

US EPA ARCHIVE DOCUMENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

August 28, 2012

Nancy Gibson  
Forest Supervisor  
Lake Tahoe Basin Management Unit  
35 College Drive  
South Lake Tahoe, CA 96150  
Attn: Draft Land Management Plan

Subject: Draft Environmental Impact Statement for Lake Tahoe Basin Management Unit Draft Revised Land and Resource Management Plan, CA and NV, (CEQ# 20120168)

Dear Ms. Gibson:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (EIS) for the Lake Tahoe Basin Management Unit (LTBMU) Land and Resource Management Plan pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

The draft revised Land Management Plan (Forest Plan) proposes desired conditions, objectives, standards and guidelines for ecological, social, and economic sustainability. LTBMU lands encompass 154,000 acres of the Lake Tahoe region, which is about 78% of all lands in the Lake Tahoe Basin. The Forest Service's preferred alternative, Alternative B, does not significantly change the management course set in the 1988 Forest Plan, but does address more recent concerns such as climate change, and reflects current science and contemporary recreation demands.

Since the Forest Plan will likely not be amended again for many years, it is essential that this revised Plan incorporate efforts to reduce fine sediment and nutrient loads consistent with the technical information developed to support the Lake Tahoe Total Maximum Daily Load (TMDL) adopted by the States and approved by EPA, in 2011. EPA commends the Forest Service and Lahontan Regional Water Quality Control Board for their efforts to address fuel loads and forest health in the wildland-urban interface. Of note are the design measures and best management practices included in the Forest Plan strategies to reduce adverse impacts and meet soil, watershed and water quality, and wildlife, fisheries, and aquatic habitat objectives. The intent of our comments is to ensure that the Forest Plan is both effective and consistent with efforts to restore the historic clarity of Lake Tahoe, including the requirements of the TMDL for reducing loadings of fine sediment particles and nutrients into the Lake.

We have rated the Draft EIS as Environmental Concerns – Insufficient Information (EC-2) (see enclosed "*Summary of Rating Definitions*") due to our concerns regarding TMDL implementation and water quality monitoring (identified in the attached Detailed Comments). In light of these concerns, we recommend the Forest Service include strong and specific language to ensure TMDL load reduction targets are met, as well as emphasize load reduction in the monitoring plan and consider modeling specific project impacts. Although we acknowledge that some water quality concerns will be addressed

on a project-by-project basis, we believe a holistic monitoring effort will best ensure that the Forest Plan will help attain the Plan's objective of achieving LTBMU's load reduction targets (Objective 1, Draft LMP, Vol II, p. 48).

Please note that starting October 1, 2012, EPA Headquarters will not accept paper copies or CDs of EISs for official filing purposes. Submissions on or after October 1, 2012 must be made through EPA's new electronic EIS submittal tool: *e-NEPA*. To begin using *e-NEPA*, you must first register with EPA's electronic reporting site - [https://cdx.epa.gov/epa\\_home.asp](https://cdx.epa.gov/epa_home.asp). Electronic filing with EPA Headquarters does not change the requirement to submit a hard copy to the EPA Region 9 Office for review.

We appreciate the opportunity to review this Draft EIS. When the Final EIS is released for public review, please send one hard copy and one CD to the address above (mail code: CED-2). If you have any questions, please contact me at (415) 972-3521, or contact Stephanie Skophammer, the lead reviewer for this project. Stephanie can be reached at (415) 972-3098 or [Skophammer.stephanie@epa.gov](mailto:Skophammer.stephanie@epa.gov)

Sincerely,

/s/ Jason Gerdes for

Kathleen Martyn Goforth, Manager  
Environmental Review Office  
Communities and Ecosystems Division

Enclosures: Summary of Rating Definitions  
Detailed Comments

cc: Patty Z. Kouyoumdjian, Lahontan Water Board  
Doug Cushman, Lahontan Region, CA Regional Water Quality Control Board  
Mike Vollmer, Tahoe Regional Planning Agency  
Jason Kuchnicki, Nevada Division of Environmental Protection

**Access and Travel Management**

In the Access and Travel Management (ATM) section, it is unclear the extent to which the new and expanded administrative roads required to implement fuels reduction/wildfire prevention projects are to be included (p. 3-12). On p. 3-482, the Draft EIS states that roads of vegetation management projects constitute the most significant risk to water quality from those projects. Is the management (including implementation and maintenance of BMPs and/or design measures) and de-commissioning or obliteration of such roads considered a part of the ATM program? If so, this should be explicitly stated and sufficient program resources should be allocated to achieve the Total Maximum Daily Load (TMDL) and Land Management Plan (Forest Plan) objectives of no increased loading from subwatersheds in which fuels reduction projects are implemented (over the life of the plan).

