



Sharon Green
Tri-TAC Chair
Sanitation Districts of Los Angeles County
P.O. Box 4998
Whittier, CA 90607
(562) 699-7411, ext. 2503
sgreen@lacsdsd.org

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Bill Reeves
Division of Water Quality
Standards Development Section
State Water Resources Control Board
1001 I Street
P.O. Box 100
Sacramento, CA 95812-100
Via U.S. Mail and Electronic Mail

Dear Mr. Reeves:

Comments on Ecoregion 6 Pilot Study

With this letter, Tri-TAC wishes to submit comments on the Ecoregion 6 Pilot Study. Tri-TAC is a statewide organization of local public agency representatives responsible for wastewater collection, treatment, disposal, and reclamation. Tri-TAC is jointly sponsored by the California Association of Sanitation Agencies, the California Water Environment Association, and the League of California Cities.

We would like to begin our letter by stating our strong support for the site-specific focus of the proposed decision framework and scenario given on pages 132 and 133 of the Pilot Study. We believe site-specific assessments are the most scientifically sound methodology for developing nutrient criteria, and we are pleased that this methodology is the proposed approach. We have significant questions and concerns, however, about how this decision framework will be implemented, which are outlined below by section of the document.

1.2 Overview of Pilot Project Approach

The document states that the Pilot Project and the original RTAG strategy rely on “development of nutrient criteria using a weight of evidence approach that takes into account observed data, expert opinion, and simulation model results.” While a weight of evidence approach sounds reasonable, it is very unclear how this will be implemented. The document should state explicitly that there will be a much greater emphasis on observed data than on simulation model results because of the uncertainty associated with model results and the lack of model validation. In addition, it is never stated how all the research and various numeric nutrient levels found in the course of the Pilot Study will be used. Will they be used to develop the “risk ranges” as part of the decision framework scenario? If the research is to be

Vice Chair
Chuck Weir
East Bay Dischargers
Authority
2651 Grant Avenue
San Lorenzo, CA 94580
cweir@ebda.org

Water Committee
Co-Chairs
Ben Horenstein
East Bay Municipal
Utility District
375 11th St. MS702
Oakland, CA 94623
(510) 287-1846
bhorenst@ebmud.com

Traci Minamide
City of Los Angeles
433 S. Spring St., Suite 500
Los Angeles, CA 90013
(213) 473-8541
tminami@san.lacity.org

Air Committee Chair
Jackie Kepke
CH2M Hill
155 Grand Ave., Suite 1000
Oakland, CA 94612
(510) 251-2426
jkepke@ch2m.com

Land Committee
Co-Chairs
Layne Baroldi
Orange County
Sanitation District
P.O. Box 9127
Fountain Valley, CA 92728
(714) 593-7456
lbaroldi@ocsd.com

Maura Bonnarens
East Bay Municipal
Utility District
375 11th St., MS702
Oakland, CA 94623
(510) 287-1141
rbonnare@ebmud.com

used to develop regionwide numeric nutrient criteria, then we vehemently object to the methodology put forth in the document. More clarity on how the nutrient levels found through the regional analysis will be used in the development and implementation of nutrient criteria is essential. The document states that the analysis of response variables is incomplete. This is of great concern to us because the entire analysis is incomplete until the relationship between nutrients and algae can be examined. Without response variable data, it will be impossible to determine the nutrient levels necessary to protect the environment or to determine if nutrient criteria are beneficial or detrimental to the environment. Until response data are obtained and analyzed, we do not believe the development of nutrient criteria can move forward in a scientifically sensible manner.

3.3 Screening of Data

Data in excess of 50 mg/l were treated as outliers and discarded from the analysis. We would like more explanation on why these points were considered outliers. Perhaps they convey valuable information on the variability of nutrient levels in some waterbodies.

Because of the uneven data, one data point per station per month was used in the analysis. How was this one data point chosen? While we understand the need to weight monitoring stations evenly, this technique of picking one data point does not take advantage of the data that are available. In addition, it does not account for the site-specific variability of nutrient levels. Other analytical and statistical methods that incorporate as much data as possible should be sought.

3.5 Box Plots

The data analysis found that the data are highly variable, spanning several orders of magnitude in some cases. This high variability is largely responsible for our concerns about the development of regionwide numeric nutrient criteria. While some broad generalities about nutrient concentrations in unimpacted vs. impacted waterbodies can be made, the variability in the data is too high to develop regionwide criteria based on these trends. The use of regionwide numbers as triggers for further study could be an acceptable approach, but more detail on how the triggers would be developed and used should be provided to the RTAG prior to the adoption of this approach.

The data show seasonal effects of nutrients, and it is suggested that criteria focus on nutrient concentrations during the warm, growing months of the year. We agree that it is logical to consider seasonality in the data analysis because of the dramatic seasonal differences exhibited in Ecoregion 6 waters at different times of the year.

