



June 28, 2016

Ms. Rita Miller
City of Santa Rosa
Utilities Department
4300 Llano Road
Santa Rosa, California 95407

Re: 2015-2016 Annual Monitoring and Reporting for Pepperwood Preserve Sediment Reduction Project SRNO-2H

Dear Ms. Miller,

The following constitutes the annual monitoring and reporting for Pepperwood Preserve per the Sonoma Resource Conservation District (SRCD) contract with the City of Santa Rosa SRNO Task 2H. Crediting options and associated credits for the Pepperwood Preserve Sediment Reduction Project were approved as part of the City of Santa Rosa's Nutrient Offset Program by the Regional Water Quality Control Board (RWQCB), North Coast Region. This report outlines annual monitoring of the installed BMPs.

BMP Inspection

On May 19, 2016, RCD staff inspected all installed BMPs at Pepperwood Preserve and made the following observations of note:

- Site 7.2:
 - 7.2a: A 1-foot wide x 1-foot deep headcut has developed where the inboard ditch meets the rock slope protection. Recommendation to rock this headcut to prevent further migration of the headcut up the inboard ditch (See Photo Plate page 10).
 - 7.2b: A 2-foot wide by 10 inch deep headcut has developed at the top right corner of the rockslope protection. Recommendation to monitor this area for any further movement (See Photo Plate page 10).
 - 7.2c: Two sets of two 1-foot wide by 1.5-foot deep holes have formed near the top left end of the rock slope. A small 5-inch wide by 4-inch deep rill has formed near the left side of the landslide and is draining to one of the four holes at the top of the rockslope protection. A section of this rill has been rocked near one of the old straw wattles by Pepperwood staff (See Photo Plates page 11), but the rilling continues upslope of the rock. This area is sparsely vegetated.

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Recommendation to exclude cattle activity from this site to help establish vegetation.

- Bechtel House Road 23+90 at RD1: A low spot at the uphill side of the RD has caused the development of a shallow depression. Establishing a keyway such that road drainage can exit the outboard side of the road is recommended (See Photo Plates page 11).
- Site 6: Repair work was completed in September 2015 at this site to replace rock armor on the right bank of the outboard fillslope that had been knocked out of place and grade the hillslope to a 2:1 slope angle. During BMP inspection in May 2016 the rock armor appeared to be stable and holding up (See Photo Plates page 6).
- Site 5: A 2.5-foot wide by 2-foot deep by 4-foot long scour pool has developed below the pipe outlet (See Photo Plates page 5). This site has actively eroded since monitoring in May 2015. The volume of eroded sediment is estimated at 20 cubic feet or 0.74 cubic yards. This scour pool may continue to enlarge in future winter storms and may eventually undermine the rock armor at the outboard fill slope, destabilizing the crossing. Armoring the culvert outfall with rock (1 to 2ft in diameter) is recommended to prevent further erosion.
- Bechtel House Road 44+50: A coyote bush has grown into the outlet area, which may contribute to culvert plugging. Vegetation trimming and outlet cleaning is recommended to reduce plugging.
- Site 8.1: A 3' deep by 2.5' wide headcut is still present at the bottom of this site. In addition, two 1ft wide by 2ft deep headcuts have developed between the main headcut and Grade Control Structure 1.3 (See Photo Plates page 7). Armoring with 0.5-1.0 ft keyed-in rock, under-laid with gravel or landscape fabric at each of the headcuts is recommended to prevent further erosion and migration of the headcut.
- Goodman Road 04+05 near RD11: Culvert outlet is more than 50 percent plugged. Culvert outlet cleaning is recommended to prevent plugging.

Please see monitoring field sheets included in Appendix A and associated Photo Plates included in Appendix B.

Credit Verification

Based on annual site monitoring of all installed BMPs, the SRCD verifies the mass of P and N controlled to be as follows:

- Mass of P controlled and credits eligible during the previous 12 months (July 1, 2015- June 30, 2016) = 542.85 lbs.
- Mass of N controlled and credits eligible during the previous 12 months (July 1, 2015- June 30, 2016) = 11,880.4 lbs.

Please refer to Table 1 below for a breakdown of crediting options and annual credits verified. The estimated sediment reduction for BMP #1 shown in Table 1 (814.26 cy) reflects a reduction of 0.74 cy from 815 cy due to the scour pool that developed at Site 5 as described above. Annual credits have been reduced by scaling down the credits by a factor of 0.9991 (814.26/815). Annual Credits for TP and TN were scaled down from the previous years credits to 168.15 (168.3 x 0.9991) and 1891.7 (1893.4 x 0.9991) lbs/yr, respectively.

Table 1: Earned and Verified Credits

Crediting Option	As Built ¹			
	# of sites or length	Estimated Sediment Reduction (Cubic yards)	Annual Credits (pounds per year)	
			lbs TP/yr	Lbs TN/yr
BMP #1: Repair of eroding stream crossings	23 sites	814.26 cy	168.15	1891.7
BMP #2: Repair of Other Sites (future potential erosion sites)	13 sites	150cy	37.2	418.3
BMP #3: Repair/stabilization of eroding road surfaces/ditches	2.28 miles	2,230cy	337.5	9,570.4
Totals	-	3,194.3 cy	542.85	11,880.4

¹ Information taken from Pacific Watershed Associates Dec 2013 Report

Conclusions

The Pepperwood Preserve Sediment Reduction Project installed BMPs were found to be functional and operating with the exception of Site 5 where approximately 0.74 cubic yards of active erosion was observed over the last year. This was reflected in a reduction of annual credits for this year.

