As documented in a 10/27/13 e-mail from Pat Cunneen to Kathy Coleman of the NRDP, with the concurrence of NRDP, BSB planted 300 mature trees and 25 shrubs on reclaimed areas of the Butte Hill for a total costs of \$142,609, with \$69,146 to be paid under the expedited tree planting contract (the remaining balance under that contract) and the additional costs for 2013 planting to be covered under this Agreement for the continued tree planting project approved through its inclusion in the Final 2012 Butte Area Restoration Plan.

and task order systems to select and employ the most qualified and cost-effective service provider.

Supplies and Materials

The supplies and materials needed to execute this project will be acquired following the State of Montana's competitive procurement process. Expenses in this category include, but are not limited to: tree stock, shrubs and bushes, soil and amendments, tools and equipment, temporary irrigation fixtures, and other various planting supplies. These direct expenses will be budgeted for each year and their procurement will be documented with purchase orders and payment vouchers submitted for reimbursement through quarterly invoices.

ATTACHMENT B1: 2013 BUDGET

Butte-Silver Bow Tree Planting Project	
Year 1 Budget for 2013	
Expense Category	BAO Restoration Fund
Salaries & Wages:	\$ 3,000
Fringe Benefits: @ 50% of Salaries	\$ 1,500
Supplies and Materials:	\$ 25,000
Soil, Compost, Limerock, Stakes	
Contracted Services:	\$ 55,000
Hauling/Excavating/Planting/Irrigating	
Grand Total	\$ 84,500

ATTACHMENT B2: 2014 BUDGET

**Butte-Silver Bow Tree Planting Project
Year 2 Budget for 2014**

Expense Category	BAO Restoration Fund
Salaries & Wages:	
Reclamation Manager (\$30.50/hr x 416 hrs x 50%)	\$ 6,344
Operators (\$24.83/hr x 416 hrs)	\$ 10,329
Laborers (\$22.12/hr x 416 hrs)	\$ 9,202
Subtotal	\$ 25,875
Fringe Benefits:	
Reclamation Manager (50% of salary)	\$ 3,172
Operators (50% of wages)	\$ 5,165
Laborers (50% of wages)	\$ 4,601
Subtotal	\$ 12,938
Supplies and Materials:	
Stock: Trees and Shrubs	\$ 50,000
Stakes, rope, bark protectors, etc.	\$ 5,000
Limerock (\$23.00/cy x 1,000 cy x 75%)	\$ 17,250
Soil (\$18.00/cy x 2,000 cy x 75%)	\$ 27,000
Compost (\$28.00/cy x 500 cy x 75%)	\$ 10,500
Manure (\$20.00/cy x 500 cy x 75%)	\$ 7,500
Seeds and Fertilizer	\$ 5,000
Subtotal	\$ 122,250
Contracted Services:	
Landscape Architect/ Soil Scientist	\$ 10,000
Soil Testing/Hydrogeology Analyses	\$ 50,000
Hauling/Excavating/Planting/Irrigating	\$ 50,000
Subtotal	\$ 110,000
Direct Cost Subtotal	\$ 271,063
Contingency:	
Contingency (Direct Costs x 15%)	\$ 40,659
Grand Total	\$ 311,722

ATTACHMENT A: SCOPE OF WORK
Restoring Native Plant Diversity by Montana Tech

A. Project Summary

The 2012 Butte Area One Final Restoration Plan allocated \$1,000,000 to the “Restoring Native Plant Diversity” revegetation project proposed by Montana Tech (the Project Sponsor) from 2013 to 2021. This project involves a continuation and expansion of previously funded Natural Resource Damage Program (NRDP) grants.

B. Goal

The primary goal of this project is to re-establish a diverse, self-sustaining native plant community on the reclaimed areas of the Butte Hill. Plant diversity should increase the erosion resistance of the covers on the mine dumps and wastes left in place and reduce susceptibility to invasive species. A diverse native plant community is defined by the Project Sponsor as having at least 14 species of plants at one time, with a goal that 75% of those species will be native forbs or shrubs. The native species that flourish may fluctuate over time according to and as a result of environmental changes. This self-sustaining ecosystem should not require special care.

C. Objectives

The following objectives will be pursued in order to reach the goal:

1. Produce dispersal islands of diverse native plant communities. These islands will be small patches (25 to 100 square meters) of native plants set into previously reclaimed sites or incorporated into areas proposed for reclamation. Each island will consist of at least 14 species, of which 75% will be native forbs or shrubs, to provide a potential native plant dispersal mechanism on the Butte Hill ‘caps’ or other areas determined through consultation with NRDP and BSB. These dispersal islands will also contain native grasses, shrubs and trees. These dispersal islands will create a vegetative mosaic consisting of the existing grass community planted for remediation and patches of dispersal islands of native plants. After initial establishment, these islands should not require extra watering or weeding that is not a part of the normal maintenance of a reclaimed site.
2. Determine which native forbs and shrubs will be the most likely to re-establish on reclaimed areas. The Project Sponsor has been working with 70 species of native forbs and 38 species of shrubs to determine which are most likely to flourish at these reclaimed sites. Through previous efforts, the Project Sponsor identified 27 species of forbs that were highly productive, were easy to collect, did not require stratification and should germinate readily. The Project Sponsor will further identify which species are highly productive and will likely act as a ‘cover crop’ versus the more ‘recalcitrant’ species that will require treatment and/or are more difficult to collect and slower to establish.

