

2013 BEST MANAGEMENT PRACTICES EVALUATION PROGRAM

ANNUAL REPORT
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USDA FOREST SERVICE
LAKE TAHOE BASIN MANAGEMENT UNIT
ECOSYSTEM CONSERVATION DEPARTMENT



Nicole Brill, Hydrologist
Sue Norman, Supervisory Hydrologist

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EXECUTIVE SUMMARY

In 2013, the Lake Tahoe Basin Management Unit (LTBMU) completed 31 Regional Best Management Practices Evaluation Program (BMPEP) evaluations and 2 National Core BMP Monitoring protocols as part of the Pacific Southwest Region's (Region 5) effort to evaluate the implementation and effectiveness of BMPs designed to protect soil and water resources associated with Timber, Engineering, Recreation and Revegetation activities.

In 2013, the US Forest Service rolled out a National program of establishing and monitoring Best Management Practices (BMP) to protect soil and water quality. Every Forest in the National Forest System was asked to beta-test two of the National Core BMP Monitoring (CBMPM) protocols. Therefore Region 5 of the USFS scaled back the number of Regional BMPEP evaluation targets, in order to allow Forests to implement two National CBMPM protocols. National CBMP monitoring protocols are more comprehensive and interdisciplinary than the Region 5 BMPEP protocols, and it is anticipated that the National CBMPM program will completely replace the Region 5 program in two to three years.

Overall the LTBMUs track record for BMP implementation and evaluation remains strong, with 100% of the Regional BMPEP targets rating as successfully implemented and effective in 2013, and the 5 year average for the period from 2009 through 2013 rating as 95% effective and 96% successfully implemented. Follow-up monitoring (conducted at Angora Fuels Reduction Project in 2013) continues to show effective management response to identified deficiencies in the previous year.

However the two National Core BMP monitoring evaluations beta-tested in 2013 did identify deficiencies that either resulted in, or have the potential to result in adverse impacts to soil, water quality, or riparian resources. The National CBMPM protocols are much more labor intensive and walk the interdisciplinary evaluation team through a more thorough evaluation process to identify causes of deficiencies and identify appropriate management responses to identified deficiencies. As the USDA Forest Service BMP program continues to evolve towards full adoption of the National CBMPM program, a fewer number of evaluations will be conducted each year in Region 5 than have been conducted in the past. However these evaluations are more likely to identify deficiencies that may be institutional in nature. The National CBMPM protocol leads to a more thorough analysis of the plans, designs and procedures utilized by the implementing Unit, and whether those processes are sufficient to ensuring appropriate BMPs are being followed, and whether they are effective.

Follow-up evaluation is not necessary in regards to the fish net installation deficiency identified as part of the evaluation of BMPs at the Upper Truckee River Restoration project, which resulted in an estimated 30 cubic yards of bank erosion. However the lesson learned in this regard should be integrated into design feature language for future planning documents prepared by Unit aquatic biologists and hydrologists. It is also recommended that another National CBMPM evaluation be conducted next year during a second bridge installation scheduled for this project.

An informal follow-up evaluation will be scheduled for the Bayview Campground and Trailhead, to determine the status of moving campsite infrastructure at one site to at least 15 feet away from an adjacent perennial stream, to be included in 2014 reporting.

1. INTRODUCTION

This report summarizes the results of the Best Management Practices Evaluation Program (BMPEP) at the Lake Tahoe Basin Management Unit (LTBMU) during 2013. The objectives of this program are (i) to fulfill USFS monitoring commitments to the State Water Resources Control Board (SWRCB), as described in the SWRCB/USFS Management Agency Agreement and *Water Quality Management for National Forest System Lands in California (USDA Forest Service, 2000)*, (ii) to assess and document the efficacy of the USFS water quality management program, specifically, by evaluation of the implementation and effectiveness of BMPs; and (iii) to facilitate adaptive management, by identifying opportunities to improve the program and recommending and tracking the improvements.

2. OBJECTIVES AND METHODS

Onsite evaluations are used to assess both implementation and effectiveness of BMPs. Implementation evaluations determine the extent to which planned, prescribed and/or required water quality protection measures are actually put in place on project sites. Effectiveness evaluations gauge the extent to which the practices meet the water quality protection objectives. Component ratings for project planning, implementation, and effectiveness are entered into the BMPEP database, along with the degree, duration, and extent of any problems that exist. Based on conditions observed during the evaluation, weight is applied to the component ratings to determine an overall rating for implementation and effectiveness.

The US Forest Service rolled out National BMP program guidance in 2014 (cite National BMP Technical Guide, 2013), and initiated beta testing of a National BMPEP program also in 2013. Region 5 (Pacific Southwest Region) of the USFS has had a Regional BMP Program in place since 2000. 2013 was the first year that the evaluations in the Regional Program has been scaled back (by about 25% for each Forest) in order to initiate the beta-testing of the National BMPEP program.

The National BMPEP protocols are much more intensive and interdisciplinary in execution than the Region 5 protocols, therefore requiring many more man hours and documentation for each individual protocol. It is expected that the Regional BMPEP program will be completely replaced by the National Program in about two to three years.

Additional details regarding Regional BMPs, protocols, and site selection can be found in *Investigating Water Quality in the Pacific Southwest Region, Best Management Practices Evaluation Program (BMPEP) User's Guide (USDA Forest Service, 2002)* and *Water Quality Management for National Forest System Lands in California (USDA Forest Service, 2000)*.

Additional details regarding the National BMPs can be found in *National Best Management Practices for Water Quality Management on National Forest System Lands, Volume 1: National Core Technical Guide, FS990a (USDA, 2013)*. National BMP monitoring protocols are currently only available on a USFS intranet site as the process goes through this beta-testing period. The final National Core BMP Monitoring Technical Guide is expected to be completed in spring of 2014.

The following is a summary of the process used under each of the BMPEP protocols.

Region 5 BMPEP

BMP implementation evaluation forms are used to document answers to a variety of specific questions intended to determine whether the project was executed as specified in project planning documents. A range of possible ratings is assigned to each question depending on its relative importance and the degree to which a particular requirement is met (e.g., whether the project exceeds, meets, departs immaterially or substantially from requirements). Ratings for all implementation questions are then summed and compared to a pre-determined threshold to conclude whether BMPs were implemented completely. BMP effectiveness is determined through observations of qualitative water quality protection (e.g., visual evidence of sediment delivery to channels) and quantitative measurements (e.g. amount of ground cover, percent of stream shade).

This rating approach results in a 2 x 3 matrix, where a given suite of BMPs are placed into one of six categories: implemented and effective (I-E), not implemented but effective (NI-E), implemented and at risk (I-AR), and not implemented and at risk (NI-AR), implemented but not effective (I-NE), and not implemented and not effective (NI-NE):

- “implemented and effective (I-E)” A rating of I-E results when the BMP was both implemented and effective.
- “not implemented but effective (NI-E)” A rating of NI-E results when BMPs were not implemented, or were not installed according to specifications, yet there is no evidence of potential water quality impairment. The judgment that there is no evidence of potential water quality impairment is made when (i) BMPs are visually confirmed to be effective despite having been incorrectly installed, or (ii) no BMP was necessary for the specific situation, or (iii) no precipitation event occurred to provide evidence of impairment, or (iv) only project planning deficiencies were noted.
- “implemented but not effective (I-NE)” A rating of I-NE results when BMPs were implemented, but evidence of erosion and/or sediment delivery to an SEZ was observed.
- “not implemented and not effective (NI-NE)” A rating of NI-NE results when BMPs were not implemented and evidence of erosion and/or sediment delivery to an SEZ was observed.
- “implemented and at risk (I-AR)” A rating of I-AR results when BMPs were implemented, no evidence of sediment delivery to an SEZ was observed, however evidence of erosion and potential for sediment transport to an SEZ was observed.
- “not implemented and at risk (NI-AR)” A rating of NI-AR results when BMPs were not implemented, no evidence of sediment delivery to an SEZ was observed, however evidence of erosion and potential for sediment transport to an SEZ was observed.

