



GEUM ENVIRONMENTAL CONSULTING,
INC.

307 State Street
P.O. Box 1956
Hamilton, MT 59840
Phone: (406) 363-2353, Fax (406) 363-3015
<http://www.geumconsulting.com>

Kootenai River Network
Attn: Carolyn Stamy
P.O. Box 491
Libby, MT 59923

Dear Carolyn:

On August 4 and 5, 2008, we conducted a site visit of Grave Creek project Phases 1 and 2. The purpose of this site visit was to finalize quantities and locations for riparian revegetation treatments included in *Grave Creek Riparian Revegetation and Monitoring Plan (2008)* and currently contracted for implementation under Task Order #0804. To evaluate current site conditions (and to record any changes since December, 2007), we collected monitoring data at sites evaluated in December 2007, coordinated with John Muhlfeld in the field to quantify necessary structure repairs, bioengineering locations, and associated materials and labor needs..

The purpose of this letter is to provide you with an updated treatment list, treatment quantities and treatment locations proposed to be implemented under Task Order #0804.

The treatments remain relatively unchanged, but the quantities and locations were adjusted to some extent. Changes are described below, and quantified in the attached table. The original treatment quantities are also included for comparison. The primary adjustments to the proposed treatments in the revegetation plan include:

- Construction of approximately 6,000 feet of 8-strand electric slant fence to reduce whitetail deer impacts to newly establishing woody vegetation. This fencing includes the Demonstration Phase and approximately half of Phase 1. The location of the fencing was determined based on numerous

conversations with the landowner, fencing contractor and other project partners. The fencing location was ultimately based on the following factors: distance from electric power source, access for vehicle and recreational users, channel features to tie cross fencing into and an assumed reasonable level of effort given the existing project budget. This fence will result in the exclusion of approximately 2,800 feet of channel and 27 acres of riparian vegetation from deer browse pressure.

- Reduction of floodplain grading area treatments (*Floodplain Treatment from the 2008 Plan*). During our site visit we observed cottonwood recruitment on a number of floodplain surfaces. Floodplain grading will require access to these areas by heavy equipment and excavation of portions of these areas. As originally proposed, this treatment would have resulted in disturbance to a number of these surfaces and we felt that giving the naturally recruited vegetation a chance to establish on its own was more important.
- Need for repairs to a second log vane structure.
- Adjustment of bioengineering structure lengths and locations. During our August field visit, we finalized these locations and lengths on the ground, and refined the techniques for each location.
- Elimination of the one proposed riparian planting area based on the amount of natural regeneration that occurred this year on that surface and the fact that the site will now be located within fenced area.
- Extension of the *Vegetated Set Back Bank* treatment. Based on further observations of this site, we decided this treatment would be beneficial to the long-term stability of this reach of Grave Creek. During our site visit, we selected appropriate tie-in points, which resulted in a slightly longer trench than originally proposed.
- The number of weed infestations has increased significantly along the project reach. Of particular concern are the knapweed infestations on some of the recently constructed floodplain surfaces. As shrub vegetation continues to establish and grow, these infestations will naturally be suppressed to some extent. In the mean time the extent of knapweed colonization may be suppressing natural colonization of desired shrubs and trees. We did not want to apply herbicide given the extent of natural cottonwood colonization that occurred this year on all of these surfaces. For this reason, we decided to include hand pulling of a few key areas in the revised treatments. Herbicide application should be considered for other areas, but is not included in our proposed treatment revisions.

Included is a map showing the revised locations of treatments based on the site visit, a table listing the proposed quantity of each treatment and a table listing the quantity of each treatment that was used to develop the cost estimate and

scope of work based on the revegetation plan. The revegetation plan includes a map showing the locations of the original treatments.

We re-evaluated costs based on these changes and it appears that we can still complete the project for the contracted amount. The only variable is the final fencing costs. We were able to receive exact quotes for materials, but due to a number of unknowns we were not able to exactly estimate the costs associated with installation. However, we have been monitoring the progress of installation closely and at this time it appears this expanded fencing effort will fit within the overall project budget. This is because higher fencing costs are offset by some of the slight reductions in some treatment quantities described above and listed in the attached table.