D. Tasks

The Project Sponsor will perform the following tasks in order to accomplish the objectives, although these tasks in the future could change as a result of the planned annual review process (see Paragraph E.1, below):

1. Collect seed from the nearby, native forb and shrub communities.
2. Maintain and expand the seed orchard on the Montana Tech campus. The expansion will accommodate shrubs and a greater variety of forbs.
3. Produce 3 lbs. of forb/shrub seed each year through collection efforts in the seed orchard and nearby native communities.
4. Operate and maintain the Montana Tech greenhouse which will function as the center of seed management. Seeds will be dried, cleaned and stored; then treated to initiate germination. Those seedlings that 'pot up' will be grown in the greenhouse until they are mature enough to be hardened outside. The greenhouse will also maintain a supply of containerized young plants until they can be transplanted at dispersal islands.
5. Expand the "over-wintering shed" capacity at the Montana Tech campus.
6. Produce at least 60 forb sod mats per year. Each mat will be one square meter.
7. Apply the annually produced 3 lbs. of seeds, along with 15 lbs. of native forb seed and 2 lbs. of native shrub seed that was produced through previous efforts, for plantings coordinated with NRDP and BSB over the term of this contract.
8. Coordinate with NRDP, BSB, DEQ, EPA, BP/ARCO and other entities to identify planting locations and opportunities. This will require attending and participating in various Superfund and community meetings.
9. Establish native forb and shrub dispersal islands through the installation of forb sods, direct planting of seeds and transplanting of containerized plants. These dispersal islands will be maintained until some degree of self-sufficiency is established.
10. Inspect and evaluate the dispersal islands. Determine which species are surviving, propagating and spreading. Determine which planting techniques and which locations are producing the greatest success. Make subsequent adaptations to increase the probability for achieving the project goal.
11. Promote stewardship among the community and make information about this project available locally by attending and presenting information at community meetings and symposiums and by preparing outreach materials.

E. Submittals

The Project Sponsor will submit the following deliverables to the NRDP in conjunction with the execution of the tasks:

1. An "annual work plan" that identifies locations of proposed plantings, quantifies the proposed planting effort, and specifies a project schedule for the field season. For each proposed restoration location a "waste cover improvement/revegetation" form will be completed and subjected to a "decision tree process." The form and decision process will be developed by the NRDP with consultation from the Project Sponsor. The draft annual work plan will be subject to NRDP approval. The Project Sponsor will submit a draft annual plan to the NRDP in January of each year, beginning in 2014, and the NRDP will review and

provide comments on the draft within 30 days of receipt of the draft plan. Once the final plan has been approved by the NRDP, it shall become effective as of April 1 and the Project Sponsor will implement the annual work plan.

2. Quarterly progress reports and invoices to the NRDP. The Project Sponsor can elect to submit progress reports and invoices on a monthly basis.
3. An ‘annual progress report’ to the NRDP detailing the work completed during the previous year. This report will specifically address how Project Sponsor performed each of the tasks set forth in Paragraph D, above, and the results of such performance. This report will summarize the Project Sponsor’s activities and identify successful actions as well as failures and offer suggestions on how to improve the project . It will also include a proposed budget for the upcoming year. If directed by the NRDP, Project Sponsor will present a summary of the material in this progress report at a BNRC meeting.

F. Staff

This project will be directed by a Restoration Ecologist at Montana Tech. This position will be under the supervision of Montana Tech’s Project Investigator; whose supervision should ensure continuity with previous work conducted for the NRDP and whose guidance will foster improvements in techniques and procedures. After two years of supervision, the Restoration Ecologist should be able to independently execute the duties outlined in this scope of work. The Restoration Ecologist will work full-time for Montana Tech, with one-half of his or her time, (up to 780 hours in the first nine months of this project and up to 1040 hours per year, thereafter), being funded by this Grant Agreement and the other one-half of his or her time being funded by Montana Tech to develop a “Restoration Ecology Program” at Montana Tech and to teach courses—both of these obligations are separate from the duties established in this agreement. It is understood that over the course of the year, the Restoration Ecologist will split her/his time equally between these two efforts. The Restoration Ecologist will diligently track and record her/his time spent on each endeavor using the attached “time and effort report” or an equivalent form. Only those hours spent in the actual execution of this contract will be eligible for reimbursement by BAO Restoration Funds from the NRDP. In the event that the Restoration Ecologist works on this project more than 780 hours limit in the initial nine months or 1040 hour limit in the years thereafter, funding for that additional work shall not be paid by the BAO Restoration Fund, but shall be the responsibility of Montana Tech. All academic activities such as teaching, researching, and directing student projects, will be funded by Montana Tech.

The Restoration Ecologist will be assisted by a part time technician and undergraduate students as needed in order to accomplish the goal of this NRDP project. These staff members will diligently track and record their time and those hours spent in the actual execution of this contract will be eligible for reimbursement by the NRDP from the Butte Area One Restoration Fund.