Several areas for maintenance were identified and information will be forwarded to Pepperwood Preserve regarding these maintenance needs.

If you have any questions, please contact me at 707-569-1448 ext. 101 or at kwester@sonomarc.org.

Thank you,

Kari Wester
Project Manager
Sonoma Resource Conservation District

Appendix A: BMP Monitoring Field Sheets

Appendix B: Photo Plates

References:

Pacific Watershed Associates, Inc. *Pepperwood Preserve Sediment Reduction Implementation Project, Sonoma County, California*. December 2013.

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Pepperwood Preserve Sediment Reduction Implementation Project
Appendix A- BMP Monitoring Field Sheets

Date: 5/20/16 RCD Staff: Kevin Cullinen (SRCD)
Observation date: 5/19/16

By signing this form, I attest that this information is true and complete to the best of my abilities.

Staff Signature: Kevin Cull

Bechtel House Road (upgrade):

Abbreviations: CCD = Clean and cute ditch; CD = Critical dip; EOS = End of survey/road log; GCS = Grade control structure; DRC = Ditch relief culvert; OSR-FD = Outslope road and fill the ditch; OSR-KD = Outslope road and keep the ditch; RD = Rolling dip; RSP = Rock slope protection; SOS = Start of survey/road log. Sediment source site numbers and original problem description in bold.

<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies/maintenance needs)</i>	<i>Is BMP operating properly?</i>	<i>Photo taken? (Check box)</i>
Road description and general road log notes: Bechtel House road is a year-round use, rock-surfaced road driven by a variety of individuals and groups visiting the Preserve. All disturbed road surfaces were re-rocked with a 10' wide road width using rock estimates associated with each treatment. Sediment source site numbers and original problem description in bold.						
00+00		SOS	Start road log near northern property boundary at intersection with sign to Three Tree Hill and Wiemar Falls nearly 1.9 mi from Franz Valley Road.		N/A	
05+30			Road surface drainage divide		N/A	
06+45		RD 46	1. Installed a type 3 rolling dip. 2. Re-rocked the road surface.	RD functioning well with no erosion	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/>
08+30		RD 46.1	1. Installed a type 1 rolling dip. 2. Re-rocked the road surface. 3. No treatments at existing 12" ditch relief culvert.	RD functioning well. A small rill has developed just downslope of the RD, due to hillside runoff, but exits the road immediately and is a non-issue. 12" DRC in good condition.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
09+50		RD 47	1. Installed a type 3 rolling dip. 2. Re-rocked the road surface.	RD functioning well. A small rill has developed on the uphill side of the RD, but no serious erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	

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<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies/maintenance needs)</i>	<i>Is BMP operating properly?</i>	<i>Photo taken? (Check box)</i>
11+50		RD 48	1. Installed a type 3 rolling dip. 2. Re-rocked the road surface.	RD functioning well with no erosion	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
13+25		RD 48.1	1. Installed a type 1 rolling dip. 2. Re-rocked the road surface. 3. No treatments at existing 18" ditch relief culvert.	RD functioning well with no erosion, 18" DRC still functioning well.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
15+35		RD 49	1. Installed a type 1 rolling dip. 2. Re-rocked the road surface. 3. No treatments at existing 18" ditch relief culvert.	RD functioning well with no erosion, 18" DRC in good condition. Some aggraded sediment was observed at inlet.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	

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<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies/maintenance needs)</i>	<i>Is BMP operating properly?</i>	<i>Photo taken? (Check box)</i>
16+20	7.2	Start RSP 1	<p>Site 7.2: Large creeping hillslope landslide.</p> <ol style="list-style-type: none"> Started rock slope protection for 70' along cutbank where active slumping was occupying ditch and roadway. Excavated slumping hillslope and a 70' wide x 3' deep x 10' tall trench and placed 50 yd³ of 0.5'-3' riprap. Spoils placed below road and along road surface. Re-rocked the road surface. 	<p>The mobilized sediment lobe and the 1-2 foot head scarp at the top of the slump are more or less in the same spot that they were since March 2014. Some finer sediments have reached the rock armor at the bottom of the slope, but are not yet affecting the drainage ditch. The majority of the mobilized material is still 20 feet from the bottom of the slope. A 1-foot wide x 1-foot deep headcut has developed where the inboard ditch meets the rock slope protection.</p> <p>Recommendation to add rock to prevent further migration of the headcut up the inboard ditch (7.2a).</p> <p>A 2-foot wide by 10 inch deep headcut has developed at the top right corner of the rockslope protection.</p> <p>Recommend monitoring site for any further movement (7.2b). Similarly, two sets of two 1-foot wide by 1.5-foot deep holes have formed near the top left end of the rock slope. A small 5-inch wide by 4-inch deep rill has formed near the left side of the landslide and is draining to one of the four holes at the top of the rockslope protection. A section of this rill has been rocked near one of the old straw wattles by Pepperwood staff, but the rilling continues upslope of the rock. This is the area that is least vegetated. Vegetation is more established at the landslide this year than in 2015, but there are still some sparsely vegetated areas. Recommend excluding cattle activity from this site to help establish vegetation (7.2c).</p>	<p><input checked="" type="checkbox"/> Y <input type="checkbox"/> N</p>	<p><input checked="" type="checkbox"/></p> <p>Refer to pages 9-11 in Photo Plates.</p>

