



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

Ms. Dorothy Rice
Executive Director
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100

Dear Ms. Rice:

Thank you for submitting the total maximum daily loads (TMDLs) to address sediment in the Middle Truckee River Watershed. The submittal was received on April 30, 2009 and supplemental information was received July 21, 2009. The Lahontan Regional Water Quality Control Board (Regional Board) adopted the TMDLs to address sedimentation/siltation in three waterbodies: Truckee River (between the outlet of Lake Tahoe and the California/Nevada state line), Gray Creek and Bronco Creek, as identified on the State of California's 2006 Clean Water Act Section 303(d) list.

Based on EPA's review, I have concluded the TMDLs adequately address the pollutant of concern and will, upon implementation, result in attainment of applicable water quality standards. The TMDLs include allocations as needed, takes into consideration seasonal variations and critical conditions, and provides an adequate margin of safety. The Regional Board provided adequate opportunities for the public to review and comment on these TMDLs. All required elements are adequately addressed; therefore, these TMDLs are hereby approved pursuant to Clean Water Act Section 303(d)(2).

The Regional Board's submittal also contains a detailed plan for implementing the TMDLs. Current federal regulations do not define TMDLs as containing implementation plans; therefore, EPA is not taking action on the implementation plan provided with the TMDLs. EPA generally concurs with the Water Board's proposed implementation approaches.

The enclosed review discusses the basis for this approval decision. I appreciate the Regional Board's work to complete and adopt these TMDLs, and we look forward to our continuing partnership in TMDL development. If you have questions concerning this approval, please call me at (415) 972-3572 or Jacques Landy at (775) 589-5248.

Sincerely yours,

 16 Sept. 2009
Alexis Strauss
Director, Water Division

Enclosure

cc: Harold Singer – Lahontan RWQCB

TMDL Review Checklist

State: California

Waterbodies: Middle Truckee River, Gray Creek, Bronco Creek

Pollutant(s): Sedimentation/Siltation

Date of Initial Submission: April 28, 2009

Date Received By EPA: April 30, 2009

Dates of Supplemental Submission(s) and Receipt by EPA: July 9, 2009; rec'd July 21, 2009

EPA Reviewer: Jacques Landy

- 1. Submittal Letter:** *State submittal letter indicates final TMDL(s) for specific water(s)/pollutant(s) were adopted by state and submitted to EPA for approval under 303(d).*

Submittal letter from Elizabeth Haven to Alexis Strauss, dated April 28, 2009. State submittal was completed on July 21, 2009. The Lahontan Regional Water Quality Control Board (RWQCB) adopted the suspended sediment TMDL for the Middle Truckee River Watershed on May 14, 2008 (RWQCB Resolution #R6T-2008-0019). The State Water Resources Control Board (SWRCB) approved these TMDLs on March 17, 2009 (SWRCB Resolution # 2009-0028). The State Office of Administrative Law (OAL) approved these TMDLs on July 9, 2009 OAL File #2009-0529-04 S). The submittal package contained the final Regional Board adopted Resolution, final State Board adopted Resolution, OAL approval, final Technical Staff Report and Responses to Comments.

2. TMDLs Included:

The submittal clearly identifies the water segments and pollutants or stressors for which TMDLs were developed. The submittal should include the water segment identifier (e.g., NHD code) for each segment addressed. The submittal should clearly identify the TMDLs adopted for currently 303(d) listed waterbody-pollutant combinations. It should also clarify if TMDLs were adopted for new impairment findings (by waterbody-pollutant combinations) that do not exist on the current 303(d) list. If appropriate, the submittal should describe any assessment decisions that may have resulted in non-impairment status for water/pollutant combinations that exist on State's most current 303(d) list.

The submittal addresses three water bodies: the Middle Truckee River (the segment from the outlet of Lake Tahoe in Tahoe City to the California/Nevada state line), Gray Creek, and Bronco Creek, which were placed on the State's 303(d) list in 1992 (Draft Staff Report, p. 3-2), and identified on the State's 2004-06 CWA Section 303(d) list, for sedimentation. Two tributaries of the Middle Truckee River, Gray Creek (18 square miles, of which the lower 3.8 are located in California) and Bronco Creek (16 square miles of which less than one at the lower end lies in California), were listed based on sediment discharges from the creeks to the Truckee River during thunderstorm events rather than based on beneficial use impairment in the creeks (p. 1-1—1-2 of Staff Report, May 2008). The TMDL establishes watershed-wide sediment load reductions that are protective of Truckee River beneficial uses, and sets load allocations for Gray and Bronco Creeks to address their 303(d) listings (p. 1-2).