ATTACHMENT B
Initial Nine Month Budget
Restoring Native Plant Diversity by Montana Tech

Expense Category	BAO Restoration Fund
Salaries & Wages:	
Restoration Ecologist (\$31.25/hr x 780 hrs)	\$ 24,375
Principal Investigator (\$30/hr x 375 hrs)	\$ 11,250
Part time Technician (\$16/hr x 750 hrs)	\$ 12,000
Students (\$8/hr x 750 hrs)	\$ 6,000
Subtotal	\$ 53,625
Fringe Benefits:	
Restoration Ecologist (46% of salary)	\$ 11,213
Part time Technician (46% of salary)	\$ 5,175
Students (3% during school term/10% in summer)	\$ 600
Subtotal	\$ 16,988
Other:	
Contracted Services	\$ -
Supplies/Materials	\$ 14,000
over-winter shed	\$ 6,000
Communications	\$ -
Travel	\$ 600
Rent and Utilites	\$ -
Subtotal	\$ 20,600
Direct Cost Subtotal	\$ 91,213
Miscellaneous:	
Indirect Cost (25% of Direct Costs)	\$ 22,803
Grand Total	\$ 114,016

Native-Plant Restoration Project
Year 2 Annual Plan: April - Dec 2014

The Project Sponsor proposes to perform the following tasks during Project Year 2 (through December 31, 2014) in order to accomplish the objectives.

1. *Collect seed from the nearby, native forb and shrub communities. Produce and prepare at least 3 pounds of seeds per year from native communities and the seed orchard in combination (See also Task 2).*

Seed collection will continue in 2014. Montana Tech will begin collecting native forb and shrub seed starting around June. The calendar date of seed production varies by several weeks each year determined by environmental conditions. See Attachment I for approximate dates of collection for many native species of forbs, shrubs, trees, and grasses. The early season period is from end of May through June. Mid-season encompasses late June through early August, while the late season extends from mid-August to mid-October.

Locations for collections have not been mapped previously, and they will be mapped with GPS locations this year. Small populations of plants are primarily found within 1.5 – 2 miles of Montana Tech on the Big Butte and associated hills, ridges and gulches. Some species are collected at other locations for example the East Ridge, Timber Butte and Fleecer Mountain. The collection sites in these areas will be mapped by GPS also. Each species is found in more than one location. Native seeds ‘ripen’ over several weeks, therefore maximal collection yield requires several trips to each population. Some species retain seeds after seed-ripe. Other species have mechanical mechanisms which disperse the seeds with a quick twist or coil of a pod. These seeds must be collected before that moment of dispersal. Some species can be collected while the pod is not quite ripe. We will continue to work on the best ways to maximize collection for specific species. Because of lengthy ripening periods, repeated visits to a population are required to maximize collection yield.

2. *Maintain and expand the seed orchard on the Montana Tech campus. The expansion will accommodate shrubs and a greater variety of forbs.*

Seed collection will continue this summer in the seed orchard. Seed from the natural areas (see Task 1) and from the seed orchard will be cleaned, separated, inventoried, and weighed. For 2013, the total weight of seeds collected has not been determined because not all seeds have been cleaned, separated from various chaff components, and weighed. At this time, 49 species of seed collected during the 2013 season have been cleaned and weighed amounting to 10.9 pounds of seed. We have lesser amounts of seeds from more than 40 additional species remaining to be cleaned and weighed from the 2013 collection.

During 2013 several species were determined to be undesirable because they were aggressively establishing everywhere in the forb orchard. These species have been removed from the forb orchard: *Rumex* (dock) *Deschampsia caespitosa* (tufted hair grass), weedy species of *Potentilla* (cinquefoil), *Epilobium* (fireweed), and *Solidago* (goldenrod). The areas they have vacated now can be filled with other species—either new ones or expanding

the area dedicated to other established species.

The forb orchard will be maintained:

- Watering is on a timer but must be checked regularly according to environmental conditions and to check for necessary repairs.
- Weeding primarily involves maintaining the edges free from grass encroachment. In the past we have used herbicide carefully to keep grass out of the plots. The general area requires occasional mowing and weed whacking.

Plants in cold sheds and nursery will be cared for and handled appropriately:

The plants that we ‘pot-up’ from treated seeds are moved outside to the nursery early in the spring to harden and acclimatize. During the winter months (mid Nov – April) these plants are moved inside the cold sheds, insulated with sawdust (which the sawmill gives us), and covered with thermal blankets. The plants must be watered occasionally during the winter even though they are dormant. Approximately 5,000 plants from previous years in various size pots have been over-wintered. In 2014 we intend to plant enough to replace the number planted, so the inventory at the start of next year (January 2015) would be at least 5000.

3. *Operate and maintain the Montana Tech greenhouse, which will function as the center of seed management. Seeds will be dried, cleaned and stored; then treated to initiate germination. Those seedlings that ‘pot up’ will be grown in the greenhouse until they are mature enough to be hardened outside. The greenhouse will also house a supply of containerized young plants until they can be transplanted in dispersal islands.*

As we collect seeds they will be placed in the greenhouse in labelled paper bags to completely dry. Once they are dry they will be ‘cleaned’ of the chaff that comes attached to the seeds. We use a variety of techniques to ‘clean’ seeds depending on how much chaff and what type is attached to the seeds. Some seeds have fluffy umbrellas for dispersal, similar to dandelions. Those umbrellas need to be removed. Currently, we put a small amount in a food blender and pulse several times. Too much pulsing creates a felted mat which is difficult to deal with. After the umbrella is knocked off, the material can be sifted through strainers or put through a ‘clipper’ (a machine that variously shakes and blows and sifts small dried material, eventually separating seeds from chaff) to separate the broken umbrellas from the seeds.

Once the seeds are cleaned, they are sealed in Ziploc bags and placed in a cold chamber at about 40 degrees F for storage.