3.8 Chlorophyll a and Nutrients

As we have previously stated, we strongly support the collection of more algae data as well as the use of chlorophyll and periphyton levels in developing nutrient criteria for California. However, we caution against extrapolating response variable data across and within ecoregions and subcoregions even if more data are obtained. Target levels should be based on beneficial use designations for the specific waterbody in question, not averages found across a region.

Table 3-4. Nutrient Concentrations in Streams (All Year)

Please explain why the Pilot Study focused on median nutrient concentrations vs. average concentrations. It is also not clear whether t-tests were done to determine if the differences in concentrations between the types of waterbodies (e.g. unimpacted vs. impacted) are significant.

Further analysis is necessary to determine the usefulness and validity of the impacted/ unimpacted waterbody approach.

4.0 Modeling Analysis for Nutrient Criteria

We wholeheartedly agree that the determination of a nutrient criterion should begin on the response side. We disagree, however, with the statement that “a criterion should not be set at a value less than is predicted for unimpacted natural conditions, regardless of whether this is estimated to cause an undesirable response.” The Pilot Study and Workplan’s focus on unimpacted conditions instead of beneficial uses is our main source of disagreement with the State Board’s proposed approach. In our opinion, criteria developed solely with the intent of replicating unimpacted conditions do not meet the goals of the Clean Water Act or the Porter Cologne Act unless it can be clearly demonstrated that the attainment of such levels is feasible and necessary for the reasonable protection of designated uses.

4.1 Modeling Approach

The document states that the modeling will provide estimates of instream nutrient concentrations that reflect “natural conditions”. These estimates will then “provide a baseline from which to evaluate conditions where designated uses should be fully realized and allow decision-makers to discriminate water quality impacts that are due to nutrient over-enrichment.” It is unclear if these estimates will provide a baseline on a site-specific basis or regionwide basis and how they will be used. We recommend that the estimates be used to help determine appropriate nutrient levels on a site-specific basis, and that the estimates be accompanied by further analysis at the site-specific level. Using the results of the models in any other way will not be valid, given the numerous assumptions and data gaps imbedded in the models. The results of the model should only be used as general guidance along with other lines of evidence based on actual data. We believe this is in agreement with the weight of evidence approach outlined in the Pilot Study, but we believe it should be explicitly stated that no numbers obtained solely through the modeling will become adopted or de facto nutrient criteria (e.g. through interpretation of existing narrative criteria) for any waterbody or region.

6.0 Development of Nutrient Criteria

As noted above, we strongly support the proposed decision framework and scenario given for developing nutrient criteria on page 133 of the document. We agree with the site-specific focus, the adaptive management approach, and the need to investigate nutrient conditions before putting a waterbody on the 303(d) list. We recognize that this approach could place an additional assessment burden on water quality agencies, and we believe that many local wastewater agencies would be willing to cooperate with the State and Regional Boards in conducting the assessments. The proposed approach appears to be similar to the development process we proposed in previous discussions with the RTAG and the State Board.

We have the following suggestions on how to improve the proposed framework. First, the overarching question to be addressed in the assessments and determining if a nutrient management plan is necessary should be “are the beneficial uses being met?” If yes, then no further work is necessary. If no, then a nutrient management plan is necessary, and it should address the question “how can uses of the waterbody be reasonably protected?” The questions included in the workplan on page 133 should be a part of the development of a nutrient management plan if one is necessary, but they should not be considered the criteria for determining if a nutrient management plan is necessary in the first place. We also have questions about the following: how and to what

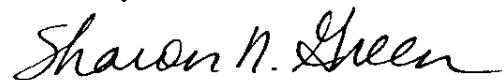
degree permit holders would be responsible for assessments, what the "risk ranges" would be and how they would be developed, and if the need for a nutrient management plan would automatically place a waterbody on the 303(d) list.

Conclusion

In closing, we support the proposed decision framework and the weight of evidence approach. However, we have concerns on the following issues: setting criteria to emulate unimpacted natural conditions, incomplete analysis of response variables, use of unvalidated modeling results on par with observed data, and data censorship. If the regional analysis is simply used to develop numeric nutrient criteria without the benefit of site-specific assessments or a weight-of-evidence approach, we will have strong objections to the State moving forward with this methodology for managing nutrients.

Thank you for this opportunity to comment. We look forward to discussing the results of the Pilot Project, as well as the issues discussed above, with you and other members of the RTAG in the near future. If you have any questions or comments, please contact Sharon Landau at (562) 699-7411, extension 2820.

Sincerely,

A handwritten signature in cursive script that reads "Sharon N. Green".

Sharon N. Green
Chair

cc: Regional Technical Advisory Group