3. Water Quality Standards Attainment: *TMDL and associated allocations are set at levels adequate to result in attainment of applicable water quality standards.*

(Staff Report, pp. 2-12—2-13, 3-6—3-22)

Narrative water quality objectives (WQOs) exist for sediment and settleable materials in the Lahontan RWQCB Basin Plan (Ch. 2). A suspended sediment concentration (SSC) of 25 mg/l as a 90th percentile—derived as a numeric interpretation of the narrative standard from literature reviews related to protection of resident aquatic life—is exceeded in the Squaw, Gray and Donner Creek tributaries (pp. 3-8—3-9). Finally, studies of aquatic organism populations in the river show that as deposited sediment volumes increase, the diversity and structure of these communities shift toward more sediment-tolerant species (pp. i, 3-15). The TMDL establishes a SSC target of 25 mg/l as a 90th percentile, which is consistent with Nevada's annual total suspended solids (TSS) standard for the Truckee River at Farad (15 mg/l).

The State reasonably concluded that attainment of the numeric targets, and associated TMDL and load allocation will result in attainment of the applicable narrative water-quality objectives.

4. Numeric Target(s): *Submission describes applicable water quality standards, including beneficial uses, applicable numeric and/or narrative criteria. Numeric water quality target(s) for TMDL identified, and adequate basis for target(s) as interpretation of water quality standards is provided.*

(Staff Report, pp. 2-12—2-13, 4-1—4-4)

Applicable beneficial uses (which include cold freshwater habitat; spawning, reproduction and development; and wildlife habitat) and narrative water quality objectives (for sediment and settleable materials) for the Truckee River and Gray and Bronco Creeks are described (Staff Report, pp. 2-12—2-13). Per the Staff Report (pp. 4-1—3-4), a variety of indicators and associated target values were developed to interpret narrative WQOs and ensure protection of beneficial uses, especially cold freshwater habitat. The TMDL water quality target is 25 mg/l SSC as a 90th percentile, to be monitored at the downstream Farad gauging station. Indicators also include implementation measures such as road sand application and recovery Best Management Practices (BMPs), ski area BMP implementation, dirt road maintenance or decommissioning, and legacy site restoration/BMP implementation (based on the source assessment). The suspended sediment numeric target is protective of early life-stage salmonids, and is an appropriate interpretation of the narrative standards.

This TMDL adequately defines the beneficial uses and identifies the numeric targets to be achieved, and provides a basis for the targets as interpretations of the narrative standards.

5. Source Analysis: *Point, non-point, and background sources of pollutants of concern are described, including the magnitude and location of sources. Submittal demonstrates all significant sources have been considered.*

(Staff Report, pp. 5-1—5-20, p. 7-2)

Point sources include California State Highways, covered by the Caltrans stormwater National Pollutant Discharge Elimination System (NPDES) permit, and urban areas covered by the municipal stormwater NPDES permits for Placer County and the Town of Truckee. The TMDL defines urban and non-point sources as “controllable,” and background sources as “uncontrollable” (p. 5-1). An annual suspended sediment load for the Truckee River at Farad, the downstream station, is estimated at 50,382 tons for 1996-1997, an above average water year (representing worst-case sediment transport conditions, p. 5-20). The magnitude and location of sources is provided for urban and non-urban areas, for sub-watersheds and intervening zones, as well as for discrete events that cause sediment pulses including snowmelt, thunderstorms, and dam releases. Urban areas contributed 10% and non-urban areas 90% of the 1996-1997 sediment load, and event-based loading constitutes nearly half the total load. The high event-based loads suggest that disturbed upland areas are important sources (p. 5-19). Primary sources are runoff

from urban areas, dirt roads, and legacy erosion sites (including stream channel alterations and impacts from grazing, logging, and recreation).

