

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION**

**MEETING OF JULY 8 AND 9, 2009
South Lake Tahoe**

- ITEM:** 8
- SUBJECT:** **BLACKWOOD CREEK PHASE III STREAM AND FLOODPLAIN RESTORATION PROJECT – EXEMPTION TO A PROHIBITION CONTAINED IN THE WATER QUALITY CONTROL PLAN FOR THE LAHONTAN REGION (BASIN PLAN)**
- CHRONOLOGY:** **2001 and 2006:** Phases I and II of the Blackwood Creek restoration project are implemented by the U.S. Forest Service – Lake Tahoe Basin Management Unit (Forest Service). Waste discharge prohibition exemptions are granted by Water Board Executive Officer for floodplain disturbances and Clean Water Act section 401 Water Quality Certifications are issued.
- 2007:** Water Board adopted a Total Maximum Daily Load for Sediment in Blackwood Creek. The TMDL Implementation Plan relies on ongoing and planned restoration efforts by the Forest Service.
- 2008:** Phase III Blackwood Creek Restoration Project authorized. Waste discharge prohibition exemptions are granted by Water Board Executive Officer for floodplain disturbances and Clean Water Act section 401 Water Quality Certifications are issued.
- ISSUE:** Should the Water Board find the Blackwood Creek Phase III Stream and Floodplain Restoration (Project) meets the eligibility criteria for an exemption to a Basin Plan prohibition against the discharge of waste which causes violation of a numeric water quality objective?
- DISCUSSION:** The Forest Service began implementing the third and final phase of restoration activities in Blackwood Creek during the late summer of 2008. The Project involves approximately 30 acres of floodplain disturbance, and approximately 1.25 miles of in-channel stream disturbance to construct new channel segments, reshape existing degraded segments, and plug historic bulldozer-created side channels.

08-0001

The purpose of the Project is to restore channel stability, improve stream channel/floodplain connectivity, restore degraded riparian plant communities and aquatic habitat, and improve water quality in Blackwood Creek and its receiving water, Lake Tahoe. The inherent nature of such projects involving in-channel or floodplain construction activities can result in limited mobilization of fine sediment. This fine sediment may cause a short-term increase above natural turbidity levels in the creek, in violation of the Basin Plan numeric water quality objective for turbidity.

Section 4-1 of the Basin Plan contains a waste discharge prohibition against discharges which cause violation of numeric water quality objectives. Exemptions to this prohibition are allowed for restoration projects which meet certain criteria. Staff has provided information in the proposed resolution to demonstrate the Project meets the required criteria in the Basin Plan for exemptions to the prohibition.

**RECOMMEN-
DATION:**

Adoption of the Resolution as proposed.

Enclosures:

Proposed Resolution

ENCLOSURE 1

08-0003

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION**

**RESOLUTION NO. R6T - 2009 - (PROPOSED)
BLACKWOOD CREEK PHASE III
STREAM AND FLOODPLAIN RESTORATION PROJECT
(WDID # 6A090808005)
EXEMPTION TO A PROHIBITION CONTAINED
IN THE
WATER QUALITY CONTROL PLAN
FOR THE LAHONTAN REGION**

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WHEREAS, the California Regional Water Quality Control Board, Lahontan Region (Water Board) finds:

1. Blackwood Creek is located on the western side of the Lake Tahoe Basin, approximately four miles south of Tahoe City, in the North Tahoe Hydrologic Area (HA No. 634.20) as shown in Attachment A – Project Location Map. There is an extensive history of human disturbance in the Blackwood Creek watershed. Past activities included livestock grazing, logging, forest road construction, and in-stream gravel mining.
2. Blackwood Creek was identified as impaired by sediment on the 1990 Clean Water Act (CWA) section 303(d) list of impaired water bodies. Recent studies of Lake Tahoe tributaries found that Blackwood Creek contributes the largest volume of fine sediment per square mile of any of the lake's tributaries. Lake Tahoe is included on the CWA section 303(d) list for impairment due to fine sediment and nutrients. The Lake Tahoe Total Maximum Daily Load (TMDL) is scheduled for Water Board consideration in 2010.
3. In October 2007, the Water Board adopted Resolution R6T-2007-0027, approving a TMDL to address the sediment impairment in Blackwood Creek. In this action, the Water Board found that a multi-phase restoration plan for Blackwood Creek proposed by the US Forest Service – Lake Tahoe Basin Management Unit (Forest Service) would correct the sediment impairment; therefore, adoption of a separate, Water Board-developed TMDL Implementation Plan was not necessary.
4. The Forest Service has completed two of the three phases of the proposed restoration plan for Blackwood Creek: replacing a non-functional fish ladder with a boulder-step pool channel (2001); and installing a clear-span bridge to replace a culvert that blocked fish passage at the Barker Pass Road crossing (2006). The bridge installation included the reconstruction of about 250 lineal feet of channel.