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<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies/maintenance needs)</i>	<i>Is BMP operating properly?</i>	<i>Photo taken? (Check box)</i>
16+90		End RSP 1	Ended rock slope protection treatment.	The rock armor is still functioning, but should be monitored for future slumping	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
17+80		RD 50	1. Installed a type 1 rolling dip. 2. Re-rocked the road surface. 3. No treatments at existing 18" ditch relief culvert.	RD functioning well with no erosion, 18" DRC still functioning well	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
19+80	8	RD 51	Site 8: Existing 18" ditch relief culvert at spring. 1. No treatment at site. 2. Installed a type 1 rolling dip. 3. Re-rocked the road surface.	RD functioning well with no erosion, 18" DRC still functioning well	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
20+25			Corral / McCann Homestead		N/A	
21+20	7.1	GCS 1	Site 7.1: Existing 12" ditch relief culvert draining springs with 5' active headcut ~15' below culvert. 1. Installed a grade control structure at headcut using 20 yd ³ of 0.5'-1.5' mixed riprap with u-shape. 2. Spoiled locally on hillslope and road.	Grade control rock armor is still in place and functioning well. No erosion observed and 12" DRC still in good condition.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/>
21+70		RD 52	1. Installed a type 1 rolling dip. 2. Re-rocked the road surface.	RD functioning well with no erosion	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
23+80			Added 3 yd ³ of 1'-2' riprap to inlet area of existing 18" ditch relief culvert.	Rock armor intact and functioning well	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	

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<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies/maintenance needs)</i>	<i>Is BMP operating properly?</i>	<i>Photo taken? (Check box)</i>
23+90		RD 1	1. Installed a type 1 rolling dip. 2. Re-rocked the road surface.	RD functioning ok. There is a low spot at the uphill side of the RD which has caused the development of a shallow depression. Recommendation to establish a keyway to make sure the road drainage can exit the outboard side of the road.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/> Refer to page 11 in Photo Plates.
25+30	7	CD 1	Site 7: Stream crossing with 12" rusted and plugged culvert. 1. Replaced with 24" x 60' long culvert at base of fill in natural channel alignment. 2. Transitioned existing stream channel above road into new lowered inlet and added 5 yd ³ of 1'-2' rip rap at new grade change and inboard fillslope. 3. Installed 20 yd ³ of 1'-3' riprap on outboard fillslope. 4. Installed a critical dip on right hingeline to eliminate diversion potential down road. 5. Re-rocked the road surface.	24" Culvert in good condition and functioning well. Rock armor intact and functioning. Critical dip is stable.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/>
26+55			Intersection on right to Turtle Pond and start of road log for Goodman Road.		N/A	

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<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies/maintenance needs)</i>	<i>Is BMP operating properly?</i>	<i>Photo taken? (Check box)</i>
		Start OSR-KD 1	1. Started road outsloping and keep ditch for 880'. 2. Re-rocked all disturbed road surfaces through outslope for average 10' road width x 0.3' depth x 880' long with 100 yd ³ of 1.5" minus road rock.	Ditch looks stable, road outslope functioning well with no rilling observed.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
27+50		RD 2	1. Installed a type 1 rolling dip. 2. Re-rocked the road surface.	RD functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
29+05	6.2		Site 6.2: Existing 30" ditch relief culvert draining hillslope. 1. No treatment at site.	Site 6 itself is still in good condition and the outlet is vegetated. See notes for Site 8.1 regarding headcuts above Site 6.	NA	
29+80	6.1	DRC 1/ RD 3	Site 6.1: 10" existing ditch relief culvert that is high and dry and carries no flow. 1. Replaced with a 24" x 40' long culvert. 2. Installed 2 yd ³ of 0.5'-1.5' of riprap to inboard fillslope. 3. Installed 3 yd ³ of 0.5'-1.5' of riprap to outboard fillslope. 4. Plugged ditch on downhill side. 5. Installed a type 1 rolling dip. 6. Re-rocked the road surface.	Culvert in good condition and functioning well. Past cattle activity has caused muddy area at outlet, but is now revegetating. Channel is also vegetated well immediately outlet area.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
30+65		RD 3.1	1. Installed a type 1 rolling dip. 2. Re-rocked the road surface.	RD functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	

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<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies/maintenance needs)</i>	<i>Is BMP operating properly?</i>	<i>Photo taken? (Check box)</i>
32+15		RD 4/ Start CCD 1	1. Installed a type 2 rolling dip. 2. Started clean and cut inboard ditch for 320'. 3. Re-rocked the road surface.	RD functioning well with no erosion, ditch stable.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
33+75	6		Site 6: Stream crossing with 60" culvert and failing fillslopes. 1. Replaced with a new 60" x 40' long culvert. 2. Installed 30 yd ³ of 0.5'-2' riprap to inboard and outboard fillslopes. 3. Directed new ditches into inlet. 4. Re-rocked the road surface.	Repair work completed on 9/26/2015 to replace the rock armor on the right bank of the outboard fillslope which had been knocked out of place during the 2014-2015 winter storms has held up well over the 2015-2016 winter with no signs of erosion. Rock armor on the inboard fillslope also appears stable and holding up well.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/> Refer to Pages 5-6 in Photo Plates.
			Road surface drainage divide.		N/A	
35+35		End OSR- KD 1/ End CCD 1	1. Ended road outsloping. 2. Ended clean and cut ditch. 3. Re-rocked the road surface.	Ditch looks stable, road outslope functioning well with no rilling observed. Ditch is well vegetated now.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	