There is minimal connection to the specific ATM objectives set forth in the Forest Plan. For example, a strategy indicated in the plan states that “road management decisions are prioritized based upon public benefit and ability to eliminate deferred maintenance” (DEIS, Vol II, p.66). What are the consequences for deferring maintenance on forest access roads for fuel management projects? The consequences of these strategies should be explored in the Draft EIS in the ATM section.

The discussion in Sec. 3.4.1.3, Environmental Consequences of Vegetation & Fuels Management (p. 3-20) does not adequately address the potential impacts of new, expanded and more intensively used roads as a result of fuels reduction projects, particularly under Alternative C which includes a greater emphasis on mechanical thinning. What kind of monitoring of project impacts will be conducted, what triggers will be used to determine whether increased loading is occurring, and what mitigations will be employed to address this impact?

If insufficient resources and attention are devoted to internalizing mitigation measures into fuels projects, it is likely that costly retrofitting, rehabilitation and restoration work at a later time (but likely within the planning horizon) will be necessary to achieve TMDL load allocations, which not only call for no net load increases in every forest uplands subwatershed, but an overall 12% reduction in fine sediment loading (p. 3-485) from the vegetated land use category within 15-20 years.

***Recommendation:***

Please clarify what roads and trails are in the ATM plan and identify the roads and trails that may be a part of fuels treatment projects.

Please include projections for the miles of roads and trails that will be added as a result of Alternative B. If this is quantified somewhere else in the document, please reference it here. If these are linked to the objectives, please state the objectives more clearly here (p. 66 of the Forest Plan).

If any miles of roads or trails are added as a result of fuel reduction targets that are presented in this plan, please discuss how they will or will not be managed so as to contribute to meeting the 12% reduction in fine sediment loading for the Basin.

## Water Quality

### *Fine Sediment Loads*

The proposed Forest Plan revision must acknowledge the need to significantly reduce anthropogenic loads from all LTBMU sources. The Forest Plan revision should specify actions for aggressively treating LTBMU lands to ensure the forest upland sources, on a basin wide scale, reduce fine sediment pollutant loads by 12 percent within twenty years and ultimately by 20 percent overall. The LTBMU's urban land uses must significantly reduce loads in addition to reduced loads from the forested uplands.

EPA is pleased to see that Objective 2 discusses specific water quality objectives of the Forest Plan including 95% implementation of BMPs and the goal to achieve load reduction targets (DEIS, Vol II, p. 48). The Forest Plan must be amended to include a requirement for the LTBMU to develop and implement a plan for *how* to achieve the 20-year pollutant load reduction targets. The plan should also include measures to reduce loads from discrete disturbances on the forested landscape (e.g. roads, ski runs, fuels management projects) as well as address pollutant loads from stream channel reaches managed by the LTBMU. EPA joins with staff from the Lahontan Water Board in looking forward to working with LTBMU staff to develop a viable pollutant load reduction plan and reporting component, and in offering our support to the LTBMU in evaluating and reporting on annual accomplishments toward meeting load reduction needs.<sup>1</sup>

#### ***Recommendations:***

The Forest Plan revision should specify actions for aggressively treating LTBMU lands to ensure the forest upland sources, on a basin wide scale, reduce fine sediment pollutant loads by 12 percent within twenty years and ultimately by 20 percent overall.

The Forest Plan should include a requirement for the LTBMU to develop and implement a plan for achieving the 20-year pollutant load reduction targets. The plan should also include measures to reduce loads from discrete disturbances on the forested landscape (e.g. roads, ski runs, fuels management projects) as well as address pollutant loads from stream channel reaches managed by the LTBMU (see also first comment under "Monitoring" below).

### *TMDL Load Quantification*

The Forest Plan articulates a long term vision for LTBMU and a framework for achieving it. As such, EPA considers one of the most significant objectives over the coming 15-20 years to be quantifying the impacts of management actions on pollutant loads to surface waters in the Lake Tahoe Basin, particularly fine sediment and nutrient loads to the Lake and its tributaries. As required by the 2011 Lake Tahoe TMDL, this quantification will help ensure that all TMDL loads and achievement of load and wasteload allocations are tracked and accounted for. Significant resources have been invested in developing tools and protocols to achieve this objective, and EPA considers that, over the life of the Forest Plan, a strategy of targeted and gradually more comprehensive implementation of load quantification is both feasible and necessary.