08-0004

5. Implementation of the third and final restoration phase began in late summer 2008. The objectives of the Blackwood Creek Phase III Stream and Floodplain Restoration Project (hereinafter referred to as the Project) are to:
 - a) Develop stream channel and riparian areas that are dynamically stable with reduced stream bank erosion and improved water quality.
 - b) Provide floodplain connectivity to the stream channel to promote fine sediment deposition and peak flow carrying capacity.
 - c) Develop a range of aquatic habitats and associated riparian areas to improve and support the desired riparian ecosystem.
 - d) Restore geomorphic processes through removal of bedded sediments, channel modification, and/or re-vegetation.
6. The Project involves installing instream boulder/ log structures incorporating the locally-excavated terrace alluvium and river substrate as a growing media, constructing or reshaping stream channels to increase channel roughness and sinuosity, and constructing floodplain features to enhance habitat and to allow fine sediment trapping on the floodplain. The Project also includes planting and irrigating vegetation to restore floodplain roughness, stability, and sediment storage. The Project encompasses approximately 30 acres of floodplains and 1.25 miles of stream channels at two Project locations (Sites A and B).
7. Prior to Project implementation, the Forest Service obtained all required permits, including a National Pollutant Discharge Elimination System (NPDES) construction storm water permit, Clean Water Act section 401 Water Quality Certification (401 Cert), and an exemption to waste discharge prohibitions against discharge and disturbance in 100-year floodplains and Stream Environment Zones (SEZs) in the Lake Tahoe Hydrologic Unit.
8. During the 2008 construction period, the Forest Service completed approximately 25 percent of the work scheduled at Site A, including construction of one stream channel segment. Work scheduled for the 2009 construction season includes installation of temporary stream crossings, new stream channel construction or shaping, initiation of constructed stream channel flow, and diversion of flow away from the next segments of stream channel to be constructed. A total of three channel segments are planned for construction in 2009.
9. The Forest Service has developed a Storm Water Pollution Prevention Plan (SWPPP) for the Project, which contains detailed procedures for construction activities, temporary stream crossing installation and removal, channel dewatering and flow diversion, and flow initiation procedures to avoid, reduce or mitigate the amount of sediment that may be introduced into the stream channel during and following restoration activities.

10. The inherent nature of restoration projects that involve in-channel or floodplain construction activities will result in limited mobilization of fine sediment, primarily during flow initiation into the newly constructed stream channels. This fine sediment may cause a short-term increase above natural turbidity levels in the creek.
11. The Water Quality Control Plan for the Lahontan Region (Basin Plan) contains a numeric water quality objective for turbidity:

Increases in turbidity shall not exceed natural levels by more than 10 percent.

12. Data collected during the 2008 construction season by Forest Service staff indicate that Blackwood Creek's natural level of turbidity during construction at an upstream station typically varied between 0.2 to 1.25 Nephelometric Turbidity Units (NTUs). Due to these very low natural levels of turbidity, even a slight increase in fine sediment inputs to the creek during restoration activities could result in a violation of the numeric water quality objective for turbidity. For example, a measured increase in turbidity of only 0.02 to 0.125 NTUs would violate the numeric turbidity objective.
13. Section 4.1, Waste Discharge Prohibitions, of the Basin Plan states:

The discharge of waste which causes violation of any numeric water quality objective contained this Plan is prohibited.

14. The Water Board encourages restoration projects that are intended to reduce or mitigate existing sources of soil erosion, water pollution, or impairment of beneficial uses. For waste earthen materials discharged as a result of restoration projects, exemptions to the above prohibition (or any prohibition contained in the Basin Plan) may be granted by the Water Board whenever it finds that a specific project meets all of the following criteria:

(1) The project will eliminate, reduce, or mitigate existing sources of soil erosion, water pollution, and/or impairment of beneficial uses of water.

The purpose of the Project is to restore channel stability, improve stream channel/floodplain connectivity, restore degraded riparian plant communities and aquatic habitat, and improve water quality in Blackwood Creek and its receiving water, Lake Tahoe. Both Blackwood Creek and Lake Tahoe are listed as impaired due to excessive sediment. Implementation of the Project will mitigate existing erosion sources and impairment of beneficial uses (including cold freshwater habitat, spawning and reproduction, wildlife habitat, and non-contact water recreation) in Blackwood Creek and Lake Tahoe.