Of the approximately 85 species of forbs and approximately 26 species of shrubs, all but 25 forb species and 4 shrub species require treatment before they will germinate. In October we will begin treating seeds so that they can be planted in individual containers. “Containers” are tubes of various sizes within which treated seeds grow into individual plants for the project.

The greenhouse will be cleaned, operated routinely and maintained in functioning condition.

The newly acquired, used, plastic-covered hoophouse/cold shed will be completely constructed including benches, watering system and cooling fans. The hoophouse will increase our overwintering capacity and the capacity to prepare additional forb sods.

4. *Produce and deploy 60 forb sod mats this year. Each mat will be about one square meter.*

Montana Tech has 30 square meters (approximately) of forb sods started in the greenhouse as of 1 April 2014 to be used in new dispersal islands during summer of 2014. They will be planted in the areas where BSB planted trees in 2013. Another 30 forb sods will be started in the greenhouse to be planted in the fall. The fall sods will be planted along the Copper Trail in proximity to BSB's 2014 tree pods.

5. *Apply locally collected native plant seed.*

Some seeds will be planted within each dispersal island. We are also planning to coordinate with BSB and NRDP to identify a few specific sites for areal seeding in the fall. This seeding could use up to one pound of the native-plant seed inventory.

6. *Coordinate with NRDP, BSB, DEQ, and BNRC to identify planting locations and opportunities. This coordination will require attending and participating in various superfund and community meetings.*

A representative of Montana Tech and this project will attend and participate in all meetings held to coordinate this project with stakeholders and regulators. Information gained from the meetings will guide priorities and the development of the Year 3 (2015) plan.

7. *Establish native forb and shrub dispersal islands through the installation of forb sods, direct planting of seeds and transplanting of containerized plants. These dispersal islands will be maintained until some degree of self-sufficiency is established.*

Montana Tech met with BSB's Tom Malloy in early April to coordinate 2014 sites. The forb sods produced by Montana Tech during spring for dispersal islands will be placed in three of last year's BSB tree pods (two at the Missoula Street ball field and one at the Walkerville ball field). The forb sods prepared in early summer will be placed near the sites of BSB plantings for this summer along the Copper Walking Trail between Montana St. and Main St.

In coordination with the fall dispersal islands to be established along the Copper Trail, we recommend including two small islands of primarily small native grasses. Inclusion of the grasses will help address one of the difficulties this native plant project faces: interference/competition from the large-stature, established, introduced species of grasses planted during remediation. It will be instructive to future efforts to compare how the native grasses perform compared to the grasses on the remediated sites, and how the forbs fare in competition/proximity to the native grasses in these plantings.

The initial watering that the new dispersal islands require will be performed by BSB, at the same time they water their nearby plantings. This coordination will reduce labor time and costs to establish the plantings. Weeding will be performed by Montana Tech as needed. Some additional dispersal island sites have been recommended for consideration. Their inclusion will depend on how well they meet the selection criteria as determined by NRDP, BSB, and BNRC.

- 1) Upper Missoula Gulch and other newly released sites: Shrubs, primarily mountain mahogany (*Cercocarpus ledifolius*) could be planted at up to three sites in upper Missoula Gulch or other newly released areas on the Butte Hill. The mountain mahogany would be planted along with wild rose (*Rosa woodsii*) and skunkbrush sumac (*Rhus trilobata*). Approximately 15 forb species would be planted among the shrubs, while grass plugs of small stature native grasses would be planted around the edges. The inclusion and exact location of these sites would be determined by NRDP. Upper Missoula gulch is comparatively recently remediated, so the non-native grasses are less established, and it may be possible to demonstrate that native plant communities can establish better in such locations.
 - 2) We will seek approval to modify our approach by creating dispersal sinks in the expanse of remediation species surrounding the dispersal islands. The purpose is to facilitate spreading and establishment of native plants from the dispersal islands. If approval is granted, we will establish permanently marked transects at various distances from the new dispersal islands. We will use Daubenmire plots to record frequency of occurrence of dispersing species. The final plan for this effort needs to be established in conjunction with the restoration working group.
8. *Inspect and evaluate the dispersal islands. Determine which species are surviving, propagating and spreading. Determine which planting techniques and which locations are producing the greatest success. Make subsequent adaptations to increase the probability for achieving the project goal.*

Determination of which species are propagating and spreading may take several years because of varying environmental conditions. However, it is important to include this strategy for accountability in the work plan starting this summer. This inspection and evaluation should be performed by or under the direction of a qualified restoration ecologist. This task includes monitoring and evaluating dispersal islands established under the previous contract.

9. *Promote stewardship among the community and make information about this project available locally by attending and presenting information at community meetings and symposiums and by preparing outreach materials.*

Montana Tech will continue to attend and present information at community meetings and

symposia. Preparation of outreach materials is planned for Year 3, after the new restoration ecologist is in place.

Proposed Overall Schedule for Project Year 2

Task	June	July	August	September	October	November	December
1. Seed Collection	Early	Mid	Late				
2. Seed Orchard		Collection					
		Cleaning/Processing/Weighing					
3. Greenhouse operation	Hoophouse Completion			Routine operation			
4. Forb Sod Mats	Produce & Deploy 1		Produce & Deploy 2				
5. Apply seeds		BSB 2013		BSB 2014 & Areal			
6. Coordination						Year 3 Plan	
7. Dispersal Islands		BSB 2013			BSB 2014		
8. Inspect & Evaluate							
9. Stewardship & Info.							