The Draft EIS states that TMDL milestones are analyzed using, among other indicators or tools, BMPEP scores and WEPP analysis (p. 3-467). A recent study conducted by the Lahontan RWQCB and EPA, entitled: "Modeling Report: Lake Tahoe Fuels Reduction Strategy," (Tetra Tech, March 30, 2012),

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<sup>1</sup> December 5, 2008 letter from Harold Singer, Executive Officer, California Regional Water Quality Control Board, Lahontan Region; to Terri Marceron, Forest Supervisor, Lake Tahoe Basin Management Unit.

employed WEPP in conjunction with the TMDL’s Watershed Model (LSPC) to estimate potential sediment loading impacts from implementation of the Multi-Agency Fuels Reduction Strategy.

The analysis, which was based on LTBMU’s WEPP modeling of the Ward Unit 5, Heavenly SEZ and Roundhill projects, showed that implementation of the Fuels Reduction Strategy could have the following impacts on total and fine sediment loading as compared with the estimated TMDL baseline forest upland load:

**Table 7-2. Lake Tahoe Watershed Model Sediment Loads for the Baseline and Implemented Fuels Strategy Conditions**

Project area	Sediment load (tons/yr)			Percent change (Total sediment load)		Percent change (Fine sediment load <sup>1</sup> )	
	Baseline	Literature	Revised	Literature	Revised	Literature	Revised
South Shore Project	155	190	312	+22.2%	+101.2%	+0.09%	+0.15%
Basinwide Projection	18,172	20,957	24,637	+15.3%	+35.6%	+10.1%	+11.7%

1: Fine sediment is defined as particles less than 16 micrometers in diameter.

The 12% potential increase in FSP loads as a result of implementing the basin-wide fuels strategy (which is largely due to the use of mechanized treatments such as whole tree skidding) contrasts with the 12% reduction required by the TMDL by 2026 (6% reduction is required by 2016 and 9% by 2021; see Table 10-1 of the Lahontan RWQCB TMDL Report).

EPA acknowledges the analysis used conservative assumptions and that there are uncertainties regarding the extrapolation from small-scale WEPP modeling to a basin-wide analysis. However, the results of this study underscore the need for greater attention to be paid to measuring total and fine sediment loading impacts from fuels reduction projects than has been the case to date and is committed to in the Draft EIS. It is encouraging to see the statements on p. 3-471 that “USFS will be required to report annually on actions taken to achieve TMDL milestones” and that “the Forest ... will continue to adapt its monitoring program to provide better information to inform and validate the parameters used in the TMDL model related to Forest Management activities.”

Furthermore, the discussion of road and trail monitoring and modeling on p. 3-473 – 3-474 demonstrates the feasibility of conducting an analysis that both quantifies sediment loading and identifies the most sensitive places and cost-effective efforts (largely to reduce hydrological connectivity) to achieve further load reductions. Given that the Tetra Tech report cited above concludes that the management efforts most likely to cause TMDL load increases are roads and landings associated with mechanized thinning, especially whole tree skidding, and the relatively limited occurrence of this practice currently planned, it appears that monitoring and modeling efforts should be focused here, with the objective of producing a similarly comprehensive analysis to the Forest’s 2007 evaluation of road and trail retrofits implemented from 2003-2005.

**Recommendations:**

The Final EIS should discuss how roads and landings associated with fuel reduction projects will be monitored and modeled to achieve TMDL targets.

The final Forest Plan should include a requirement for LTBMU to develop a monitoring and modeling plan in order to, by the end of the planning period (20 yrs), comprehensively quantify TMDL loads from LTBMU lands (forested and urban) since 2004. See “Monitoring and Modeling of SEZ Restoration Projects” and “LTBMU Urban Facility Stormwater Loading” sections below for additional comments concerning comprehensive TMDL tracking and accounting.

## *Erosion and Nutrients*

In the discussion of nutrient loading from forested non-urban sources—which are proportionately double (for nitrogen, 18%) and nearly three times (for phosphorus, 32%) the relative contribution of forested areas to fine sediment loading (9%)—it should be stated that nearshore water quality is likely more affected by nutrients than by fine sediment, and therefore greater measures to reduce nutrient loading may be necessary to protect nearshore water quality than may be required to achieve desired pelagic lake clarity conditions.