The “at risk”-AR ratings are a new category that was added to the BMPEP scoring protocol starting in FY11.

For those locations where the BMPs receive poor ratings for implementation or effectiveness, observers are asked to identify the causes and to suggest corrective actions. The evaluators estimate the degree, duration, and magnitude of any existing or potential impacts to water quality, based on published Region 5 guidelines. This type of “hill-slope monitoring” uses indirect measures to evaluate BMP effectiveness. Poor ratings represent potential, as well as actual, impairment of water quality at a given location. All BMPs for which there exists visual evidence of impairment receive poor ratings; but so do

some BMPs that have no actual impairment as yet, because the potential is significant for water quality impairments to occur in the future at those locations.

Best Management Practices Evaluation Program protocols are applied to both randomly and non-randomly selected project sites in the Basin. The number of random evaluations to be completed each year is assigned to the National Forests by the Regional Office based on (i) the relative importance of the BMP in protecting water quality in the Region and (ii) those management activities most common on the individual Forest. Forests can supplement these randomly selected sites with additional sites based on local monitoring needs, such as those prescribed in an environmental document. Only data from onsite evaluations made at randomly selected sites are used to assess BMP implementation and effectiveness at the Regional programmatic level.

National Core BMP Monitoring

The purpose of the National Core BMP monitoring (CBMPM) program is to establish a standardized set of procedures for monitoring the implementation and effectiveness of the national core BMPs.

It is designed to be implemented by Forest or Grassland-level interdisciplinary teams on a subset of the unit's projects and activities. The goal is to obtain a statistically significant set of monitoring results for each Forest Service Region within 5 years for each National Core BMP applied extensively in the Region. As stated previously, the National Core BMP monitoring protocols are expected to be published in the National BMP monitoring Technical Guide (volume 2) in 2014.

The current draft protocols are quite lengthy so were not included as an attachment to this report, and they are not currently available on a publicly available website or document. However electronic copies of these draft protocols can be provided upon request.

3. RESULTS

A. Regional BMPEP

The number of Regional BMPEP targets was reduced to accommodate adding two National CBMPM evaluations. The LTBMU completed 31 Regional Office assigned BMPEP targets, which are summarized in Appendix A, Table A1. Project BMPs implemented in 2012 were rated for effectiveness after spring runoff in 2013. BMPEP scoring results are displayed in Appendix A, Table A2.

All the evaluations conducted in 2013 below were rated as implemented and effective (I/E).

Timber (Vegetation and Fuels Management)

A total of 9 timber evaluations were rated implemented and effective at fuels reduction treatment projects. The T05 evaluation was not technically rated for effectiveness, because according to the protocols, effectiveness is only to be rated if a precipitation event occurs within the unit during active operation. The timber sale unit evaluated was active between 8/11/2012 through 9/11/2012, and no precipitation event occurred during this period. For the purposes of annual reporting this evaluation is considered to be effective by "default".

- 3 - T01, Streamside Management Zones

- 2 - T02, Skid Trail.
- 2 - T04, Landings.
- 1 - T05, Timber Sale Administration.
- 1 - T06, Special Erosion Control and Revegetation

T01: Streamside Management Zones

- South Shore Fuel Hazard Project, Unit 1183
- South Shore Fuel Hazard Project, Unit 201
- South Shore Fuel Hazard Project, Unit 200

T02: Skid Trails

- South Shore Fuel Hazard Project, Unit 200
- Angora Long Term Fuel Restoration Project, Unit 16

T04: Landings

- South Shore Fuel Hazard Project, Unit 201
- Angora Long Term Fuel Restoration Project, Unit 02

T05: Timber Sale Administration

- South Shore Fuel Hazard Project, Unit 151

T06: Special Erosion Control and Revegetation

- South Shore Fuel Hazard Project, Unit 153

Engineering and Restoration

All 16 completed evaluations of Roads and In-channel Construction Practices were rated as implemented and effective.

- 3- E08, Road Surface, Drainage and Slope Protection;
- 2- E09, Stream Crossing;
- 2- E11, Control of Sidecast Material,
- 2- E13, In-Channel Construction Practice;
- 2- E14: Temporary Roads;
- 1- E15: Rip Rap Composition;
- 1- E17: Snow Removal;
- 3- E20: Management of Roads during Wet Periods;

E08: Road Surface, Drainage and Slope Protection

- Angora Road Sys. (Angora Fire Restoration Project), Unit 10
- 14N42 Meeks Creek North
- 12N05 High Meadow Road

E09: Stream Crossing

- Angora Road System (Angora Fire Restoration Project), Unit 10
- 12N05 High Meadow Road

E11: Control of Sidecast Material

- Angora Road System (Angora Fire Restoration Project), Unit 10
- 12N05 High Meadow Road

E13: In-Channel Construction Practice

- Cold Creek/High Meadows Stream Channel Restoration
- Blackwood Creek Stream Channel Restoration, Reach 1

E14: Temporary Roads

- Angora Fire Long Term Restoration Project, Road D2
- Blackwood Creek Stream Channel Restoration, Reach 1 – Project access road

E15: Rip Rap Composition

- Angora Road Sys. (Angora Fire Restoration Project), Unit 10

E17: Snow Removal

- Dryfus Estate

E20: Management of Roads During Wet Periods

- 15N38 Blackwood Middle Fork
- 1201 Fountain Place Road
- 1566 Secret Harbor

Recreation

BMPs at a total of four Recreation Sites were rated implemented and effective.

- 3 – R22, Developed Recreation Sites
- 1 – R30, Dispersed Recreation Site

R22, Developed Recreation Sites

- Sawmill Pond Recreation Area
- Meeks Bay day use and campground
- Newhall (Skunk Harbor) historical site

R30, Dispersed Recreation Sites

- Genoa Peak Trailhead

Revegetation of Surface Disturbed Areas and Prescribed Fire

These two evaluations were also rated as implemented and effective.

V29, Revegetation of Surface Disturbed Areas

- High Meadow Restoration Project

F25, Prescribed Fire

- Kingsbury Fuel Project, Unit 6 (44 acres)

B. Follow-up Region 5 BMPEP evaluations from 2012

The 2012 BMPEP Report recommended follow-up evaluations at two site locations to verify whether corrective measures were taken to address past issues or concerns. Remedial action was taken later in 2012, that addressed drainage issues at these locations as part of a planned roads and trails upgrade project in the area in 2012.

Angora Long Term Restoration Project- Fuels Reduction, Unit 13: Rilling was present on the landing (T04) and there was evidence of concentrated flow and sediment transport to an adjacent ephemeral channel after a storm event during the 2012 evaluation. A follow up visit in 2013 showed no presence of rills in the landing.

Angora Long Term Restoration Project- Fuels Reduction: Rills were observed on a temporary road (E14) as a result of spring flows seeping out of fill slope during the evaluation in May 2012. During the follow up visit in Oct. 2013, no rills were observed on the road surface.

C. National CBMPM Evaluations

The two National CBMPM evaluations selected by the LTBMU for national beta-testing was Operations and Maintenance of a Developed Recreation Site (REC-A) and Construction of Aquatic Ecosystem Improvements (AqEco –A). No final BMPEP guidance document has been produced yet, but the draft protocols for beta testing were provided to the Forest on an internal USFS website. The completed forms for these two evaluations are presented in Appendix B.

The National CBMPM protocols and forms are much more intensive and interdisciplinary than the Region 5 protocols, and a scoring system is still being developed. Both of these evaluations identified deficiencies in the implementation and/or effectiveness of BMPs utilized at the sites evaluated. These BMP deficiencies and recommended management response are described below.