ATTACHMENT I

**BUTTE NATIVE PLANT SPECIES AND
APPROXIMATE TIME OF SEED COLLECTION**

[Names from *Vascular Plants of Montana*, Robert D. Dorn, 1984]

Collection time code	e=early; m=mid; l=late		
Phenology	GENUS	SPECIES	COMMON NAME
	FORBS		
m	<i>Achillea</i>	<i>millefolium</i>	yarrow
e	<i>Agoseris</i>	<i>glauca</i>	mtn dandelion
m	<i>Allium</i>	<i>cernuum</i>	nodding onion
m	<i>Allium</i>	<i>acuminatum</i>	onion
e	<i>Alyssum</i>	<i>alyssoides</i>	yellow BB alyssum
m	<i>Antennaria</i>	<i>microphyllum</i>	pussytoes
e	<i>Arenaria</i>	<i>congesta</i>	sandwort
l	<i>Apocynum</i>	<i>androsaemifolium</i>	dog bane
m	<i>Astragalus</i>	<i>sp</i>	yellow
m	<i>Astragalus</i>	<i>alpinum</i>	(Karen's pasture)
m	<i>Astragalus</i>	<i>atropubescens</i>	white, prple
m	<i>Astragalus</i>	<i>crassicaarpus</i>	groundplum milkvetch
e m	<i>Arabis</i>	<i>hoelboelii</i>	rock cress
l	<i>Artemesia</i>	<i>absinthium</i>	
l	<i>Artemesia</i>	<i>dracuncululus</i>	wild tarragon
l	<i>Artemesia</i>	<i>ludoviciana</i>	prairie sage
l	<i>Artemesia</i>	<i>frigida</i>	fringed sage
m	<i>Aster</i>	<i>oblongifolia</i>	museum way
m l	<i>Aster</i>	<i>occidentalis</i>	western mtn aster
m	<i>Aster</i>	<i>tanacetifollius</i>	fern-leaf aster
l	<i>Aster</i>	<i>peregrinus</i>	wandering aster
e	<i>Balsamorhiza</i>	<i>saggitata</i>	Arrowleaf balsamroot
e	<i>Besseya</i>	<i>Wyomingensis</i>	kittentail
m	<i>Calochortus</i>	<i>nuttallii</i>	sego lily
m	<i>Campanula</i>	<i>rotundifolia</i>	campanula
m l	<i>Castilleja</i>	<i>miniata</i> (?)	red
m l	<i>Castilleja</i>	<i>Sp.</i>	yellow
m	<i>Chaenactis</i>	<i>douglassii</i>	dusty maiden
m	<i>Clematis</i>	<i>ligustifolia</i>	white, local
l	<i>Cleome</i>	<i>serrulata</i>	bee plant
m l	<i>Collomia</i>	<i>sp</i>	collomia
m	<i>Commandra</i>	<i>umbulatum</i>	bastard toadflax
m	<i>Clematis</i>	<i>columbiana</i>	blue vine

l	<i>Coreopsis</i>	<i>tinctoria</i>	tickseed
m	<i>Cryptantha</i>	<i>sp</i>	miners candle
e	<i>Delphinium</i>	<i>bicolor</i>	larkspur
e	<i>Dodecatheon</i>	<i>sp</i>	shooting star
e	<i>Draba</i>	<i>sp (cana?)</i>	forb orch
e	<i>Douglasia</i>	<i>montana</i>	douglasia
l	<i>Epilobium</i>	<i>angustifolium</i>	fireweed-Norm's
l	<i>Erigeron</i>	<i>oblongifolia</i>	purple
e	<i>Erigeron</i>	<i>compositus</i>	cutleaf daisy
l	<i>Eriogonum</i>	<i>ovalifolium</i>	pink
m	<i>Eriogonum</i>	<i>umbellatum</i>	buckwheat
m l	<i>Eriogonum</i>	<i>flavum</i>	yellow buckwheat
e	<i>Erythronium</i>	<i>grandiflorum</i>	glacier lily
m	<i>Gaura</i>	<i>coccinea</i>	gaura
m	<i>Geranium</i>	<i>viscosissimum</i>	sticky geranium
m	<i>Geum</i>	<i>triflorum</i>	praire smoke
m l	<i>Gilia</i>	<i>aggregata</i>	scarlet gilia
l	<i>Grindelia</i>	<i>squarrosa</i>	curly cup gumweed
l	<i>Helianthus</i>	<i>annuus</i>	sunflower
e	<i>Haplopappus</i>	<i>acaulis</i>	yellow tufted daisy
m	<i>Hetereothea</i>	<i>villosa</i>	hairy golden aster
m	<i>Heuchera</i>	<i>cylindrica</i>	alumroot
e	<i>Lewisia</i>	<i>redivia</i>	bitterroot
m	<i>Iris</i>	<i>missouriensis</i>	iris
all	<i>Linum</i>	<i>perenne</i>	blue flax
m	<i>Lomatium</i>	<i>triternatum</i>	desert parsley
m	<i>Lithospermum</i>	<i>ruderales</i>	puccoon
m	<i>Lupinus</i>	<i>argenteus</i>	silver (no hair)
m	<i>Lupinus</i>	<i>sericeus</i>	silky (hairy)
m	<i>Mentzelia</i>	<i>laevicaulis</i>	blazing star
e	<i>Mertensia</i>	<i>sp</i>	bluebells
m	<i>Opuntia</i>	<i>sp</i>	prickly pear cactus
m	<i>Orthocarpus</i>	<i>sp</i>	(may be paintbrush)
m	<i>Oxytropis</i>	<i>lagopus</i>	rabbitfoot locoweed
e m	<i>Oxytropis</i>	<i>sericeus</i>	creamy locoweed
e	<i>Penstemon</i>	<i>nitidis</i>	little, deep blue
e	<i>Penstemon</i>	<i>procerus</i>	very little, deep blue...
e	<i>Penstemon</i>	<i>eriantherus</i>	big lilac flowers
e	<i>Penstemon</i>	<i>aranicola ?</i>	(Wasatch penstemon)
m	<i>Penstemon</i>	<i>eatonii</i>	red
m	<i>Penstemon</i>	<i>sp</i>	prolific spreading
m	<i>Phacelia</i>	<i>hastata</i>	silky phacelia
e	<i>Phlox</i>	<i>longifolia</i>	longleaf phlox