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<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies/maintenance needs)</i>	<i>Is BMP operating properly?</i>	<i>Photo taken? (Check box)</i>
36+40	5	CD 3	Site 5: Stream crossing with 48" culvert and failing fillslopes. 1. Replaced with a 48" x 40' long culvert. 2. Installed 20 yd ³ of 0.5'-2' riprap to inboard and outboard fillslopes. 3. Connected right inboard ditch to new inlet. 4. Installed a critical dip on left hingeline. 5. Re-rocked the road surface.	The culvert and fillslopes are in good condition and functioning well, but a 2.5-foot wide by 2-foot deep by 4-foot long scour pool has developed below the pipe outlet. This scour pool may keep enlarging in future winter storms and may eventually undermine the rock armor at the outboard fillslope, destabilizing the crossing. Recommendation to rock (1 to 2 foot in diameter) the scour pool to armor the culvert outfall to prevent further erosion.	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	<input checked="" type="checkbox"/> Refer to page 5 in Photo Plates.
37+05	4	Start CCD 2	Site 4: Small stream crossing with 10" culvert. 1. Replaced with an 18" x 40' long culvert. 2. Started clean and cut ditch for 120'. 3. Re-rocked the road surface.	Culvert in good condition and functioning well. Formerly muddy area at outlet is now vegetated.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
38+25		DRC 2/ End CCD 2/ RD 6	1. Installed an 18" x 40' long ditch relief 2. Plugged ditch on downhill side. 3. Ended clean and cut ditch. 4. Installed a type 1 rolling dip. 5. Re-rocked the road surface.	RD functioning well with no erosion	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
40+25		RD 7	1. Installed a type 3 rolling dip. 2. Re-rocked the road surface.	RD functioning well with no erosion	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
42+70			Road surface drainage divide		N/A	

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<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies/maintenance needs)</i>	<i>Is BMP operating properly?</i>	<i>Photo taken? (Check box)</i>
44+50			Clean inlet and interior of existing 12" ditch relief culvert in low spot.	A coyote bush has grown into the outlet area, which may contribute to culvert plugging. Recommendation to trim back coyote bush and clean outlet to reduce plugging.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
45+25	3		Site 3: Stream crossing with 10" culvert. 1. Cleaned culvert inlet.	10" culvert functioning well and outlet is armored. There are minor signs of headcutting upstream of inlet, but the channel is well armored above the small headcut, so no action is needed.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
46+25			Road surface drainage divide.		N/A	
49+40		RD 8	1. Installed a type 1 rolling dip. 2. Re-rocked the road surface.	RD functioning well with no erosion	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
50+10	2	DRC 3/ Start CCD 3	Site 2: 12" ditch relief culvert draining spring and diverted stream. 1. Replaced with a 30" x 40' long culvert. 2. Installed 25 yd ³ of 0.5'-1.5' riprap on inboard fillslope and ditch. 3. Installed 10 yd ³ of 1'-3' riprap on outboard fillslope. 4. Started clean and cut ditch for 110' to better direct flow from diverted stream crossing. 5. Re-rocked the road surface.	Culvert in good conditioning and rock armor intact at IBF and OBF. Ditch looks stable, and is vegetated well.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/>

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<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies/maintenance needs)</i>	<i>Is BMP operating properly?</i>	<i>Photo taken? (Check box)</i>
51+20	1	End CCD 3	Site 1: Diverted stream crossing. 1. Laid back vertical slopes where stream makes tight turn down to ditch. 2. Keyed in 5 yd ³ of 0.5’-2’ riprap to base of bend. 3. Increased channel width and slope down to Site 2. 4. Ended clean and cut ditch.	Rock armor intact and functioning well, no sign of erosion and ditch stable.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/>
51+30			Roller coaster ridge trail on left.		N/A	
51+50			Locked metal gate.		N/A	
53+15		EOS	End road log at road surface drainage divide and intersection to Bechtel House on left.		N/A	

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Goodman Road (upgrade):

Abbreviations: CD = Critical dip; EOS = End of survey/road log; DRC = Ditch relief culvert; GCS = Grade control structure; OSR-FD = Outslope road and fill the ditch; OSR-KD = Outslope road and keep the ditch; RD = Rolling dip; SOS = Start of survey/road log.