AqEco-A: Upper Truckee River, Reach 5 Stream Channel and Floodplain Restoration Project

The Upper Truckee River (UTR) Restoration project is a 3 year project that will result in the new construction of 1.25 miles of stream channel to replace an existing incised channel. The purpose of this project is to restore hydrologic connectivity to the adjacent floodplain, improve aquatic and riparian habitat, and reduce the rate of stream channel erosion. This evaluation was conducted to evaluate the BMPs implemented in this first year of implementation, during the installation of a temporary bridge and associated access road. These actions presented the highest risk to water quality during project activities implemented in 2013.

All the BMPs installed to protect water quality were implemented as designed, and effective at preventing impacts to water quality, even during a two day storm event (.8 inches of rain total) that

occurred during installation. However a deficiency occurred as a result of the installation of fish nets to prevent impact to fisheries. The fish nets were installed in a manner and location that resulted in approximately 30 cubic feet of bank erosion (10' L x 1' D x 3' H) during increased flow from the 2 day storm event. Flows increased from 37 cfs to 90 cfs during this event. As a result of bank erosion and overtopping, the fish nets were only marginally successful.

Recommended Management Response:

Do not utilize fish nets during periods when stream flows are expected to increase substantially due to forecasted precipitation events. If fish nets have already been installed, remove nets until increased flows have dropped to base flow levels. Select locations to install fish nets in the stream that are inherently stable (i.e. have adequate vegetation, rock, wood stability components) and therefore are more resistant to erosion.

Conduct a new AqEco – A evaluation at the second bridge installation, scheduled to occur at the Upper Truckee River Restoration Project in 2014, to evaluate effectiveness of all BMPs (including proper fish net installation) in preventing adverse impacts to water quality.

REC-A: Bayview Campground and Trailhead Operations and Maintenance

This is a 4 acre site, which is administered by a concessionaire. It contains 13 campsites, and is heavily used site used as a trailhead into the Cascade Falls day hike, as well as longer trips into Desolation Wilderness. This site has been in existence since the 1960's, and the first concessionaire operating and maintenance plan was established in 1985. The last update was in 2012 and is in effect through 2016. The plan provides basic provisions for controlling erosion from facility infrastructure.

The evaluation determined, there is one campsite (#7) in which the pedestal grill lies within 10 feet of an intermittent stream (see photo below).



The proximity of this grill to the stream channel encourages some degree of soil compaction from trampling, which can result in less infiltration and increased surface runoff and erosion. However because the ground is flat, and pine needle cover is provided from adjacent conifers, the risk of significant soil erosion is low.

Recommended Management Response:

Although there is no current evidence of adverse impacts to resources, the location of the pedestal grill should be pulled back to at least 15 feet from the stream channel bank. This is based on the following applicable standard for SEZ setbacks as stated in the Lahontan Regional Water Quality Control Board Basin Plan, and provides a reasonable buffer between the stream and the campsite infrastructure.

Confined Ephemeral or Intermittent Stream: When a confined ephemeral or intermittent stream is present, the following setbacks are established based on the corresponding slope conditions:

- (a) Good Slope Condition: When the slope condition is identified as good, the setback is 15 feet from the edge of the SEZ or 10 feet from the edge of a terrace if present, whichever is less.

This work should be scheduled for 2014. Conduct an informal follow-up evaluation to determine status of implementing this recommendation, to report on in the 2014 annual report.

D. Five-Year Summary of Region 5 BMPEP Results

With the gradual ramp down in implementation of the Region 5 BMPEP protocols, this seems to be a good time to look at the overall performance of soil and water BMP utilization by the LTBMU over the past five years. The table below displays BMP effectiveness during this period (2009 through 2013). This includes both Regional target evaluations, as well as additional evaluations conducted that were project or precipitation event specific.

Year	Total # of BMPEP Evaluations	# of Effective Ratings **	# of Successfully Implemented Ratings*
2013	31	31	31
2012	35	33	35
2011	38	36	37
2010	39	37	37
2009	41***	37	36
TOTAL	184	174	176

** Implemented - BMPs were implemented as specified in contract/NEPA/permit documents.*

*** Effective – no evidence of water quality impairment, or risk of impairment, was observed.*

****Included 11 evaluations conducted during an October 2009 storm event, at the Angora Fuels Reduction Project.*

Over the past five year period, BMPs were rated as effective 95% of the time, and implemented as specified 96% of the time. The annual reports documents deficiencies where they occurred, recommended management actions, as well as follow up evaluations to evaluate whether deficiencies

were resolved. This process has resulted in an effective and ongoing adaptive management response to correct observed deficiencies. All annual reports are posted on the LTBMU external website.

4. SUMMARY AND CONCLUSIONS

Overall the LTBMUs track record for BMP implementation and evaluation remains strong, with 100% of the Regional BMPEP targets rating as successfully implemented and effective in 2013, and the 5 year average for the period from 2009 through 2013 rating at 95% effective and 96% successfully implemented. Follow-up monitoring continues to show effective management response to identified deficiencies.

However the two National Core BMP monitoring evaluations beta-tested in 2013 did identify deficiencies that either resulted in, or have the potential to result in adverse impacts to soil, water quality, or riparian resources. The National CBMPM protocols are much more labor intensive and walk the interdisciplinary evaluation team through a more thorough evaluation process to identify causes of deficiencies and identify appropriate management responses to identified deficiencies. As the USDA Forest Service BMP program continues to evolve towards full adoption of the National CBMPM program, a fewer number of evaluations will be conducted each year in Region 5 than has been conducted in the past. However these evaluations are more likely to identify deficiencies that may be institutional in nature. The National CBMPM protocol leads to a more thorough analysis of the plans, designs and procedures utilized by the implementing Unit, and whether those processes are sufficient to ensuring appropriate BMPs are being followed, and whether they are effective.

Follow-up evaluation is not necessary in regards to the fish net installation deficiency identified as part of the evaluation of BMPs at the Upper Truckee River Restoration project. However the lesson learned in this regard should be integrated into design feature language for future planning documents prepared by Unit aquatic biologists and hydrologists. It is also recommended that a new AqEco-A evaluation be conducted next year during a second bridge installation scheduled for this project.

An informal follow-up evaluation will be scheduled for the Bayview Campground and Trailhead, to determine the status of moving campsite infrastructure, to be included in 2014 reporting.

References

- USDA Forest Service. 2000. Water Quality Management for National Forest System Lands in California: Best Management Practices. Pacific Southwest Region; Vallejo, CA.
- USDA Forest Service. 2002. Investigating Water Quality in the Pacific Southwest Region: Best Management Practices Evaluation Program (BMPEP User's Guide. Pacific Southwest Region; Vallejo, CA.
- USDA Forest Service. 2012. National Best Management Practices for Water Quality Management on National Forest System Lands, Volume 1: National Core Technical Guide, FS990a