e	<i>Phlox</i>	<i>hoodii</i>	hood's phlox
m	<i>Potentilla</i>	<i>pennsylvanica</i>	grayish, Modess
don't want	<i>Potentilla</i>	<i>spp (weedy)</i>	cinquefoil
don't want	<i>Rumex</i>	<i>paucifolia</i>	dock
e	<i>Senecio</i>	<i>cana</i>	groundsel
m	<i>Sedum</i>	<i>stenopetalum</i>	stonecrop
l	<i>Solidago</i>	<i>missouriensis</i>	goldenrod
m-l	<i>Spharalcea</i>	<i>coccinea</i>	globemallow
	SHRUBS		
?	<i>Alnus</i>	<i>serrulata</i>	
l	<i>Amalanchier</i>	<i>alnifolia</i>	serviceberry
l	<i>Arctostaphylos</i>	<i>uva-ursa</i>	bearberry
m	<i>Artemesia</i>	<i>tridentata</i>	big sage
m	<i>Ceanothus</i>	<i>velutinous</i>	snowberry
l	<i>Cercocarpus</i>	<i>ledifolius</i>	mtn mahogany
l	<i>Chrysothamus</i>	<i>nauseosus</i>	rubber rabbitbrush
m-l	<i>Chrysothamus</i>	<i>viscidiflorus</i>	green rabbitbrush
?	<i>Cornus</i>	<i>steolonifera</i>	dogwood
l	<i>Eurotia</i>	<i>lanata</i>	winterfat
M	<i>Lonicera</i>	<i>sp</i>	honeysuckle
m	<i>Mahonia</i>	<i>repens</i>	Oregon grape
m	<i>Pershia</i>	<i>tridentata</i>	bitterbrush
m	<i>Philadelphus</i>	<i>lewisii</i>	mock orange
m	<i>Ribes</i>	<i>sp</i>	gooseberry
m	<i>Ribes</i>	<i>aureum</i>	golden currant
e m	<i>Ribes</i>	<i>cereum</i>	currant
m	<i>Rhus</i>	<i>trilobata</i>	skunkbush sumac
m	<i>rosa</i>	<i>gymnocarpa</i>	Melrose
l	<i>Rosa</i>	<i>woodsii</i>	rose
m	<i>Rubus</i>	<i>ideaus</i>	raspberry
m	<i>Rubus</i>	<i>parviflorus</i>	thimbleberry
m	<i>Shepherdia</i>	<i>canadensis</i>	buffaloberry
m	<i>Spirea</i>	<i>betulifolia</i>	bridal wreath
m	<i>Symphoricarpos</i>	<i>alba</i>	snowberry
l	<i>Tetradymia</i>	<i>cansecens</i>	horsebrush
	DECIDUOUS TREES		
l	<i>Acer</i>	<i>glabrum</i>	rocky mountain maple
l	<i>Acer</i>	<i>negundo</i>	boxelder
?	<i>Sorbus</i>	<i>sp (Butte)</i>	intro mountain ash
l	<i>Sorbus</i>	<i>sitchensis</i>	wild mountain ash
e	<i>Populus</i>	<i>tremuloides</i>	aspen

e	<i>Populus</i>	<i>angustifolia</i>	narrowleaf cottonwood
e	<i>Populus</i>	<i>acuminata</i>	black cottonwood
l	<i>Prunus</i>	<i>virginiana</i>	chokecherry
m	<i>Salix</i>	<i>amygdaloides</i>	peachleaf willow
m	<i>Salix</i>	<i>exigua</i>	length 6X width
m	<i>Salix</i>	<i>bebbiana</i>	dk gr, strong venation
m	<i>Salix</i>	<i>boothii</i>	sltly toothed; =green
m	<i>Salix</i>	<i>drummondii</i>	rolled margin
m	<i>Salix</i>	<i>geyerii</i>	hairy both sides
m	<i>Ulmus</i>	<i>pumila</i>	elm
	EVERGREEN TREES		
2nd yr	<i>Juniperus</i>	<i>communis</i>	common juniper
2nd yr	<i>Juniperus</i>	<i>scopulorum</i>	Rocky Mountain juniper
2nd yr?	<i>Juniperus</i>	<i>horizontalis</i>	
?	<i>Picea</i>	<i>engelmannii</i>	blue spruce
?	<i>Pinus</i>	<i>contorta</i>	lodgepole pine
?	<i>Pinus</i>	<i>flexilis</i>	limber pine
?	<i>Pseudotsuga</i>	<i>menziesii</i>	Douglas fir
	GRASSES		
m	<i>Agropyron</i>	<i>spicata</i>	bluebunch wheatgrass
m	<i>Agropyron</i>	<i>smithii</i>	western wheatgrass
m	<i>Bouteloua</i>	<i>gracilis</i>	grama grass
m	<i>Deschampsia</i>	<i>caespitosa</i>	tufted hairgrass
m	<i>Festuca</i>	<i>idahoensis</i>	idaho fescue
m	<i>Koeleria</i>	<i>crinata</i>	Junegrass
e m	<i>Oryzopsis</i>	<i>hymenoides</i>	Indian rice grass
m	<i>Poa</i>	<i>compressa</i>	Canada bluegrass