(2) There is no feasible alternative to the project that would comply with the provisions of the Basin Plan, precluding the need for an exemption.

The existing sources of soil erosion are located within the stream channel and floodplain terraces of Blackwood Creek. In order to eliminate, reduce, and mitigate these existing erosion sources, the Project must be implemented in these areas.

As stated in Finding No. 10, work involving connecting a newly-constructed stream channel to the existing channel, and the introducing flows to the new channel, will cause some turbidity in violation of the objective.

During the National Environmental Policy Act (NEPA) analysis for the Project, the Forest Service considered a "no action" alternative. The "no action" alternative would result in continued excessive bank erosion, and aquatic and riparian habitat would remain in its currently degraded condition indefinitely, resulting in continued impairment in Blackwood Creek and Lake Tahoe.

The Blackwood Creek TMDL estimates a 20-year timeframe for attainment of desired conditions. The Lake Tahoe TMDL "Clarity Challenge" estimates that in order to meet the 20-year lake clarity target, fine sediment particles from stream channels need to be reduced by approximately 53 percent from 2004 levels. Stream restoration activities are an integral part of the strategy to meet both the Blackwood Creek TMDL targets and the Lake Tahoe TMDL Clarity Challenge. Therefore, "no action" is not a feasible alternative.

No other "action" alternative can be constructed without causing some short-term turbidity increase.

(3) Land disturbance will be limited to the absolute minimum necessary to correct or mitigate existing sources of soil erosion, water pollution, and/or impairment of beneficial uses of water.

The Project involves approximately 30 acres of floodplain disturbance, and approximately 1.25 miles of in-channel stream disturbance to construct new channel segments, reshape existing degraded segments, and plug historic bulldozer-created side channels. The Project design was developed in part through hydrologic model simulations for a range of flows by modeling flood-stage elevations, flow velocity, and channel roughness for existing and proposed channel alignments and floodplain topography. The area of disturbance is that which meets the desired conditions for these characteristics which will result in attaining the project objectives.

Land disturbance during construction is limited to the minimum needed for construction equipment and personnel access, placement of temporary fill and rock stockpiles, tree harvesting, construction of rock/log and floodplain roughness elements, channel plugging and floodplain grading, direct channel construction and channel initiation, and installation and removal of diversions.

(4) All applicable Best Management Practices and mitigation measures have been incorporated into the project to minimize soil erosion, surface runoff, and other potential adverse environmental impacts.

Water Board staff has, and will continue to work closely with Forest Service staff to develop a rigorous, adaptive (i.e., amendable) Storm Water Pollution Prevention Plan (SWPPP) that describes Best Management Practices (BMPs) and mitigation measures to avoid, reduce or minimize adverse environmental impacts, particularly during critical in-channel dewatering, construction, and re-watering phases. The SWPPP also specifies maximum allowable creek flows (<5 cubic feet per second consistently over a one-week period) for ground-disturbing construction activities to commence. Specific procedures are outlined for the methods, timing, and monitoring of the following activities.

- Stockpile and staging areas, including the setup, operation, maintenance, and demobilization of material/equipment staging areas in the SEZ
- Temporary construction fencing
- Construction of access roads to and in the SEZ
- Temporary stream crossing installation and removal
- Channel dewatering and flow diversion techniques
- Installation of rock/log and floodplain roughness structures
- New channel construction
- Riparian transplants, planting, and irrigation
- Post-construction channel seasoning and phased flow initiation with intensive monitoring to ensure turbidity levels are reduced to the maximum extent practicable
- Monitoring and adaptive management

Prior to connecting flows from the newly constructed channel to the existing channel, turbidity levels of the water in the new channel must be monitored. In the event that turbidity levels are greater than 3 NTUs, pumps will be deployed to transfer turbid water to a sediment bag (a device used to filter and infiltrate flows into forest soils) at an upland location. This will occur for a maximum of three days, or until turbidity levels drop to less than or equal to 3 NTUs, whichever is sooner. If 3 NTUs is not reached after three days of pumping, pumping and infiltration will continue until decreases of turbidity greater than 25% of the previously measured turbidity are no longer being achieved and turbidity is less than or equal to 20 NTUs prior to releasing flows to the existing channel.