Also, as part of the final as-built report for the project, we will include a summary of the monitoring data we collected in August, 2008 including a comparison with December, 2007 data.

Please let me know if you have any questions.

Thank you,

Amy Sacry
Biologist
Geum Environmental Consulting, Inc.
307 State Street
Hamilton, MT 59840
(406) 363-2353
asacry@geumconsulting.com

Grave Creek Riparian Revegetation Treatment Quantities 2008			
REVISED TREATMENTS BASED ON FINAL DESIGN			
Treatment and Location	Quantity		
RIPARIAN FENCING	Length (ft)		
All	6,000		
RIPARIAN PLANTING AREA MAINTENANCE			
Site 3	1		
Site 5	1		
Site 7	1		
Site 10	1		
Site 11	1		
FLOODPLAIN TREATMENT	# logs	Grading area (yd³)	
Site 8	5	150	
POINT BAR REVEGETATION	Seeding (lb)	Cottonwood Poles	5-10 gallon
Site 4	20	30	15
Site 9	20	20	25
Site 10	40	50	15
Site 12	see 10	see 10	20
	80	100	75
BIOENGINEERING	Length (ft)		
Soil lifts	length (ft)		
Site 3	120		
Site 5	120		
Site 7	100		
Site 10	40		
	380		
Coir logs	length (ft)		
Site 1	90		
Site 5	40		
Site 7	110		
Site 12	60		
	300		
Buried coir/willow fascine	length (ft)		
Site 13	90		
Site 14	120		
	210		
WEED CONTROL	area (ac)		
Site 7	1		
Site 10	2		
Site 12	2		
	5		
SET BACK TREATMENT	length (ft)		
Site 2	300		
OTHER			
Site 7 vane repairs (1)	2		
Harden return flow Site 1	1		
Site 10 ELJ	1		

Grave Creek Riparian Revegetation Treatment Quantities 2008			
ORIGINAL TREATMENT QUANTITIES BASED ON REVEGETATION PLAN			
Treatment and Location	Quantity		
RIPARIAN FENCING	length (ft)	Note: Fencing costs not included in cost estimate	
All	TBD		
RIPARIAN PLANTING AREA MAINTENANCE			
Site 3	1		
Site 5	1		
Site 7	1		
Site 10	1		
Site 11	1		
FLOODPLAIN TREATMENT	# logs	Grading area (yd³)	
Site 2	5	100	
Site 4	0	500	
Site 8	5	1000	
Site 10	5	500	
Site 12	5	250	
	20	2350	
POINT BAR REVEGETATION	Seeding	Cottonwood Poles	16 gallon grow bags
Site 4	0.25	50	25
Site 9	0.25	50	25
Site 10	0.25	50	25
Site 12	0.25	50	25
	1	200	100
BIOENGINEERING	Length (ft)		
Soil lifts			
Site 1	50		
Site 3	100		
Site 5	50		
Site 7	100		
Site 10	50		
	350		
Coir logs			
Site 5	50		
Site 12	50		
	100		
Buried coir/willow fascine			
Site 13	100		
Site 14	100		
	200		
OUTER MEANDER PLANTING	# plants		
Site 1	25		
SET BACK TREATMENT	length (ft)		
Site 2	200		
OTHER			
Site 1 ELJ	1		
Site 7 vane repairs	1		
Site 7 ELJ	1		
Harden return flow Site 1	1		

Grave Creek Riparian Revegetation Project: 2008-2009 Treatments

Legend

- Restored Channel Alignment
- ↔ Project Phase Breaks
- ▬ Riparian Revegetation Project Boundary
- * Woody Debris Jam
- Point Bar
- Bioengineering
 - Buried Coir/Willow Fascine
 - Coir Log Fascine
 - Soil Lift
- Set Back Treatment
 - Vegetated Set Back Bank
- Point Bar Revegetation
 - Swale Seeding, Cottonwood Poles, Large Containerized Plants
- Floodplain Treatment
 - ▨ Grading
- Maintenance
 - ▭ Existing Planting Area Maintenance