6. Loading Capacity Linkage Analysis: *Submittal describes relationship between numeric target(s) and identified pollutant sources. Submittal clearly identifies loading capacity. For each pollutant, describes analytical basis for conclusion that sum of allocations and margin of safety does not exceed the loading capacity of the receiving water(s).*

(Staff Report, pp. 6-1—6-3)

Consistent with EPA sediment TMDL guidance (1999), necessary load reductions to protect beneficial uses are based on comparing existing and target conditions, per EPA sediment TMDL guidance. An evaluation of annual water year 90th percentile SSCs (at Farad between 1975-2006) shows that the target value of 25 mg/l was exceeded in six of the 27 years (22%). The TMDL establishes a 20% suspended sediment load reduction will achieve the SSC target, and estimates the loading capacity at 40,300 tons per year. The linkage between sediment loading and aquatic life impairment was established using correlation suggested within EPA guidance. The submittal adequately describes the relationship between the numeric targets, pollutant sources and the total assimilative capacity (loading capacity) of the waterbody.

7. TMDL and Allocations:

TMDL—Submittal identifies the total allowable load, which is set equal to or less than the loading capacity. TMDL is expressed in terms of mass-based, concentration-based or other equivalent approaches that are consistent with federal requirements. If TMDL has seasonal features then please describe. TMDLs and allocations should be expressed in terms of daily time steps. If the TMDL and/or allocations are also expressed in terms other than mass loads per day, the submittal explains why it is reasonable and appropriate to express the TMDL in those terms.

Allocations—Submittal identifies appropriate wasteload allocations for all point sources and load allocations for all non-point sources. If point sources are present, submittal identifies existing NPDES permits by name and number. If no point sources are present, wasteload allocations are zero. If no non-point sources are present, then load allocations are zero. Allocations are expressed in terms of mass-based, concentration-based or other equivalent approaches and the submittal explains why it is reasonable and appropriate to express the TMDL in those terms.

(Staff Report pp. 7-1—7-4, 10-3—10-7)

The TMDL and allocations are expressed in mass-based terms of total annual load of suspended sediment. The TMDL is 40,300 tons/year; total WLAs are 4,936 tons/year and total LAs are 35,393 tons/year.

Waste Load Allocations

The submittal identifies urban areas within the Middle Truckee River watershed, which received wasteload allocations (WLAs) by sub-watershed, intervening zone, and for event-based loading (p. 7-4). Urban areas also received a substantial WLA for future development, based on residential growth projections provided by the Town of Truckee and Placer County which indicate that they could double in size over the next 10 to 20 years. Existing NPDES permits are identified by name and number (pp. 10-3—10-7). They include:

- Coverage under California's statewide general permit for storm water discharges from small MS4s (NPDES General Permit No. CAS000004) for Placer County (within the middle Truckee River watershed) and the Town of Truckee,
- CalTrans (statewide) NPDES Storm Water Permit (Order No. 99-06-DWQ),
- Statewide Construction Storm Water General Permit (Order No. 99-08-DWQ),

- Statewide Industrial Storm Water General Permit (Order 97-03-DWQ-General Industrial Permit).

Load Allocations

Load allocations (LAs) were assigned to non-urban areas by sub-watershed and intervening zone, as well as for event-based loading (no load was allocated to future non-point source development). LAs were assigned based on an analysis of the percent of controllable load for each sub-watershed (pp. 5-14—5-19) and a conservative estimate of BMP efficiency. A separate analysis was conducted of the controllable percentage of event-based loading, due to the fact that this includes all sources (controllable and uncontrollable, including in-stream erosion).

The TMDL and allocations are expressed in terms of mass loads per year and do not include a daily time step. The submittal explains (pp. 8-1—8-3) that there may be substantial and poorly-defined temporal lags and spatial disconnects between hillslope erosion events, sediment delivery, and the occurrence of sediment-related impacts on in-stream uses, and similar disparities between control actions and reduced sediment delivery to the river (Water Quality Control Plan Amendment, p.3). It is therefore reasonable and appropriate to express the TMDL in annual rather than daily terms. If EPA were to develop daily loads, an appropriate information source to assist with this is the draft Lake Tahoe sediment and nutrients TMDL, which has developed sophisticated relationships between annual and daily loads: see pp. 97-102, http://www.swrcb.ca.gov/rwqcb6/water_issues/programs/tmdl/lake_tahoe/docs/iwqms_proj_report.pdf. Since the watersheds are geographically contiguous, a relationship between the Lake Tahoe TMDL Integrated Water Quality Management Strategy Project Report's flow-range-variable daily loads and annual loads would likely closely correspond with the same relationship in the Middle Truckee River watershed.