Budget Request
Year 2 of Butte Native Plants Diversity Project
NRDP Contract 8006-10293

Contract Year 2 is proposed to extend from June 1, 2014 through December 31, 2014. This 7-month year will allow the project to align its schedule with the calendar year, beginning is Year 3. The table summarizes the budget request.

Expense Category			Budget
Salaries & Wages:	Rate	Hours	
Restoration Ecologist		-	\$ -
Principal Investigator	\$ 30.00	300	9,000
Technicians	\$ 16.00	1,400	22,400
Project Manager	\$ 34.25	120	4,110
Students	\$ 10.00	1,200	12,000
Subtotal			47,510
Fringe Benefits:			
Restoration Ecologist (46% of salary)			-
Principal Investigator (25% of salary)			2,250
Technician & Project manager (46% of salary)			12,195
Students (3% academic year/10% summer)			990
Subtotal			15,435
Other:			
Contracted Services			5,000
Supplies/Materials			10,000
Communications			-
Travel			600
Other			-
Subtotal			15,600
Direct Cost Subtotal			78,545
Miscellaneous:			
Indirect Cost (25% of Direct Costs)			19,636
Grand Total			98,181

Narrative Explanation of Budget Request

Personnel Salaries and Wages.

Total: \$47,510

Since the restoration ecologist has resigned effective May 15, 2014, a search is being initiated for his replacement. The new restoration ecologist is expected to arrive by January 2015, thus no salary support for this position is requested.

We request funding to continue the Principal Investigator at \$30 per hour for 10 hours per week for the 30 weeks of this period. \$9,000

Because the Restoration Ecologist is not available, we propose to fill this void by having two technicians together working 60 hours per week on this project during the 20 weeks of the active, outdoors field season (June through mid-October), and then return to 20 hours per week of technician effort for the 10 weeks from mid-October through the end of the calendar year. Total effort 1,400 hours at \$16 per hour. \$22,400

A project manager will be assigned to the project (10% effort) to provide cost and schedule management and control. The hourly rate is \$34.25 and the total estimated hours is 120. \$4,110

For the seed collection, plantings, weeding, preparation, and greenhouse support, we propose to employ a few students at an average wage of \$10/hour. We estimate that the students together will provide about 60 hours of effort per week during 15 weeks (summer) and 20 hours of effort during the fall and early winter. \$12,000

Fringe Benefits. Fringe benefits are calculated at Montana Tech's rates for the different types of workers. \$15,435

Other.

Total \$15,600

We request \$5,000 for contracted services to conduct the Inspection and Evaluation described in Task 8. \$10,000 is requested for various supplies and materials. \$600 is requested for travel, primarily for the mileage involved in seed collection and plantings.

Miscellaneous. Indirect costs are calculated at 25% of direct costs. \$19,636

The BNRC recommends that the Governor approve an amendment the *December 2012 Butte Area One Final Restoration Plan* that replaces the process for funding small/miscellaneous projects set forth in Section 3.2 of with the following process:

3.2.7 Small/Miscellaneous Projects (p. 32) – new language

The *December 2012 Butte Area One Final Restoration Plan* allocates \$1 million toward implementing future small projects and specifies a maximum amount of funding for any small project of \$100,000. Eligible types of small projects include mine waste removal, mine waste area improvements, revegetation, stream restoration, municipal water system improvements, storm water, education or research projects that are specific to and can benefit from restoration of Butte area natural resources, or recreation projects that will provide or enhance public hunting, fishing, wildlife viewing, or hiking opportunities.

Small project proposals will be solicited and funded on an annual basis. Project solicitation will occur in the fall and funding decisions will be made in the spring of each year to allow for project implementation during the construction season. Beginning in the fall of 2014, the Butte Natural Resource Damage Restoration Council (BNRC), with assistance from the NRDP, will host an outreach workshop and make a call for small project proposals from the public. The NRDP, in consultation with the BNRC, will first screen each proposal to assure that it meets the legal threshold of restoring or replacing the injured natural resources of the Butte Area One site, namely groundwater and the aquatic resources of Butte Area One, and assure that it does not unduly conflict, duplicate, or overlap with other restoration and remediation projects. The BNRC and NRDP will then evaluate the eligible funding proposals using the evaluation criteria specified in the *March 2012 Butte Area One Final Restoration Process Planning*

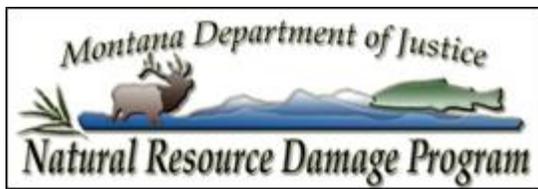
Document. Following consideration of input from the public and the NRDP, the BNRC will decide on its funding recommendations for small projects.