(5) The project complies with all applicable laws, regulations, plans, and policies.

According to the Decision Notice and Finding of No Significant Impact prepared by the Forest Service pursuant to NEPA, implementation of the Project does not threaten to violate any Federal, State, or local law or requirement.

As noted in Finding No. 7, above, prior to Project implementation, the Forest Service obtained all required permits from the Water Board, including the NPDES construction storm water permit, 401 Cert, and the applicable waste discharge prohibition exemptions.

(6) Application of additional criteria for Lake Tahoe Basin. (The Executive Officer previously made these findings in the Water Quality Certification Order and Notice of Applicability for this project. They are re-stated and updated here for completeness.)

For erosion control projects, habitat restoration projects, wetland rehabilitation, and Stream Environment Zone restoration:

- a) The project, program or facility is necessary for environmental protection.

This phase of the Project involves restoration actions to enhance the function of the creek and improve water quality as described in Finding Nos. 5, 6, and 14 (1), above. The project is necessary for environmental protection as described in Finding No. 14 (2), above.

- b) There is no reasonable alternative, including relocation which avoids or reduces the extent of encroachment in the Stream Environment Zone.

The Project is located within the stream channel and the 100-year floodplain, as well as the SEZ. The channel and flood plain will be re-worked and altered in order to provide stabilization, restore proper floodplain function, and improve water quality. The SEZ will be temporarily disturbed to increase floodplain roughness. There is no reasonable alternative to reduce SEZ encroachment, as described in Finding No. 14 (2), above.

- c) Impacts are fully mitigated.

Best Management Practices, described within the Project's SWPPP and construction plans, and as described in Finding No. 14 (4), above, will be in place during construction. The Project area will be re-vegetated using native vegetation. All impacts are fully mitigated through Project design features and BMPs.

The Project's impacts will be further mitigated by reducing erosion and sediment loading to Blackwood Creek and Lake Tahoe. The amount of fine sediment mobilization that is likely to occur during Project implementation is short-term, temporary, and substantially less than what has historically occurred in these very unstable reaches of Blackwood Creek. The Project has already significantly reduced both fine sediment erosion and fine sediment transport within the Blackwood Creek channel and floodplain, as evidenced by observations and photos taken during peak flow events during spring 2009. These observations show that fine sediment deposition occurred throughout large areas of newly constructed floodplain, ranging from a few inches to several feet in depth. This sediment would otherwise have remained within Blackwood Creek, and ultimately been delivered to Lake Tahoe.

15. The Forest Service circulated the Project's Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) for public comment between May 23, 2008 and June 30, 2008. The EA included a California Environmental Quality Act (CEQA, Public Resources Code Section 21000, et seq) equivalent checklist indicating that the Project would cause less than significant impacts with mitigation. Design features discussing these mitigation measures were included in Section 2 of the EA, and Forest Service provided additional details on these mitigation measures in its SWPPP and construction plans. The Water Board, acting as a CEQA Lead Agency, considered the EA and mitigation measures incorporated into the Project documents to reduce potentially significant water quality impacts to less than significant with mitigation. As a result of the analysis, the Water Board found, with the conditions required therein, the mitigation measures associated with the EA were adequate to reduce potentially significant water quality impacts to less than significant.

Additionally, in May 2003, the Water Board certified a Negative Declaration (ND) for Certain Types of Projects Conducted on Lands Administered by the US Forest Service-LTBMU. This Project falls within the types of projects included in this ND. The ND was processed in accordance with CEQA. Therefore, CEQA requirements for this project have been met.

16. The Water Board has notified the Project proponents and interested agencies and persons of its intent to adopt this Resolution.
17. The Water Board, in a public meeting, heard and considered all comments pertaining to the proposed activities and a proposed exemption to a prohibition in the Basin Plan.

08-0010

THEREFORE, BE IT RESOLVED THAT:

1. The Blackwood Creek Phase III Stream and Floodplain Restoration Project is a restoration project that is intended to reduce or mitigate existing sources of soil erosion, water pollution, or impairment of beneficial uses, and meets the eligibility criteria for an exemption to the Basin Plan waste discharge prohibition as outlined in Finding No. 14, above.
2. The Water Board hereby grants an exemption to the Basin Plan prohibition stated in Finding No. 13, above.

I, Harold J. Singer, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, Lahontan Region, on July 8, 2009.

HAROLD J. SINGER
EXECUTIVE OFFICER

Attachments: A. Project Area Map

ATTACHMENT A

08-0012

Attachment A - Project Location Map