<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies/maintenance needs)</i>	<i>Is BMP operating properly?</i>	<i>Photo taken? (Check box)</i>
<p>Road description and general treatment notes: Goodman Road road log extends from Bechtel House Road near corral for over 1.7 mi where it terminates at Rogers Creek. It is rocked and regularly used by the public for the first 0.3 mi from Bechtel House Road to ridge top. From the ridge down the other side the road network is primarily used by the Preserve staff. All disturbed road surfaces that were rocked were re-rocked with a 10' wide road width using rock estimates associated with each treatment in the road log below. Sediment source site numbers and original problem description in bold.</p>						
00+00		SOS	Start road log at intersection with Bechtel House Road with sign to Turtle Pond and Rogers Canyon. No treatments to ditch relief culvert under road at intersection.		N/A	
01+30		RD 9	1. Installed a type 1 rolling dip. 2. Re-rocked the road surface.	RD functioning well with no erosion	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
01+35	8.1	GCS 1.1/ GCS 1.2/ GCS 1.3/ Start OSR-KD 3	<p>Site 8.1: Existing 18" ditch relief culvert with outlet erosion gully.</p> <p>1. Installed a grade control structure (GCS 1.1) at ditch relief culvert outlet using 10 yd³ of 0.5'-1' ripap. 2. Installed a grade control structure (GCS 1.2) 75' long 10' below GCS 1.1 using 30 yd³ of 0.5'-1' ripap. 3. Installed a grade control structure (GCS 1.3) at 2' headcut in inboard ditch 50' up from inlet using 5 yd³ of 0.5'-1' ripap to armor the headcut, protect the inboard fillslope and contain ditch flow. 4. Started road outslipping and keep ditch for 445'. 5. Re-rocked all disturbed road surfaces for average 10' road width x 0.3' depth x 445' long with 50 yd³ of 1.5" minus road rock.</p>	All grade control structures look intact and the culvert is in good condition, but the headcut (3-foot deep x 2.5-foot wide) is still present (as observed in May 2015 as well) at the bottom of this site, 20 feet upstream of Site 6.2. In addition, there are now two 1-foot wide by 2-foot deep head cuts in between the main headcut and GCS 1.3. There is also a small headcut above GCS 1.3, which will likely stop when it hits GCS 1.2. Recommendation to key in 0.5-1-foot rock under-laid with gravel or landscape fabric at each of the headcuts to prevent further erosion and migration of the headcut.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/> Refer to page 7 in Photo Plates.

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Appendix A- BMP Monitoring Field Sheets

Goodman Road (upgrade):

Abbreviations: CD = Critical dip; EOS = End of survey/road log; DRC = Ditch relief culvert; GCS = Grade control structure; OSR-FD = Outslope road and fill the ditch; OSR-KD = Outslope road and keep the ditch; RD = Rolling dip; SOS = Start of survey/road log.

<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies/maintenance needs)</i>	<i>Is BMP operating properly?</i>	<i>Photo taken? (Check box)</i>
02+80		RD 10	1. Installed a type 1 rolling dip. 2. Re-rocked the road surface.	RD functioning well with no erosion	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
04+05		RD 11	1. Installed a type 1 rolling dip at existing 18" ditch relief culvert. 2. Re-rocked the road surface.	RD functioning well, but there is a small rill on the uphill side of the RD. No treat. Culvert outlet is more than 50 % plugged. Recommendation to clean out culvert outlet to prevent plugging.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
05+80		RD 12/ End OSR-KD 3 /Start OSR-FD 1	1. Installed a type 1 rolling dip. 2. Ended road outsloping with a ditch. 3. Started road outsloping with no ditch for 670'. 4. Re-rock all disturbed road surfaces through outslope for average 10' road width x 0.3' depth x 670' long with 75 yd ³ of 1.5" minus road rock.	Road outslope functioning well with no rilling observed, RD functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
07+80		RD 13	1. Installed a type 1 rolling dip. 2. Re-rocked the road surface.	RD functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
09+95		Enhanced outslope bend	1. Installed an enhanced outslope around bend in road 2. Re-rocked the road surface.	Enhanced outslope around bend is functioning well, no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
12+50		RD 15/ End OSR-FD 1	1. Installed a type 2 rolling dip. 2. Ended road outsloping and fill ditch at RD 15. 3. Re-rocked the road surface.	RD functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
13+05		RD 16	1. Installed a type 2 rolling dip. 2. Re-rocked the road surface.	RD functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	

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Goodman Road (upgrade):

Abbreviations: CD = Critical dip; EOS = End of survey/road log; DRC = Ditch relief culvert; GCS = Grade control structure; OSR-FD = Outslope road and fill the ditch; OSR-KD = Outslope road and keep the ditch; RD = Rolling dip; SOS = Start of survey/road log.

<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies/maintenance needs)</i>	<i>Is BMP operating properly?</i>	<i>Photo taken? (Check box)</i>
15+90			Road surface drainage divide with “road closed” sign on post in middle of road. No project specific treatments from this location to Site 9 located 2,500’ (0.5 mi) below.		N/A	
21+70			Green unlocked gate-livestock present, keep closed.		N/A	
36+50			Intersection with Goodman Spur on the right.		N/A	
39+70	9		Site 9: Ditch relief culvert with very large outlet gully. 1. No treatments at site.	N/A	N/A	
40+20	10	Start OSR-FD 2	Site 10: Diverted Class III stream. 1. Installed an armored fill crossing using 20 yd ³ of 0.5’-1.5’ riprap. 2. Added 3 yd ³ of 0.5’-1.5’ riprap above inboard road to stabilize grade change. 3. Started road outslipping and fill ditch for 2,480’ to Site 16.	Rock armor looks stable and functioning well.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
42+95	11	CD 4/ GCS 2	Site 11: Stream crossing with 24” culvert and active 8’ tall headcut below culvert. 1. Replaced with a 24” x 60’ long culvert. 2. Installed a critical dip on right hingeline. 3. Defined inboard ditch on left for 20’ and directed flow into new inlet. 4. Installed a total of 30 yd ³ of 0.5’-2’ riprap to inboard and outboard fillslopes. 5. Installed a grade control structure to headcut in channel below outlet 30 yd ³ of 0.5’-2’ riprap.	Culvert in good condition. Rock armor intact and stable, no erosion observed, critical dip in good condition and well vegetated.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/>

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Goodman Road (upgrade):

Abbreviations: CD = Critical dip; EOS = End of survey/road log; DRC = Ditch relief culvert; GCS = Grade control structure; OSR-FD = Outslope road and fill the ditch; OSR-KD = Outslope road and keep the ditch; RD = Rolling dip; SOS = Start of survey/road log.