Appendix A

Table A1: 2013 BMPEP Targets and Selections for the LTBMU

<i>Evaluation</i>	<i>Form</i>	<i>Region 5 Target</i>		<i>Evaluations</i>	<i>Project Site</i>
Streamside Management Zones	T01	3		3	1. South Shore Fuel Hazard Unit 1183 2. South Shore Fuel Hazard Unit 201 3. South Shore Fuel Hazard Unit 200
Skid Trails	T02	2		2	1. South Shore Fuel Hazard Unit 200 2. Angora Long Term Restoration Unit 16
Landings	T04	2		2	1. South Shore Fuel Hazard 201 2. Angora Long Term Restoration Unit 02
Timber Sale Administration	T05	1		1	South Shore Fuel Hazard Unit 151
Special Erosion Control & Revegetation	T06	1		1	South Shore Fuel Hazard Unit 153
Road Surface & Slope Protection	E08	3		3	1. Angora Long Term Restoration Unit 10 2. 14N42 Meeks Creek North 3. 12N05 High Meadow
Stream Crossings	E09	2		2	1. Angora Long Term Restoration Unit 10 2. 12N05 High Meadow
Control of Sidecast Material	E11	2		2	1. Angora Long Term Restoration Unit 10 2. 12N05 High Meadow
In-channel Construction Practices	E13	2		2	1. Cold Creek Stream Channel Restoration 2. Blackwood Creek Stream Channel Restoration, Reach 1
Temporary Roads	E14	2		2	1. Angora Long Term Restoration, Unit 10 2. Blackwood Creek Stream Channel Restoration Reach 1, Access Road
Rip Rap Composition	E15	1		1	Angora Long Term Restoration Unit 10
Snow Removal	E17	1		1	Dryfus Estate
Management of Roads During Wet Periods	E20	3		3	1. 15N38 Blackwood Middle Fk 2. 1201 Fountain Place Rd 3. 1566 Secret Harbor
Developed Recreation Sites	R22	3		3	1. Sawmill Pond 2. Meeks Bay day use & campground 3. Newhall (Skunk Harbor)
Dispersed Recreation Sites	R30	1		1	Genoa Peak Trailhead
Revegetation of Surface Disturbed Areas	V29	1		1	High Meadow Restoration Project
Prescribed Burn	F25	1		1	Kingsbury Fuel Project
TOTAL		31		31	

Table A2. Results of the BMPEP Evaluations by Program Area at LTBMU in 2013

Program Area & Form	Number of Evaluations	EFFECTIVE		At Risk		NOT EFFECTIVE	
		Implemented & Effective	Not Implemented & Effective	Implemented and at risk	Not Implemented and at risk	Implemented & Not Effective	Not Implemented & Not Effective
Timber							
T01	3	3	0	0	0	0	0
T02	2	2	0	0	0	0	0
T04	2	2	0	0	0	0	0
T05	1	1	0	0	0	0	0
T06	1	1	0	0	0	0	0
Subtotal #	9	9	0	0	0	0	0
Engineering							
E08	3	3	0	0	0	0	0
E09	2	2	0	0	0	0	0
E11	2	2	0	0	0	0	0
E13	2	2	0	0	0	0	0
E14	2	1	0	1	0	0	0
E15	1	1	0	0	0	0	0
E17	1	1	0	0	0	0	0
E20	3	3	0	0	0	0	0
Subtotal #	16	15	0	0	0	0	0
Recreation							
R22	3	3	0	0	0	0	0
R30	1	1	0	0	0	0	0
Subtotal #	4	4	0	0	0	0	0
Revegetation V29	1	1	0	0	0	0	0
Prescribed FireF25	1	1	0	0	0	0	0
Subtotal #	2	2	0	0	0	0	0
Total # BMPs	31	31	0	0	0	0	0
Percentage of Ratings		100%	0%	0%	0%	0%	0

Appendix B – National CBMPM Evaluations

Rec A. Developed Recreation Sites

(Reference BMPs Rec-1, Rec-2, Rec-4, and Rec-9)

DRAFT v1.0 March 2013

67. Header					
1. Type of review being performed. Select one: Implementation and Effectiveness Effectiveness Both Implementation			2. If current review is for an initial evaluation of effectiveness only, what was the date of the implementation review for this site?		
Follow-up Implementation Effectiveness Follow-up Effectiveness Follow-up Implementation and Effectiveness			3. If current review is a follow-up evaluation, what was the date of the most recent evaluation?		
			4. Date of current field evaluation: 5/29/2013		
5. If this is a follow-up evaluation, describe all of the corrective actions that were applied to protect or improve water quality since the initial evaluation:					
6. If this is a follow-up evaluation, describe all of the adaptive management actions that were applied to protect or improve water quality since the initial evaluation:					
7. Reviewers and Titles: Nicole Brill, Hydrologist Bob Becker, Recreation Specialist					
8. Region number: 05		9a. Proclaimed Forest or Grassland number and name: 9b. Administrative Forest or Grassland number and name: 19- Lake Tahoe Basin Management Unit		10. District number and name: n/a	
11a. Reason for monitoring. Select all that apply: WO/RO Targets Land Management Project Review Quality Assurance Other (specify): Plan Monitoring					
11b. Was the project/site selected following the procedures described in the National BMP Monitoring Protocols? a. Yes b. No If No, describe the procedures used to select the project/site:					
12. 6 th level HUC number and name for the subwatershed this site is in: 160501010402 McKinney_Bliss_Eagle Creek Frontal					
13. Is any part of the area being evaluated located within a municipal watershed? Select one: Yes No					
14a. Location. UTM Zone: UTM Datum: 10		14b. Location. Easting: 751367		14c. Location. Northing: 4314523	
				15a. Location. Latitude:	
				15b. Location. Longitude:	
				15c. Location. Lat/Long Datum:	
16. Conditions during the 24 hours before the field evaluation. Select all that apply: Rain Snow Snowpack on the ground Melting snow Melting sleet Hail/ Freezing rain/ freezing fog Other (specify): 0.15 inches in last 48 hrs Unknown					
17. Name of developed recreation site: Bayview Campground and Trailhead					
18. Was this site established prior to the unit's first land management plan? Select one: Yes No If No, what year was it established? 1960's			19. Was this site used for a special event during the past 12 months? Select one: Yes No If Yes, give name of event and dates of event:		
20. Dates site is normally open for use (month to month): Mid May to mid October			21. Who operates this site? Select one: Forest Service Concessionaire		
22. What are the primary recreation uses at this site? Select all that apply: Camping Swimming Picnicking Fishing Rock climbing Boating Other (specify): Trailhead parking					

23. Are sanitation facilities available at this site? Select one: Yes No

24. Is any part of this site located within an AMZ? Select one: Yes No

25. Distance from site to nearest waterbody (ft or m; specify unit): 0 feet

26. Type of waterbody adjacent to waterbody transect. Select all that apply:

Ephemeral stream Intermittent stream Perennial stream/river Pond Lake Wetland/wet meadow Estuary Other (specify):

68. Implementation

27. Are there any unresolved deferred maintenance needs related to water, aquatic, or riparian resources that were identified for this site prior to this evaluation? Select one:

a. Yes
b. No

If Yes, what needs are unresolved?

28. Does the operation and maintenance plan for this site contain provisions for protecting water, aquatic, and riparian resources? Select one:

a. Yes (go to question 29)
b. Plan exists for this site, but it does not contain provisions for water/aquatic/riparian protection (go to question 30)
c. No operation and maintenance plan exists for this site (go to question 30)

29. Indicate if provisions to protect water, aquatic, and riparian resources in the list below that were included in the operation and maintenance plan were implemented fully during this operating season. Select one response in each line. If the provision exists in the operation and maintenance plan and it was implemented fully, select "Yes". If the provision exists in the operation and maintenance plan but it was not implemented fully, select "No". If the provision does not exist in the operation and maintenance plan or it is too early in the operating season to require implementation, select "Not applicable".

