

**DEPARTMENT OF TRANSPORTATION**  
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March 19, 2007

4/3/07 BdMtg Item 5  
 Big Bear Lake  
 Deadline: 3/19/07 noon

Ms. Song Her  
 Clerk to the Board  
 State Water Resources Control Board  
 1001 I Street  
 Sacramento, CA 95814  
 E-mail: [commentletters@waterboards.ca.gov](mailto:commentletters@waterboards.ca.gov)  
 Fax: (916) 341-5620



Re: Comment Letter – Big Bear Lake Nutrient TMDL

Dear Ms. Her:

The California Department of Transportation (Department) appreciates the opportunity to comment on the amendment to the Water Quality Control Plan for the Santa Ana Region to establish a nutrient TMDL for dry hydrological conditions for Big Bear Lake. We support the efforts of the State Board to protect the environment and achieve the best water quality possible. The watershed draining into Big Bear Lake measures approximately 23,000 acres. Our Department manages 18 miles (approximately 70 acres) of roadway throughout Big Bear Lake. Our Right-of-Way (ROW) constitutes 0.3 percent of the entire watershed.

We have concerns about this Total Maximum Daily Load (TMDL), especially regarding the:

1. Primary source of sedimentation for the lake;
2. Lack of identification and quantification of the natural background loads; and
3. Lack of economic considerations.

### Primary Source of Lake Sedimentation

The Department's first concern is the RWQCB's assumption that external sediment loads (storm runoff) are an indirect yet significant cause of dry period nutrient loading into Big Bear Lake. On page 92 of the staff report, the RWQCB states: "...it is recognized that external inputs remain in the lake for an extended period and contribute significantly to internal sediment loading and macrophyte growth, which are addressed by these TMDLs. Accordingly, the proposed implementation plan includes requirements for external nutrient dischargers to participate in the development of internal sediment loading control measures

and macrophyte reduction/aquatic plant management programs.” A study<sup>i</sup> by Dr. Matthew E. Kirby, Ph.D., Assistant Professor for the Department of Geological Sciences, California State University, Fullerton, revealed that the primary sedimentation in Big Bear Lake over the past 40 years was the result of prolonged low level of the lake and not external inputs.

The Department should not be required to participate in the development of internal sediment loading control measures and macrophyte reduction/aquatic plant management programs because:

- a. There is a zero percent reduction required from the Urban Point Source Load of both Total Nitrogen and Total Phosphorus for this TMDL;
- b. The results of Dr. Kirby’s study verify that internal loading of nutrients is not caused by external sediment loads; and
- c. Total Nitrogen and Total Phosphorus loads from the Urban Point Source Load during an average year represent a very small fraction of the total load compared to the loading from internal sources. External inputs that apparently “remain in the lake for an extended period” do not “contribute significantly to internal sediment loading and macrophyte growth” compared to the significant internal sediment loading.

#### **Identification and Quantification of Natural Background Loads**

Our second concern is the lack of identification and quantification of the natural background loads. The State Water Resources Control Board (SWRCB) defines, a TMDL as “The sum of the individual wasteload allocations for point sources, load allocations for nonpoint sources and natural background, and a margin of safety<sup>ii</sup>.” In the TMDL for Nutrients in Big Bear Lake, the natural background is not included in the load allocations on page 84 of the staff report. The TMDL should be amended to include natural background in the load allocations. The U.S. Army Corps of Engineers is currently engaged in a study of Big Bear Lake that involves performing 450 sediment cores of the lake bottom. This study will help identify the natural background loads and the primary source of sedimentation in the lake. The Department requests that the State Board postpone the finalization of this TMDL until the Corps’ study concludes and quantifies the sediment loads associated with background conditions. A SWRCB report<sup>iii</sup> indicates that if natural background levels exceed water quality standards (WQS), revision of WQS is appropriate. The Department requests that the State Board postpone finalization of the TMDL until it determines whether the natural background levels exceed the WQS, in which case the WQS will need to be revised, and the TMDL will need to be recalculated.

<sup>i</sup> Matthew Kirby, M.E., *Determination of Sedimentation Rate and Sedimentation Processes at Big Bear Lake: Using a Paleo-Perspective to Understand Modern Sedimentary Systems*, Contract Report submitted to Big Bear Municipal Water District, 41pp. (2005)

<sup>ii</sup> State Water Resources Control Board, *Revised Draft Water Quality Control Policy for Addressing Impaired Waters: Regulatory Structure and Options* (2005)

<sup>iii</sup> State Water Resources Control Board, *SB 469 TMDL Guidance: Attachment A: Impaired Waters Regulatory Decision Tree* (11/22/04)

**Economic Considerations**

Finally, the Department is concerned with the economic considerations in this report. A SWRCB memorandum<sup>iv</sup> indicates proposed RWQCB regulations, such as the regulatory provisions of basin plans, must include:

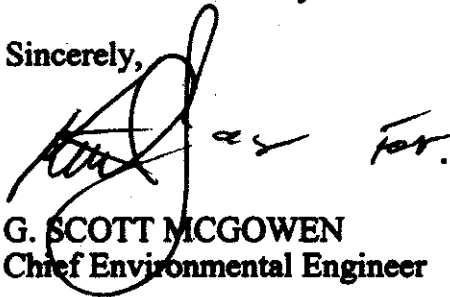
- An environmental analysis of the reasonably foreseeable methods of compliance with those standards or requirements; and
- A consideration of economic factors.

This memo also cites California Public Resources Code Section 21159, which states that because TMDLs contain quantifiable targets and load allocations (which together can be considered performance standards), the RWQCB must:

- Identify the reasonable foreseeable methods of compliance with the wasteload and load allocations; and
- Consider economic factors for those methods.

Thank you for the opportunity to comment on this matter. If you have any questions, please call Keith Jones of my office at (916) 653-4947.

Sincerely,



G. SCOTT MCGOWEN  
Chief Environmental Engineer

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<sup>iv</sup> State Water Resources Control Board, *Economic Considerations in TMDL Development and Basin Planning* (10/27/99)