### ***Recommendations:***

The Final EIS should discuss the measures that may be necessary to reduce nutrient loading from forested non-urban areas.

The final paragraph of page 3-479 states that stream channel erosion represents 2% of the total baseline fine sediment load to Lake Tahoe presented in the TMDL; the correct value is 4% (TMDL Report, p. 7-3).

EPA agrees with the statement that “Current TMDL targets [presumably of the Blackwood Creek bedded sediment TMDL] also need to be incorporated into the new Forest Plan,” but seeks clarification on how this will be done (p. 3-480).

## *Monitoring and Modeling of SEZ Restoration Projects*

The list of SEZ restoration projects implemented since 2002 is impressive (though not complete in terms of acres treated by the final four projects) (p. 3-479). Furthermore, the monitoring described shows that these projects are being adaptively managed to maximize their effectiveness. EPA recommends that project monitoring and analysis of available ambient water quality data, especially for projects implemented since 2004, should have as an additional objective the estimation/quantification of TMDL loading impacts of those projects. Tools such as the Stream Load Reduction Tool have been developed to add rigor to these estimates, and should be employed where feasible. Although load reductions from the Blackwood, Ward and Upper Truckee River mainstem projects are assumed to be part of the baseline TMDL Implementation Plan, reductions from other projects may be considered to achieve benefits not incorporated in the Plan, and therefore may represent offsets for possible load increases from other sources on LTBMU lands. Such considerations, if backed by a sufficiently rigorous analysis, should be discussed with TMDL management agencies. EPA would be pleased to participate and assist in these discussions.

### ***Recommendation:***

EPA recommends that project monitoring and analysis of ambient water quality data should have an additional objective incorporated into the Forest Plan for the estimation and quantification of TMDL loading for those projects.

On page 3-472, the Draft EIS describes soil erosion monitoring through the BMPEP. Although self-monitoring is a welcome addition, it does not represent the only source of information concerning LTBMU BMP deployment and effectiveness. External information sources such as that provided in Lahontan RWQCB Notices of Violation (NOVs) should also be included. The number and seriousness

of NOVs represents another (more independent) means of evaluating the performance over time of LTBMU's BMP program.

***Recommendation:***

External information sources for soil erosion monitoring should also be included.

EPA appreciates and agrees with the discussion of vegetation management, stream restoration, and their relationship to TMDL implementation, including reporting and tracking (p. 3-485). We request that the Forest Service provide further details concerning how monitoring will inform TMDL reporting and tracking, specifically how it can provide estimates of model parameters that may be used to quantify TMDL loading values associated with actions taken to address these two source categories.

***Recommendations:***

The Final EIS should provide further details concerning how monitoring will inform TMDL reporting and tracking.

**Watersheds**

EPA appreciates the informative discussion of HUC 6 and 7 watershed conditions in Sec. 3.4.24 (p. 3-498). We also appreciate the Forest Service's goal that "...at the programmatic scale all the alternatives propose actions that would maintain or improve current watershed condition ratings" (p. 3-499). This is predicated on the assumption that BMPs are fully implemented and effective, which even LTBMU's BMPEP has shown is not always the case. The current Regional and Forest target is 100% implementation of BMPs and 90% effectiveness ratings (p. 3-473).

LTBMU's watershed condition assessments should be coordinated with implementation of the California Rapid Assessment Methodology (CRAM) currently under development, to avoid duplication. EPA appreciates mention in the Draft EIS of CRAM (p. 3-531), and considers that there may be synergies between these two programs that should be explored by the respective agencies implementing them.

***Recommendations:***

Our suggested addition to Sec. 3.4.21[sic].2 is to the discussion of Heavenly Valley Creek on p. 3-498. This discussion should refer to the Heavenly Valley Creek TMDL, and the status of implementation.

Measures that will improve the rate of BMP implementation and effectiveness to 100% in both categories should be proposed and included in the Forest Plan.

The watershed condition assessments should be coordinated with implementation of the CRAM.

The discussion of cumulative water quality and watershed condition effects should be updated to reflect the 2011 TRPA Threshold Evaluation that is now available (<http://www.trpa.org/default.aspx?tabid=174>), although the updated information may not materially affect the conclusions reached concerning threshold attainment (p. 3-529).