<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies/maintenance needs)</i>	<i>Is BMP operating properly?</i>	<i>Photo taken? (Check box)</i>
43+80			Steel unlocked gate-livestock present, keep closed.		N/A	
44+80			Road surface drainage divide.		N/A	
46+70		RD 18	1. Installed a type 1 rolling dip.	RD functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
50+45		RD 20	1. Installed a type 1 rolling dip.	RD functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
51+80	12	RD 20.1	Site 12: Small gully or possible overflow from Turtle pond. 1. Created a wide and broad dip to drain concentrated flow and create better drivability.	Dip functioning well with no erosion observed.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
52+95		RD 21	1. Installed a type 2 rolling dip.	RD functioning well with no erosion	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
54+55		RD 22	1. Installed a type 1 rolling dip.	RD functioning well with no erosion. This site looks now well vegetated and stable.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/>
55+35			Intersection with Skovie Road on left.		N/A	
56+10	13		Site 13: Existing 12" ditch relief culvert. 1. No treatment at site.		N/A	
57+00		RD 24	1. Installed a type 1 rolling dip. 2. Added 10 yd ³ of 0.5'-2' riprap to outboard road.	RD functioning well with no erosion	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
58+35	14	RD 25	Site 14: Multiple road surface discharge points with gully development. 1. Installed a type 1 rolling dip. 2. Added 3 yd ³ of 0.5' riprap to outboard road.	RD functioning well with no erosion, rock armor intact	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
59+95			Road surface drainage divide.		N/A	

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Goodman Road (upgrade):

Abbreviations: CD = Critical dip; EOS = End of survey/road log; DRC = Ditch relief culvert; GCS = Grade control structure; OSR-FD = Outslope road and fill the ditch; OSR-KD = Outslope road and keep the ditch; RD = Rolling dip; SOS = Start of survey/road log.						
<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies/maintenance needs)</i>	<i>Is BMP operating properly?</i>	<i>Photo taken? (Check box)</i>
60+75		RD 26	1. Installed a type 2 rolling dip.	RD functioning well. Site has been vegetated somewhat with grasses and looks stable.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
61+70	15	RD 27	Site 15: Road surface discharge point into Class III stream 20' above. 1. Installed a type 1 rolling dip.	RD functioning well, The small ruts from last year have been vegetated with grasses and look stable.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
64+00		RD 28	1. Installed a type 1 rolling dip.	RD functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
65+00	16	CD 6/ End OSR-FD 2	Site 16: Ford crossing on grassy road. 1. Enhanced dip to eliminate diversion potential down road and make better drivability. 2. Ended road outsloping.	Ford in good condition and well vegetated. Dip functioning well.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
68+05			Road surface drainage divide		N/A	
69+20		RD 29	1. Installed a type 1 rolling dip.	RD functioning well with no erosion	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
70+45		RD 30	1. Installed a type 1 rolling dip.	RD functioning well with no erosion, lots of vegetation.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
71+25	18	CD 7	Site 18: Very small ford crossing with waterbar. 1. Enhanced dip to eliminate diversion potential down road and make better drivability.	Dip functioning well and draining to landing.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
83+05		RD 31	1. Installed a type 3 rolling dip.	RD functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
83+60	19		Site 19: Fill crossing. 1. Installed an armored fill crossing using 15 yd ³ of 0.5'-1.5' riprap.	Rock armor intact and crossing looks stable with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/>
85+00		RD 32	1. Installed a type 1 rolling dip.	RD functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	

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Goodman Road (upgrade):

Abbreviations: CD = Critical dip; EOS = End of survey/road log; DRC = Ditch relief culvert; GCS = Grade control structure; OSR-FD = Outslope road and fill the ditch; OSR-KD = Outslope road and keep the ditch; RD = Rolling dip; SOS = Start of survey/road log.

<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies/maintenance needs)</i>	<i>Is BMP operating properly?</i>	<i>Photo taken? (Check box)</i>
85+90		RD 33	1. Installed a type 1 rolling dip.	RD functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
86+90		RD 34	1. Installed a type 1 rolling dip.	RD functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
87+40	20		Site 20: Fill crossing with outboard fillslope gully and debris tormented channel. 1. Installed an armored fill crossing using 20 yd ³ of 0.5'-1.5' riprap.	Armored fill in good condition, no movement or erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/>
88+20		RD 34.1	1. Installed a type 3 rolling dip.	RD functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
89+80	21		Site 21: Oblique fill crossing with small gully across road. 1. Installed an armored fill crossing using 10 yd ³ of 0.5'-1.5' riprap.	Armored fill in good condition, rock armor intact and no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
91+85			Road surface drainage divide.		N/A	
92+30		RD 34.2	1. Installed a type 1 rolling dip.	RD fully vegetated and functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
93+15		RD 34.3	1. Installed a type 2 rolling dip.	RD fully vegetated and functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
93+90	22		Site 22: Diverted stream crossing. 1. Defined ditch for 50' up road and connected to new armored fill. 2. Install an armored fill crossing using 15 yd ³ of 0.5'-1.5' riprap.	Rock armor intact and ditch looks stable and vegetated.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	

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Appendix A- BMP Monitoring Field Sheets

Goodman Road (upgrade):