a. <input checked="" type="checkbox"/> Locations and spacings of cross drains on trails (e.g., waterbars)	Yes	No	<input type="checkbox"/> Not applicable
b. <input checked="" type="checkbox"/> Cross drainage control and techniques	Yes	No	<input type="checkbox"/> Not applicable
c. <input type="checkbox"/> Trail grades	Yes	No	<input type="checkbox"/> Not applicable
d. <input type="checkbox"/> Trail surfacing	Yes	No	<input type="checkbox"/> Not applicable
e. <input type="checkbox"/> Trail locations	Yes	No	<input type="checkbox"/> Not applicable
f. <input checked="" type="checkbox"/> Waterbody crossing techniques	Yes	No	<input type="checkbox"/> Not applicable
g. <input type="checkbox"/> Mulching and/or seeding, or other soil cover techniques	Yes	No	<input type="checkbox"/> Not applicable
h. <input type="checkbox"/> Campsite locations	<input checked="" type="checkbox"/> Yes	No	<input type="checkbox"/> Not applicable
i. <input type="checkbox"/> Campsite surfacing	Yes	No	<input type="checkbox"/> Not applicable
j. <input type="checkbox"/> Locations and numbers of trash receptacles	<input checked="" type="checkbox"/> Yes	No	<input type="checkbox"/> Not applicable
k. <input type="checkbox"/> Trash receptacle maintenance	<input checked="" type="checkbox"/> Yes	No	<input type="checkbox"/> Not applicable
l. <input type="checkbox"/> Permanent sanitation facilities	<input checked="" type="checkbox"/> Yes	No	<input type="checkbox"/> Not applicable
m. <input type="checkbox"/> Temporary (portable) sanitation facilities	<input checked="" type="checkbox"/> Yes	No	<input type="checkbox"/> Not applicable
n. <input type="checkbox"/> Drainage and stormwater control	<input checked="" type="checkbox"/> Yes	No	<input type="checkbox"/> Not applicable
o. <input type="checkbox"/> Maintenance requirements for roads and access routes	<input checked="" type="checkbox"/> Yes	No	<input type="checkbox"/> Not applicable
p. <input type="checkbox"/> Maintenance requirements for parking areas	<input checked="" type="checkbox"/> Yes	No	<input type="checkbox"/> Not applicable
q. <input type="checkbox"/> Water supply/delivery system maintenance	<input checked="" type="checkbox"/> Yes	No	<input type="checkbox"/> Not applicable
r. <input type="checkbox"/> Aquatic invasive species control	Yes	No	<input type="checkbox"/> Not applicable
s. <input type="checkbox"/> Other (specify):	Yes	No	<input type="checkbox"/> Not applicable

For any provisions you answered "No", briefly explain how implementation is deficient:

30. Were inspections during this operating season performed at critical times for addressing water quality issues? Select one:

a. Not applicable, no inspections were performed
b. Yes
c. No

31. If problems occurred during this operating season that affected or potentially may have affected water, aquatic, or riparian resources, were corrective actions taken to reduce or eliminate the problems? Select one:

- a. No problems occurred so no corrective actions were needed
- b. Corrective actions were needed but not taken**
- c. Corrective actions were needed and implemented

32. Has the site or have portions of the site been closed, or have restrictions been placed on use during the normal operating season during the past 5 years to protect or restore water, aquatic, or riparian resources? Select one:

- a. Not applicable, no problems warranted closure or use restriction (go to question 34)**
- b. Needed and closed or use restricted (go to question 33)
- c. Needed but not closed or use not restricted (go to question 34)

33. What length of time passed between when the problem was identified and the closure or use restriction was implemented? (days, weeks, months, or years; specify unit):

34. Were any treatments applied to this site during the past 5 years to reduce negative impacts to water, aquatic, or riparian resources? Select one:

- a. Not applicable, no problems warranted application of treatments (go to question 36)**
- b. Needed and applied (go to question 35)
- c. Needed but not applied (go to question 36)

If applied, describe the treatments:

35. What length of time passed between when the problem was identified and the treatment was applied? (days, weeks, months, or years; specify unit):

36. Why was the site closed, use restricted, and/or treatments applied? Select all that apply:

- a. Not applicable, no closure, use restriction, or treatments applied during the past 5 years**
- b. Trampled vegetation
- c. Soil compaction
- d. Sheet erosion
- e. Rill erosion
- f. Gully erosion
- g. Shoreline/bank erosion
- h. Road washout
- i. Campsite washout
- j. Trail washout
- k. Water quality in waterbody
- l. Extreme precipitation/weather events
- m. Other (specify):

37. Were chemical or fuel spills or leaks, or dumping that occurred at this site during the past 5 years handled/treated according to the contingency and emergency response plan? Select one:

- a. Not applicable, the Forest or Grassland has no contingency and emergency response plan
- b. Not applicable, no spills, leaks, or dumping occurred during the past 5 years**
- c. Yes, spills, leaks, or dumping were handled/treated according to the contingency and emergency response plan
- d. No, spills, leaks, or dumping were not handled/treated according to the contingency and emergency response plan

38. Are any corrective actions needed to improve implementation? Select one:

- a. Yes (go to question 39)**
- b. No (go to question 40)

39. Provide information about corrective actions needed to improve implementation, and reference the question number to which each correction applies.

(38) Operations and Maintenance plan should specify appropriate SEZ buffers based on Guidelines provided in the Lahontan RWQCB Basin Plan, and require the Concessionaire to ensure that site infrastructure does not encroach into those buffers.

40. Are any adaptive management actions needed to improve implementation? Select one:

- a. Yes (go to question 41)**
- b. No (go to question 42 if effectiveness is to be evaluated at this time; otherwise go to General Comments)

41. Provide information about adaptive management actions needed to improve implementation, and reference the question number to which each action applies. Go to question 42 if effectiveness is to be evaluated at this time; otherwise go to General Comments after answering this question.

See section 39.

Effectiveness

42. Is there evidence of erosion or sedimentation along the waterbody transect from the use or existence of this developed recreation area? Select one; when multiple occurrences would yield different answers, select the most severe occurrence, with severity increasing from b to c.
- No evidence (go to question 47)
 - Evidence erosion or sedimentation within the AMZ, but not reaching the waterbody (go to question 44)
 - Evidence of sediment transport to or deposition in the waterbody (go to question 43)
43. How many places do you observe erosion or sedimentation delivered to or present in the waterbody? Select one:
- 1 or 2
 - 3 or 4
 - 5 or more
44. For all of the occurrences of erosion and sedimentation in the area you identified in question 42, what is the evidence? Select all that apply:
- Traceable evidence to the waterbody, but not currently visible in the waterbody
 - Turbidity present
 - Evidence of localized sediment deposition in the waterbody
 - Changes to substrate composition
 - Changes to channel morphology
 - Bank instability or bank undercutting
 - Bank trampling or compaction
 - Vegetation damage or bare ground
 - Sheet erosion
 - Rill erosion
 - Gully erosion
 - Headcutting
 - Slumping/slips
 - Mass wasting
 - Sediment plumes or accumulations
 - Sediment in sediment traps (straw bales, silt fence, etc.)
 - Rutting
 - Water quality monitoring results
 - Other (specify):
45. What are the sources? Select all that apply:
- Developed camping or day-use site
 - Forest Service-created trail
 - User-created trail
 - Road or parking area
 - Other (specify):
46. What are the causes? Select all that apply:
- Use is exceeding carrying capacity of the site
 - Inappropriate location of campsites
 - Lack of campsite maintenance
 - Inappropriate location of trails
 - Inappropriate trail design
 - Lack of trail maintenance
 - Insufficient number of trails to the waterbody
 - Too many trails to the waterbody
 - Watercraft use or wave action
 - Runoff from open water valves, spigots or other plumbing sources, or plumbing leaks
 - Runoff from roofs, or roof gutters and downspouts
 - Runoff from road or parking area
 - Other (specify):
47. What evidence of trash or domestic animal or human sanitary waste exists along the waterbody transect? Select all that apply:
- No evidence (go to question 49)
 - Evidence of trash within the AMZ (go to question 48)
 - Evidence of trash in the waterbody (go to question 48)
 - Evidence of domestic animal or human sanitary waste/toilet paper within the AMZ (go to question 48)

e. Evidence of domestic animal or human sanitary waste/toilet paper in the waterbody (go to question 48)

48. What are the causes? Select all that apply:

- a. Insufficient number of waste receptacles
- b. Waste receptacles not emptied frequently enough
- c. Use is exceeding carrying capacity of the site
- d. Insufficient number of toilet facilities
- e. Toilet facilities are not functioning properly
- f. Inconsiderate human actions
- g. Other (specify):

49. What is the total length of the waterbody transect? (ft or m; specify unit): 1,050 feet

50. What percentage of the length of the waterbody transect has evidence of potential or current impacts to water quality? (percent): 0 percent

51. Is there evidence of erosion or sedimentation on or originating from the trails that connect the developed site to AMZs or waterbodies? Select one; when multiple occurrences would yield different answers, select the most severe occurrence, with severity increasing from c to e.