The BNRC's funding recommendations, as well as input from the public and NRDP on those recommendations, will be the subject of consideration by the Trustee Restoration Council. The Governor will make the final funding decision. Opportunities for public comment on the funding of small projects will be provided at BNRC and Trustee Restoration Council meetings. The public notice for each of these meetings will identify the small projects to be considered at these meetings and will be issued at least 10 days in advance of each meeting.

The consideration of small projects for funding may continue on an annual basis through 2016, by which time all of the money in this account should be spent or allocated to specific projects. A match of funds would be strongly encouraged for this small project funding process.

3.2.7 Small/Miscellaneous Projects (p. 32) – old language

The BNRC Restoration Recommendation would allocate \$1 million toward implementing future small/miscellaneous projects. The maximum amount of funding for any small project would be \$100,000. Beginning in the spring of 2013, the BNRC would make a call for project ideas from the public and ideas submitted would be evaluated by the BNRC and NRDP staff. Consideration of such projects may continue through 2016 by which time all of the money in this account should be spent or allocated to specific projects. A match of funds would be strongly encouraged under this alternative. At this point, none of the public restoration project ideas are specifically earmarked to receive funding through the small/miscellaneous project reserve.



BUTTE AREA ONE RESTORATION SMALL PROJECT SUBMITTAL FORM (DRAFT FOR 4/24/14 BNRC MEETING)

The Butte Natural Resource Damage Restoration Council (BNRC) is soliciting proposals for small projects that would improve Butte-area natural resources or related natural resource-based recreational services. The solicitation is being conducted pursuant to the *December 2012 Butte Area One Final Restoration Plan*, and an amendment to that Plan approved by the Governor on January 3, 2013 that is specific to the funding process for small projects. Copies of the Plan and amendment are available at: <https://doj.mt.gov/lands/lawsuit-history-and-settlements/>.

A small project would be eligible for up to \$100,000 in Butte Area One restoration funds. Matching funds from other sources are strongly encouraged. Total project costs can be greater than \$100,000 if a sponsor contributes matching funds to cover costs in excess of the ceiling limit. It is not appropriate to divide a large project into two or more small projects valued less than \$100,000. Restoration funds are paid out on a **reimbursement** basis upon documentation and proper invoicing for work completed.

Types of projects that will be considered include: mine waste removal, mine waste area improvements, revegetation, stream restoration, municipal water system improvements, storm water, education or research projects that are specific to and can benefit from restoration of Butte area natural resources, or recreation projects that will provide or enhance public hunting, fishing, wildlife viewing, or hiking opportunities.

Individuals/entities submitting proposals should provide a scope of work, schedule, and budget for the project, covering all the information outlined below. Proposals must be received by the Butte Natural Resource Damage Program office (address below) by **XXXX**, 2014.

A. Project Summary and Map

Provide a brief summary of the proposed project and a map indicating its location.

Note: While a project does not have to be within the boundaries of the Butte Area One site (see map at website listed above) to be eligible for consideration, it must provide benefits to Butte area natural resources.

B. Project Goals and Objectives

Indicate the goals of this project or the problems you intend to solve through implementation of this project. Specify the project objectives you plan to accomplish in order to achieve the goals. As an example, below are goals/objectives for the Butte Tree project that was approved via the *2012 Final BAO Restoration Plan*:

The primary goal of the Butte Tree project is to restore the vast landscape on the Butte Hill and re-establish native species diversity in open-space areas, with a primary emphasis on erosion resistance and reducing sediment loading to Silver Bow Creek by planting hundreds of mature

trees and shrubs that will restore small wildlife habitat and re-establish a diverse, self-sustaining vegetative cover on the reclaimed areas. The project will be implemented over a multi-year period, with the following objectives pursued on an annual basis:

1. Identify up to 10 locations for tree and shrub plantings, with an emphasis on taking advantage of natural drainage and soil conditions that promote growth;
2. Install and maintain all plantings; and
3. Promote stewardship through public education about this revegetation project and the importance of long-term protection.

C. Project Benefits

Describe the benefits your project will have to Butte area natural resources and/or the public's use and enjoyment of these resources.

D. Project Implementation

Describe in chronological order the individual tasks or activities necessary to accomplish the work under each objective. Identify the project phases, staff, contracted services, and needed regulatory permits or approval. Note: Individuals or entities proposing a project would not necessarily be the ones to implement the project. The State, Butte-Silver Bow, or some other entity may implement an approved small project. The BNRC/NRDP may propose modifications to the proposed project implementation in order to achieve greater cost-effectiveness.

E. Project Schedule

Provide a time schedule for the project tasks and deliverables. The format of the schedule may be either a list of activities, table, or flow chart.

F. Monitoring Activities

Indicate the monitoring activities related to measuring project effectiveness.

G. Project Budget

Provide the project cost estimate and a detailed budget summary table. Cost estimates should include estimated personnel rates, estimated hours per task, and estimated cost of materials and other direct costs, such as contracted services (e.g., consultant and construction services, laboratory testing), supplies and materials, communications, and travel. For contracted services, list each specific service to be performed and the wage rate associated with it. Construction cost estimates should include a contingency in the 10% range to cover unexpected expenses. Identify other funding sources, funding status (committed or uncommitted), and match contribution. Matching funds are strongly encouraged, but not required.

Need help? The NRDP can provide assistance to those interested in submitting a project proposal. Contact Pat Cunneen of the Butte NRDP office at 533-6882 or pcunneen@mt.gov for more information.