Abbreviations: CD = Critical dip; EOS = End of survey/road log; DRC = Ditch relief culvert; GCS = Grade control structure; OSR-FD = Outslope road and fill the ditch; OSR-KD = Outslope road and keep the ditch; RD = Rolling dip; SOS = Start of survey/road log.						
<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies/maintenance needs)</i>	<i>Is BMP operating properly?</i>	<i>Photo taken? (Check box)</i>
94+75	23		Site 23: Ditch with gully delivering to main channel. 1. Enhanced berm along ditch and created a turnaround and a parking area with spoils from decommissioning on Rogers Canyon Road.	Ditch and berm intact and appear stable. Big leaf maple trees are continuing to grow in the ditch.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
95+45		EOS	End road log at Site 24 (Site 24 detailed in the road log for Rogers Canyon Road).		N/A	

Rogers Canyon Road (decommission):

<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies)</i>	<i>Is BMP operating/maintained properly?</i>	<i>Photo taken? (Check box)</i>
Road description and general road log notes: Rogers Canyon Road travels alongside Rogers Creek and is impassable by vehicle traffic from Goodman Road. Sediment source site numbers and original problem description in bold.						
00+00		SOS	Start road log at the new terminus of Goodman Road and Site 24 on Rogers Creek.		N/A	

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Rogers Canyon Road (decommission):

<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies)</i>	<i>Is BMP operating/ maintained/ properly?</i>	<i>Photo taken? (Check box)</i>
	24	Start IPOS 1	<p>Site 24: (2) 48” metal culverts with gabion walls.</p> <p>1. Decommissioned crossing by removing all fill, culverts, gabions and any other foreign material.</p> <p>2. Cobbles from gabions were placed along right bank to protect slight bend in Rogers Creek during first winter.</p> <p>3. Started road ripping and in-place outsloping with a 4’ wide foot trail along base of cutbank for 435’.</p>	All rock armor intact and site looks stable. Above the crossing there is some unrelated bank erosion with 3 to 4 foot near vertical sections on the right bank.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/>
01+20	25		<p>Site 25: Washed out stream crossing with 9’ x 2’ channel and large gully in alluvial fan setting.</p> <p>1. Decommissioned crossing by laying back vertical sideslopes of gully with minimum 2:1 slopes over 70’ long to Rogers Creek.</p> <p>2. Spoiled locally along cutbanks away from streams and on native hillslope above crossing.</p>	Banks are stable and revegetating.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/>
03+50	26		<p>Site 26: 95% washed out stream crossing with 10’ tall vertical scour banks.</p> <p>1. Decommissioned crossing by excavating for 90’ around vertical face and laying back 2:1 where possible or natural slope.</p> <p>2. Spoiled locally along cutbanks away from streams and incorporated within in-place outslope.</p>	Site looks good and banks are stable with mulch and vegetation. A newer footpath appears to have been constructed through the crossing.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	

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 Appendix A- BMP Monitoring Field Sheets

Rogers Canyon Road (decommission):

<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies)</i>	<i>Is BMP operating/ maintained properly?</i>	<i>Photo taken? (Check box)</i>
04+35		End IPOS 1/ EOS	1. Ended ripping and in-place outsloping at road surface drainage divide. 2. End all 2013 construction and road log (historic road is washed out or unstable in most locations, and continues to property boundary nearly 0.29 mi to gate and property boundary).	Ripped road looks stable and has revegetated well.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	

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Goodman Spur Road (upgrade):

<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies)</i>	<i>Is BMP operating/maintained properly?</i>	<i>Photo taken? (Check box)</i>
Road description and general treatment notes: Goodman Spur Road extends from Goodman Road near “The Goodman Homestead” to a lower flat lying area with loop access back up to the ridge for ranch vehicles. This road log details treatment only for the first 1,345’ from Goodman Spur Road. The road is currently grassed over and used for tending cattle. Sediment source site numbers and original problem description in bold.						
00+00		SOS	Start road log at intersection with Goodman Road near Goodman homestead.		N/A	
06+00	32		Site 32: Ford crossing. 1. No treatments at site.	Ford looks good, but there is some minor bank erosion up and downstream from crossing 1 to 2 foot banks.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
07+65			No treatments at newly installed ditch relief culvert.		N/A	
9+60			Road surface drainage divide.		N/A	
11+60		RD 34.4	1. Installed a type 1 rolling dip.	RD functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
12+20	33		Site 33: Stream crossing with 18” culvert with scour at outlet and plugged inlet. 1. Installed an armored fill crossing using 25 yd ³ of 0.5’-1.5’ riprap.	The 1-foot deep tire ruts from 2014 have been re-graded and filled in with native stream gravels. Site looks stable.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/>
13+45		EOS	End road log at road surface drainage divide.		N/A	

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Appendix A- BMP Monitoring Field Sheets

Skovie Road (upgrade):