- a. Not applicable, no connecting trails (go to question 63)
- b. No evidence of erosion or sedimentation (go to question 57)
- c. Evidence of erosion or sedimentation outside an AMZ (go to question 54)
- d. Evidence of erosion or sedimentation within an AMZ, but not reaching a waterbody (go to question 53)
- e. Evidence of sediment transport to or deposition in a waterbody (go to question 52)

52. How many places do you observe erosion or sedimentation delivered to or present in a waterbody? Select one; after answering go to question 54:

- a. 1 or 2
- b. 3 or 4
- c. 5 or more

53. What is the shortest distance between the evidence and the nearest waterbody? Select one:

- a. ≤10 feet
- b. >10 to 50 feet
- c. >50 to 100 feet
- d. >100 feet

54. For all of the occurrences of erosion and sedimentation observed within the area you identified in question 51, what is the evidence? Select all that apply:

- a. Traceable evidence to the waterbody, but not currently visible in the waterbody
- b. Turbidity present
- c. Evidence of localized sediment deposition in the waterbody
- d. Changes to substrate composition
- e. Changes to channel morphology
- f. Bank instability or bank undercutting
- g. Bank trampling or compaction
- h. Vegetation damage or bare ground
- i. Sheet erosion
- j. Rill erosion
- k. Gully erosion
- l. Headcutting
- m. Slumping/slips
- n. Mass wasting
- o. Sediment plumes or accumulations
- p. Sediment in sediment traps (straw bales, silt fence, etc.)
- q. Rutting
- r. Water quality monitoring results
- s. Other (specify):

55. What are the sources? Select all that apply:

- a. Developed camping or day-use site
- b. Forest Service-created trail
- c. User-created trail
- d. Road or parking area
- e. Other (specify):

56. What are the causes? Select all that apply:
<ul style="list-style-type: none"> a. Use is exceeding carrying capacity of the site and/or trails b. Inappropriate location of campsites c. Lack of campsite maintenance d. Inappropriate location of trails e. Inappropriate trail design f. Lack of trail maintenance g. Insufficient number of trails to the AMZ or waterbody h. Too many trails to the AMZ or waterbody i. Runoff from open water valves, spigots or other plumbing sources, or plumbing leaks j. Runoff from roofs, or roof gutters and downspouts k. Runoff from road or parking area l. Other (specify):
m. Unknown
57. What evidence of trash or domestic animal or human sanitary waste exists on or along the trails that connect the developed site to AMZs or waterbodies? Select all that apply:
<ul style="list-style-type: none"> a. No evidence (go to question 59) b. Evidence of trash outside an AMZ (go to question 58) c. Evidence of trash within an AMZ (go to question 58) d. Evidence of trash in a waterbody (go to question 58) e. Evidence of domestic animal or human sanitary waste/toilet paper outside an AMZ (go to question 58) f. Evidence of domestic animal or human sanitary waste/toilet paper within an AMZ (go to question 58) g. Evidence of domestic animal or human sanitary waste/toilet paper in a waterbody (go to question 58)
58. What are the causes? Select all that apply:
<ul style="list-style-type: none"> a. Insufficient number of waste receptacles b. Waste receptacles not emptied frequently enough c. Use is exceeding carrying capacity of the site and/or trails d. Insufficient number of toilet facilities e. Toilet facilities are not functioning properly f. Inconsiderate human actions g. Other (specify):
59. How many trails were reviewed in this evaluation?
60. How many of the trails that were reviewed were user created?
61. What is the total length of trails evaluated? (ft or m; specify unit):
62. What is the total length of the user-created trails evaluated? (ft or m; specify unit):
63. What evidence of chemical or fuel spills or leaks or associated waste containers exists at the site? Select all that apply:
<ul style="list-style-type: none"> a. No evidence b. Evidence of chemical or fuel spills or leaks outside an AMZ c. Evidence of chemical or fuel spills or leaks within an AMZ d. Evidence of chemical or fuel spills or leaks in a waterbody e. Evidence of chemical or fuel waste containers outside an AMZ f. Evidence of chemical or fuel waste containers within an AMZ g. Evidence of chemical or fuel waste containers in a waterbody
64. Did any of the unresolved maintenance needs for this developed recreation site contribute to any observed problems? Select one:
<ul style="list-style-type: none"> a. Not applicable, no unresolved maintenance needs existed for this recreation site b. Yes c. No
65. If inspections were not conducted at critical times during this operating season, did the lack of administration contribute to observed problems? Select one:
<ul style="list-style-type: none"> a. Not applicable, inspections were conducted at critical times b. Yes c. No
66. If the site was closed, use was restricted, and/or treatments were applied during the past 5 years to protect or restore water, aquatic, or riparian resources, were the desired results achieved? Select one:
<ul style="list-style-type: none"> a. Not applicable; no site closures, use restrictions, or treatments applied during the past 5 years b. The desired result was fully achieved c. The desired result was partially achieved d. Essentially no improvement to the site was achieved e. Too soon to determine

69. Are any corrective actions needed to improve effectiveness? Select one:

- a. Yes (go to question 68)
- b. No (go to question 69)

70. Provide information about corrective actions needed to improve effectiveness, and reference the question number to which each correction applies.

(67) A pedestal grill located in one campsite (#7) lies within the SEZ buffer as described in the state Lahontan Regional Water Quality Control Board Basin Plan; i.e. for confined intermittent streams with the adjacent slope in good condition the buffer should be 15 feet. The pedestal grill is located within 5 to 10 feet of the edge of stream currently.

71. Are any adaptive management actions needed to improve effectiveness? Select one:

- a. Yes (go to question 70)
- b. No (go to question General Comments)

72. Provide information about adaptive management actions needed to improve effectiveness, and reference the question number to which each action applies. Go to General Comments after answering this question.

See 68.

73. **General Comments**

none

AqEco A. Construction of Aquatic Ecosystem Improvements

(Includes BMPs AqEco-1, AqEco-2, AqEco-3, AqEco-4, Fac-2, Fac-6, Fac-10, Road-5, and Road-9)