8. Margin of Safety: *Submission describes explicit and/or implicit margin of safety for each pollutant.*

(Staff Report, pp. 8-1—8-2)

The submittal incorporates an implicit margin of safety by relying on conservative assumptions. Key conservative assumptions include using conservative (worst-case) estimates of sediment loading by basing the TMDL on a high water year (1996-1997), and adding event-based loading to sub-watershed inputs to account for short-term spikes that may have been missed by monthly sampling data. Other conservative assumptions include using BMP efficiencies at the lower end of the range reported in literature in estimating achievable load reductions and assigning allocations, and not factoring existing BMPs into determining required load reductions.

EPA considers this an appropriate approach for dealing with uncertainty concerning the relationship between the TMDL, load allocations, and water quality conditions.

9. Seasonal Variations and Critical Conditions: *Submission describes method for accounting for seasonal variations and critical conditions in the TMDL(s).*

(Staff Report, pp. 8-2—8-3)

The TMDL and allocations apply year-round. This TMDL accounts for seasonal variations and critical conditions by establishing an SSC target based on protecting the most sensitive aquatic life stages. The compliance point is also located at the most downstream sampling location, where cumulative effects of upstream loading will be captured. Seasonal variations are accounted for by expressing the target as an annual 90th percentile value, thus allowing for occasional, short-term fluctuations above the target limit.

10. Public Participation: *Submission documents provision of public notice and public comment opportunity; and explains how public comments were considered in the final TMDL(s).*

(Staff Report, pp. 9-1—9-4, Administrative Record, pp. 00-0055—00-0084 and pp. 00-0137—00-00-0161, RWQCB's Notice of Availability of Draft Staff Report and Draft Regional Board Resolution, Notice of Public Hearing, Public Comments Received, and Responses to Public Comments).

During the course of TMDL development, staff from the Lahontan RWQCB conducted a public participation process that included: numerous informational planning and stakeholder meetings between 1999-2004, issuing a notice of availability of the draft staff report and associated documents (February 4, 2008), issuing a notice of public hearing in local newspapers (February 6 and 13, 2008), and conducting a public hearing on May 14, 2008. A public comment period on the draft TMDL was open from February 5, 2008 to March 21, 2008. Staff adequately responded to comments (RWQCB Administrative Record pp. 001440—001531). The California State Water Resources Control Board (State Board) provided a public comment period prior to its approval (1/21/09 Notice of Opportunity for Public Comment included in Administrative Record for State Water Resources Control Board Resolution No. 2009-0028, p. SB-0031); no comments were received and the resolution approving an amendment to the Basin Plan to establish a TMDL for sediment in the Middle Truckee River Watershed was approved unanimously without discussion by the State Board on March 17, 2009.

The State demonstrated how it provided sufficient opportunities for public comment and adequately responded to public comments.

11. Technical Analysis: *Submission provides appropriate level of technical analysis supporting TMDL elements.*

The TMDL analysis provides an acceptable review and summary of available information about sediment in the watershed, and a sufficiently clear discussion of analytical methods used to calculate this TMDL.

EPA concludes the State was reasonably diligent in its technical analysis of the sediment loading in the watershed to set the TMDL at a level that will achieve water quality standards.

12. Reasonable Assurances: *If waste load allocations are made less stringent based on inclusion of load allocations that reflect nonpoint source reductions, submission describes how there are reasonable assurances that necessary nonpoint source reductions will occur.*

Not applicable

13. Other: *Table for clarifying submittal for TMDL waterbody-combinations for corresponding 303(d) listing, new impairment findings or non-impairment findings.*

The Truckee River, Gray Creek, and Bronco Creek are included in California's "2006 CWA Section 303(d) List" for Sedimentation/Siltation.