### **LTBMU Urban Facility Stormwater Loading**

Although not described in the Forest Plan or its Draft EIS, LTBMU's urban facilities, including administrative and recreational structures, contribute to the Lake Tahoe TMDL urban stormwater source category load. These facilities—including, as appropriate, the catchments in which they occur--should be analyzed and TMDL pollutant loading from them should be provided to the appropriate local stormwater jurisdictions at some point during the 15-20 year planning horizon. The Lake Clarity Crediting Program (LCCP) provides the tools (including the Pollutant Load Reduction Model and associated BMP and Road Rapid Assessment Methodologies) to conduct this analysis. Ideally, affected urban stormwater jurisdictions should take the lead in identifying catchments that include LTBMU facilities for priority analysis, and LTBMU's analysis should be coordinated with the LCCP work being conducted by those jurisdictions.

The optimal approach would be for the LTBMU to develop an urban-focused stormwater management plan for its developed areas in cooperation with affected public and private stakeholders. Developed, urbanized areas within the LTBMU jurisdiction likely include campgrounds, visitor areas, maintenance yards, and other facilities where impervious coverage exceeds one percent. The LTBMU stormwater master plan would ideally describe projects and activities (both completed and planned) needed to reduce pollutant loading from these urban stormwater runoff sources.

#### ***Recommendation:***

In the Final EIS, EPA recommends that the Forest Service discuss how management of LTBMU's urban facilities will contribute to achievement of the Lake Tahoe TMDL urban stormwater source category wasteload allocations.

### **Air Quality**

We recognize the challenge the Forest Service faces by implementing a management plan that will rely heavily on prescribed burns and other fuel management activities to achieve restoration objectives. We understand the predicament Forest Service is in regarding balancing short and long-term impacts related to air quality and the pollutant and air toxics emissions.

Pages 3-61 through 3-65 quantify and compare the emissions from prescribed fire and wildfire. However, this section is very unclear and appears disconnected from the analysis in Fire and Fuels section (3.4.10) and Forest Vegetation section (3.4.11). Page 3-61 states that "emissions are projected through five periods with each period consisting of ten years" but the next sentence reads, "the analysis focuses on emissions from the first period of 10 years under each alternative." There is no reference to which projects are projected to be implemented for the analysis, for example, are fuel reduction activities from the South Shore project included in this comparison? How is this related to the Forest Plan objective that LTBMU reach a goal of prescribed burning of 1,800 acres per year in the wildland urban interface (Objective 6, DEIS, Vol II, p. 51).

The prescribed burning total pollutant emissions are almost twice that of wildfire according to the tables (table 3-13 and table 3-14) although may be one fifth according to the figures (p. 3-61, figure 3-20 and 3-21). What assumptions are inherent in this study? Does this assume fuels treatments are effective? More discussion is warranted to explain the discrepancy in figures and tables.

***Recommendation:***

We recommend that the Forest Service implement BMPs and work with the interagency Smoke Management Group to reduce emissions from prescribed burns and wildfires to the greatest possible extent and incorporate this into specific objectives in the Forest Plan. If these are in the Forest Plan, then they should be described completely and accurately in the Air Quality section of the EIS.

Please clarify why prescribed burning emissions are between about twice to over four times that of wildfire emissions. Clarify the discrepancy between the tables and figures, and provide further information regarding the assumptions and data that are used to derive the conclusions.

EPA is encouraged by the mitigation measures mentioned on pages 3-35 and 3-36 regarding biochar and black carbon. Research on low temperature pyrolysis to make biochar has shown it to be an effective measure in improving the structure and fertility of soils and may decrease fertilizer runoff (p. 3-36) and it is important for the Forest Service to consider the feasibility of such measures in the future. EPA could not find where biochar and the other technologically emerging mitigation measures are mentioned as an objective, strategy, or design criteria in the Forest Plan.

***Recommendation:***

Consider how mitigation measures for black carbon and greenhouse gases can be incorporated into the Forest Plan.

**Grazing and Rangeland Health**

Grazing use can significantly affect the functional condition of wetland and riparian areas over the long term by increasing erosion, compaction, sedimentation, and runoff rates. These impacts lead to changes in channel geomorphology and water quality, including increases in temperature, nutrients, fecal coliform, total suspended solids, turbidity, and other contaminants. Grazing is not mentioned in the Forest Plan. The Draft EIS lacks a discussion of grazing allotments in the LTBMU including the Baldwin grazing allotment.

***Recommendation:***

If it is still occurring, the Forest Service should vigorously manage grazing, especially in riparian and wetland areas that are functioning at risk in a static or downward trend in order to facilitate their recovery. If necessary, please discuss and incorporate protection measures and management actions in the Final Forest Plan/EIS.