DRAFT v1.0 March 2013

Header DISREGARD YELLOW HIGHLIGHT ON THIS FORM

1. Type of review being performed. Select one:		2. If current review is for an initial evaluation of effectiveness only, what was the date of the implementation review for this site?	
Implementation	Effectiveness	3. If current review is a follow-up evaluation, what was the date of the most recent evaluation?	
Follow-up Implementation	Follow-up Effectiveness		
		4. Date of current field evaluation: July 27th, 2013	
5. If this is a follow-up evaluation, describe all of the corrective actions that were applied to protect or improve water quality since the initial evaluation:			
6. If this is a follow-up evaluation, describe all of the adaptive management actions that were applied to protect or improve water quality since the initial evaluation:			
7. Reviewers and Titles:			
Theresa Cody- Project Leader/Hydrologist Barret McMurtry- Engineer, COR & Inspector Stephanie Heller- Asst. Project Leader/Hydrologist David Immecker – Monitoring Crew/Hydrologist			
8. Region number:	9a. Proclaimed Forest or Grassland number and name:	10. District number and name:	
	19- LTBMU		
	9b. Administrative Forest or Grassland number and name:		
11a. Reason for monitoring. Select all that apply:			
<input checked="" type="checkbox"/> WO/RO Targets <input type="checkbox"/> Land Management <input type="checkbox"/> Project Review <input type="checkbox"/> Quality Assurance <input type="checkbox"/> Other (specify): <input checked="" type="checkbox"/> Plan Monitoring			
11b. Was the project/site selected following the procedures described in the National BMP Monitoring Protocols?			
a. Yes b. No If No, describe the procedures used to select the project/site:			
12. 6 th level HUC number and name for the subwatershed this improvement is in:			
160501010101 Upper Truckee River			
13. Is any part of the project located within a municipal watershed? Select one: No			
14a. Location. UTM Zone: UTM Datum:	14b. Location. Easting:	14c. Location. Northing:	15a. Location. Latitude: 119 59'59.742"
			15b. Location. Longitude: 38 52'49.475"
			15c. Location. Lat/Long Datum: NAD 83
16. Conditions during the 24 hours before the field evaluation. Select all that apply:			
<input checked="" type="checkbox"/> Rain the ground <input type="checkbox"/> Snow <input type="checkbox"/> Snowpack on snow <input type="checkbox"/> Melting sleet <input type="checkbox"/> Hail/ <input type="checkbox"/> Freezing rain/ freezing fog <input type="checkbox"/> Other (specify): <input type="checkbox"/> Unknown			
17. Name of improvement or construction project:		18. Date that ground-disturbing work for the project began:	
Upper Truckee River Reach 5 Restoration Project – during Temporary bridge and access road installation		6/20/2013	
19. Is any of the improvement located on a floodplain? Select one:			
a. Yes (go to question 20) b. No (go to question 22)			
20. Length of floodplain disturbed by the improvement (ft, m, mi, or km; specify unit):		21. Area of floodplain disturbed by improvement (ac or ha; specify unit):	
550 feet		7,700 square feet	

22. Is any of the improvement located within a waterbody? Select one:

a. Yes (go to question 23)
b. No (go to question 24)

23. If lotic system, provide length of the waterbody disturbed (ft, m, mi, or km; specify unit); if lentic system provide area of waterbody disturbed (ft², m², ac, or ha; specify unit):

24. Type of waterbody being improved/constructed or type adjacent to the floodplain being improved. Select all that apply:

Stream/river Pond Lake Wetland/wet meadow Estuary Other (specify):

25. Project objectives. Select all that apply:

Aquatic habitat improvement/restoration Fish passage improvement Riparian vegetation Stream/river channel improvement Bank stabilization Wetland/wet meadow construction Other (specify):

26. Method used to accomplish project. Select one:

Service contract Construction contract Stewardship contract Force account Other (specify):

27. Which features or activities exist or are in use at the time of this evaluation? Select all that apply:

a. Temporary access routes for project implementation
b. Excavation
c. Equipment storage
d. Revegetation
e. Physical erosion control measures (e.g., matting, netting, silt fence)
f. Channel realignment
g. Mechanical streambank or shoreline treatments
h. Nonmechanical streambank or shoreline treatments
i. In-channel or in-waterbody structural treatments
j. Other (specify): **installation of temporary bridge**

56. Implementation

28. What type of NEPA analysis was completed for this project? Select one:

a. Not applicable, no NEPA analysis was completed (go to question 30)
b. Environmental Impact Statement (EIS) (go to question 29)
c. [Redacted]
d. Categorical Exclusion (CE) (go to question 29)

29. Indicate if provisions to protect water, aquatic, and riparian resources in the list below from the decision document were included in the project contract or plan. Select one response in each line. Select "Not applicable" for provisions that were not included in the decision document.

a. Timing and scheduling of improvements	<input checked="" type="checkbox"/>	No	Not applicable
b. Location of access routes for vehicle travel	<input checked="" type="checkbox"/>	No	Not applicable
c. Construction techniques for access routes	<input checked="" type="checkbox"/>	No	Not applicable
d. Placement and storage of excavated materials	<input checked="" type="checkbox"/>	No	Not applicable
e. Construction methods to reduce disturbance, erosion, or sedimentation	<input checked="" type="checkbox"/>	No	Not applicable
f. Location and/or limiting the extent of floodplain disturbances	<input checked="" type="checkbox"/>	No	Not applicable
g. Location and/or limiting the extent of waterbody disturbance	<input checked="" type="checkbox"/>	No	Not applicable
h. Waterbody stabilization techniques	<input checked="" type="checkbox"/>	No	Not applicable
i. Dewatering requirements	<input checked="" type="checkbox"/>	No	Not applicable
j. Temporary vegetative erosion control requirements	<input checked="" type="checkbox"/>	No	Not applicable
k. Non-vegetative erosion control requirements (permanent or temporary)	<input checked="" type="checkbox"/>	No	Not applicable
l. Permanent revegetation establishment requirements	<input checked="" type="checkbox"/>	No	Not applicable
m. Other (specify): Installation of fish barrier during implementation	<input checked="" type="checkbox"/>	No	

30. Indicate if provisions to protect water, aquatic, and riparian resources in the list below that were included in the project contract or plan were implemented fully. Select one response in each line. If the provision exists in the project contract or plan and it was implemented fully, select "Yes". If the provision exists in the project contract or plan but it was not implemented fully, select "No". If the provision does not exist in the project contract or plan, or if it is too early in the construction period for the provision to have been implemented at the time of evaluation, select "Not applicable".

a.	Timing and scheduling of improvements	Yes	No	Not applicable
b.	Location of access routes for vehicle travel	Yes	No	Not applicable
c.	Construction techniques for access routes	Yes	No	Not applicable
d.	Placement and storage of excavated materials	Yes	No	Not applicable
e.	Construction methods to reduce disturbance, erosion, or sedimentation	Yes	No	Not applicable
f.	Location and/or limiting the extent of floodplain disturbances	Yes	No	Not applicable
g.	Location and/or limiting the extent of waterbody disturbance	Yes	No	Not applicable
h.	Waterbody stabilization techniques	Yes	No	Not applicable
i.	Downstream requirements	Yes	No	Not applicable
j.	Temporary vegetative erosion control requirements	Yes	No	Not applicable
k.	Non-vegetative erosion control requirements (permanent or temporary)	Yes	No	Not applicable
l.	Permanent revegetation establishment requirements	Yes	No	Not applicable
m.	Other provisions specified in question 29.m	Yes	No	Not applicable
n.	Other (specify): Fish barrier/net	Yes	No	Not applicable

For any provisions you answered "No", briefly explain how implementation is deficient:

A fish barrier net was installed, but was not installed in a stable channel location, and was left in place during a 2 day storm event that resulted in a substantial increase in flows (37 cfs to 90 cfs).

31. Were project inspections and/or contract administration during operations performed at critical times for addressing water quality issues? Select one:

- a. Not applicable, no inspections were performed
- b. Not applicable, work was conducted to avoid critical times
- c. Yes
- d. No

32. If problems occurred during improvement/construction that affected or potentially may have affected water, aquatic, or riparian resources, were corrective actions taken to reduce or eliminate the problems? Select one:

- a. No problems occurred so no corrective actions were needed
- b. Corrective actions were needed but not taken
- c. Corrective actions were needed and implemented

33. Were chemical or fuel spills or leaks that occurred during project activities handled/treated according to the contingency and emergency response plan? Select one:

- a. Not applicable, the Forest or Grassland has no contingency and emergency response plan
- b. Not applicable, no spills or leaks occurred during construction
- c. Yes, reported spills or leaks were handled/treated according to the contingency and emergency response plan
- d. No, reported spills or leaks were not handled/treated according to the contingency and emergency response plan

34. Are any corrective actions needed to improve implementation? Select one:

- a. Yes (go to question 35)
- b. No (go to question 36)

35. Provide information about corrective actions needed to improve implementation, and reference the question number to which each correction applies.

(30m) – Do not utilize fish nets during periods when stream flows are expected to increase substantially due to forecasted precipitation events. If fish nets have already been installed, remove until base flows have dropped to base flow levels. Select locations to install fish nets in the stream that are inherently stable and more resistant to erosion (i.e. adequate vegetation, rock, wood stability components).