Abbreviations: CD = Critical dip; EOS = End of survey/road log; ISR = Inslope road; RD = Rolling dip; SOS = Start of survey/road log.						
<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies)</i>	<i>Is BMP operating/maintained properly?</i>	<i>Photo taken? (Check box)</i>
Road description and general road log notes: Skovie Road extends from Goodman Road near hairpin turn and Site 13 down to middle southern area of property. It is unsurfaced and used seasonally for ranch and power line maintenance. Sediment source site numbers and original problem description in bold.						
00+00		SOS	Start road log at intersection with Goodman Road near sign for Horse Hill and Skovie Basin.		N/A	
00+40		RD 35	1. Installed a type 2 rolling dip.	RD functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
01+15		RD 36	1. Installed a type 1 rolling dip.	There is no reverse grade on this rolling dip, only a more aggressive outslope, which seems to be functioning ok.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
02+50	34		Site 34: Existing ditch relief culvert in good condition. 1. No treatment at site.	Culvert in good condition, slight rust at inlet, but functioning well.	N/A	
05+70			Existing 12" ditch relief culvert in good condition.	Pipe still in good condition.	N/A	
07+75			Road surface drainage divide.		N/A	
09+70			Intersection on left, road log continues to right with no gate.		N/A	
10+90		RD 36.1	1. Installed a type 1 rolling dip.	RD functioning well.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
12+10		RD 37	1. Installed a type 1 rolling dip.	RD functioning ok. Small rill from 2014 has downcut to a gravelly layer and appears stable.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/> Refer to page 20 on Photo Plates

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Skovie Road (upgrade):

Abbreviations: CD = Critical dip; EOS = End of survey/road log; ISR = Inslope road; RD = Rolling dip; SOS = Start of survey/road log.						
<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies)</i>	<i>Is BMP operating/maintained properly?</i>	<i>Photo taken? (Check box)</i>
13+85		RD 38	1. Installed a type 1 rolling dip.	RD functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
14+80		RD 39	1. Installed a type 1 rolling dip.	RD functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
15+75	35	CD 8/ Start ISR 1	Site 35: Poorly defined ephemeral stream diverted down road. 1. Installed a critical dip on lower left hinge to prevent diversion potential down road. 2. Started inslope road to drain hillslope and road towards spring and historic alignment for 100'.	Dip and inslope functioning well.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
16+75		End ISR 1	Ended inslope road.	Road in good condition.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
18+00		RD 40	1. Installed a type 1 rolling dip.	RD functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
19+00	36		Site 36: Diverted ephemeral stream crossing. 1. Installed an armored fill crossing using 5 yd ³ of 0.5'-1.5' riprap.	Armor fill in good condition and stable.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
20+10	37		Site 37: 5' x 1' stream crossing with eroding fill. 1. Installed an armored fill crossing with 20 yd ³ of 0.5'-2.0' riprap.	Armored fill appears stable.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
20+60			Road surface drainage divide.		N/A	
24+40		RD 41	1. Installed a type 1 rolling dip.	The adjacent cutbank is springy, but the RD is functioning well with no erosion.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	

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 Appendix A- BMP Monitoring Field Sheets

Skovie Road (upgrade):

Abbreviations: CD = Critical dip; EOS = End of survey/road log; ISR = Inslope road; RD = Rolling dip; SOS = Start of survey/road log.						
<i>Distance on road (feet)</i>	<i>PWA site#</i>	<i>Road treatment</i>	<i>Site / treatment description</i>	<i>Observations (Note any deficiencies)</i>	<i>Is BMP operating/maintained properly?</i>	<i>Photo taken? (Check box)</i>
25+40	38	EOS	Site 38: Washed out crossing with foot bridge. 1. Decommissioned crossing by excavating sideslopes to natural grade or minimum 2:1 grade. 2. End road log at Site 38.	Everything looks stable. There is historical bank erosion downstream of the crossing. The wood footbridge has fallen in the stream.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/>

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Appendix B- Photo Plates 2015-2016 Annual Monitoring Report



PWA Site #1 (May 2015)



PWA Site #1 (May 2016)

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PWA Site #2 (May 2015)



PWA Site #2 (May 2016)

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PWA Site #5 inlet (May 2015)



PWA Site #5 inlet (May 2016)

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PWA Site #5 outlet (May 2015)



PWA Site #5 outlet (May 2016)



PWA Site #5 scour pool (May 2016)

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PWA Site #6 inlet (May 2015)



PWA Site #6 inlet (May 2016)

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PWA Site #6 outlet (May 2015)



PWA Site #6 outlet (May 2016). Repair work on 9/26/2015.

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View of headcut above PWA Site #6.2, below PWA Site #8.1 (May 2015)



View of headcut above PWA Site #6.2, below PWA Site #8.1 (May 2016)

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PWA Site #7 (May 2015)



PWA Site #7 (May 2016)

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PWA Site 7.2 (May 2015)



PWA Site 7.2 (May 2016)

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PWA Site 7.2a - Hole where inboard road ditch drains to rock armor (May 2016)



PWA Site 7.2b - Headcut has developed at the top right corner of the rock slope protection (May 2016)

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PWA Site 7.2c Rill into hole above rock armor one of two sets (May 2016)



PWA RD1: Shallow depression (May 2016)

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PWA Site #8.1 (May 2015)



PWA Site # 8.1 (May 2016)

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PWA Site #8.1 Grade Control Structure Headcut (May 2015)



PWA Site #8.1 Grade Control Structure Headcut (May 2016)

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PWA Site # 11 (May 2015)



PWA Site #11 (May 2016)

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PWA Site # 19 (May 2015)



PWA Site #19 (May 2016)

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PWA Site # 20 (May 2015)



PWA Site #20 (May 2016)

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PWA Site #24 (May 2015)



PWA Site #24 (May 2016)

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PWA Site # 25 (May 2015)



PWA Site #25 (May 2016)

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PWA Site #33 uphill (May 2015)



PWA Site #33 uphill (May 2016)

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PWA RD #37 (May 2015)



PWA RD #37 (May 2016)



PWA RD #37 further down road, rill hits gravelly native road layer before exiting at RD #38 (May 2016)