36. Are any adaptive management actions needed to improve implementation? Select one:
- a. Yes (go to question 37)
 - b. No (go to question 38 if effectiveness is to be evaluated at this time; otherwise go to General Comments)
37. Provide information about adaptive management actions needed to improve implementation, and reference the question number to which each action applies. Go to question 38 if effectiveness is to be evaluated at this time; otherwise go to General Comments after answering this question.

See 36. Update design feature language to include these concepts for future NEPA documents.

57. **Effectiveness**

38. Are you evaluating construction or improvements within a waterbody? Select one:
- a. Yes (go to question 39)
 - b. No (go to question 48)
39. Within the area of disturbance, has water flowing through lotic systems or moving from lentic systems been controlled? Select one:
- a. Evaluation is being done prior to waterbody disturbance and the need for flow control (go to question 42)
 - b. No flow or water present so control or diversion was not needed (go to question 42)
 - c. Flow was completely controlled or diverted around construction or improvement area (go to question 40)
 - d. Flow was largely controlled or diverted, with some seepage present (go to question 40)
 - e. Flow was marginally controlled, with some flow passing through disturbed area (go to question 40)
 - f. Flow was poorly controlled or uncontrolled (go to question 40)
 - g. Flow was not controlled because contract or plan did not require flow control (go to question 40)
40. Did flow diversion, lack of flow diversion, or poorly functioning diversion cause a violation of the water quality standard for turbidity? Select one:
- a. Not applicable, no water quality standard for turbidity
 - b. Yes
 - c. No
 - d. Unknown, turbidity not measured
41. Did flow diversion, lack of flow diversion, or poorly functioning diversion cause a violation of the water quality standard for sediment? Select one:
- a. Not applicable, no water quality standard for sediment
 - b. Yes
 - c. No
 - d. Unknown, sediment levels not measured
42. Is any of the in-waterbody improvement or construction being performed in a lotic waterbody? Select one:
- a. Yes (go to question 43)
 - b. No (go to question 45)
43. Is there visible evidence of increased turbidity at or downstream of the project activities? Select one:
- a. No flow in the channel
 - b. No evidence of turbidity increase
 - c. Turbidity from the operation is present, but extends less than 10 channel widths downstream of project activities
 - d. Turbidity from the operation is present, but extends less than 100 channel widths downstream of project activities
 - e. Turbidity from the operation is present and extends more than 100 channel widths downstream of project activities
44. Is there evidence of fresh sediment deposition in the waterbody at or downstream of the project activities? Select one:
- a. No evidence of fresh sediment deposition at or downstream of project activities
 - b. Fresh sediment deposition present, but extends less than 10 channel widths downstream of project activities
 - c. Fresh sediment deposition present, but extends less than 100 channel widths downstream of project activities
 - d. Fresh sediment deposition extends more than 100 channel widths downstream of project activities
45. Is any of the in-waterbody improvement or construction being performed in a lentic waterbody? Select one:
- a. Yes (go to question 46)
 - b. No (go to question 48)
46. Is there visible evidence of increased turbidity in the waterbody extending away from the project disturbance? Select one:
- a. Not applicable, no water in the waterbody
 - b. No evidence of turbidity increase
 - c. Turbidity from the operation is present, but spatial extent does not exceed that planned for the project
 - d. Turbidity from the operation is present, and spatial extent exceeds that planned for the project
 - e. Turbidity from the operation is present, but spatial extent of expected turbidity was not addressed in planning
47. Is there evidence of fresh sediment deposition in the waterbody at or extending away from the project disturbance? Select one:
- a. No evidence of fresh sediment deposition except at disturbed areas

- b. Fresh sediment deposition from operation is present, but spatial extent does not exceed that planned for the project
 - c. Fresh sediment deposition from operation is present, and spatial extent exceeds that planned for the project
 - d. Fresh sediment deposition from operation is present, but spatial extent of expected deposition not addressed in planning
48. Are you evaluating construction, improvements, or soil disturbance in the floodplain? Select one:
- a. Yes (go to question 49)
 - b. No (go to question 53)
49. Is there evidence of erosion or sedimentation originating from the floodplain disturbance? Select one; when multiple occurrences would yield different answers, select the most severe occurrence, with severity increasing from b to c.
- a. No evidence (go to question 53)
 - b. Evidence of erosion or sedimentation within the floodplain, but not reaching a waterbody (go to question 50)
 - c. Evidence of sediment transport to or deposition in a waterbody (go to question 50)
50. For all of the occurrences of erosion and sedimentation observed in the area you identified in effectiveness question 49, what is the evidence? Select all that apply:
- a. [redacted] visible in the waterbody
 - b. Turbidity present
 - c. Evidence of localized sediment deposition in the waterbody
 - d. Changes to substrate composition
 - e. Changes to channel morphology
 - f. Bank instability or bank undercutting
 - g. Bank trampling or compaction
 - h. Vegetation damage or bare ground
 - i. Sheet erosion
 - j. [redacted]
 - k. Gully erosion
 - l. Headcutting
 - m. Slumping/slips
 - n. Mass wasting
 - o. Sediment plumes or accumulations
 - p. Sediment in sediment traps (straw bales, silt fence, etc.)
 - q. Rutting
 - r. Water quality monitoring results
 - s. Other (specify):
51. What are the sources? Select all that apply:
- a. Reshaping/excavation
 - b. Temporary access routes
 - c. Permanent (pre-disturbance) access routes
 - d. Stockpiles or storage areas of excavated materials
 - e. Sediment trap
 - f. Other (specify): **Improperly installed fish net/barrier.**
[redacted]
52. What are the causes? Select all that apply:
- a. Overall poor location for project
 - b. Poorly located stockpiles of excavated materials
 - c. Oversteepened slopes
 - d. [redacted] insufficient soil cover (includes geotextiles, gravel, rock/riprap, vegetation, etc.)
 - e. Lack of, or insufficient water control on access routes
 - f. Improperly designed erosion control treatments
 - g. Operating outside of allowable time periods (allowable schedules or weather conditions)
 - h. Operating outside of allowable soil conditions
 - i. Operations extending outside of designated project boundaries
 - j. Soil compaction
 - k. Mechanical additions of soil to the waterbody
 - l. Did not plan for/anticipate effects
 - m. Other (specify): **Improperly installed fish net during two day storm (.81 inches of rain total) , and anticipated erosion during 2 day storm.**
 - o. Unknown
[redacted]
53. What evidence of chemical or fuel spills or leaks or associated waste containers exists in the project area? Select all that apply:
- a. No evidence
 - b. Evidence of chemical or fuel spills or leaks in the project area, but outside a waterbody

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- c. Evidence of chemical or fuel spills or leaks in a waterbody
 - d. Evidence of chemical or fuel waste containers in the project area, but outside a waterbody
 - e. Evidence of chemical or fuel waste containers in a waterbody
54. If inspections were not conducted at critical times during operations, did the lack of administration contribute to observed problems? Select one:
- a. Not applicable, inspections were conducted at critical times, or activities were conducted to avoid critical times
 - b. Yes
 - c. No
55. Are any corrective actions needed to improve effectiveness? Select one:
- a. Yes (go to question 56)
 - b. No (go to question 57)
58. Provide information about corrective actions needed to improve effectiveness, and reference the question number to which each correction applies.

See 35

59. Are any adaptive management actions needed to improve effectiveness? Select one:
- a. Yes (go to question 58)
- No (go to General Comments)

60. Provide information about adaptive management actions needed to improve effectiveness, and reference the question number to which each action applies. Go to General Comments after answering this question.

See 35

61. General Comments

All BMPs were implemented as designed, and most were effective, even during a two day storm event (.8 inches of rain total). The one exception was a deficient fish net installation that resulted in approximately 30 cubic feet of bank erosion (10'L x 1'D x 3'H), when stream flows increased from 37 cfs to 90 cfs during this event.