

Water Board Responses to California Public Comments

November 2, 2010

9. Tahoe Area Sierra Club



September 13, 2010

Harold Singer, Acting Executive Director
Lahontan Regional Water Quality Control Board
2501 Lake Tahoe Blvd.
S. Lake Tahoe, CA 96150

By e-mail to DFSmith@waterboards.ca.gov

Dear Mr. Singer,

The attached comments are submitted in response to your “Notice of filing of draft environmental documents concerning Proposed Amendments to the Water Quality Control Plan for the Lahontan Region including the draft Lake Tahoe Total Maximum Daily Load for Sediment and Nutrients.” We thank Lahontan Regional Water Quality Control Board (Lahontan) staff for meeting with us on numerous occasions to explain the development of the TMDL “package,” some of the assumptions that were made, and some of the implementation concepts

TASC feels the Tahoe TMDL is a major work product that provides a good starting point to support a change in direction regarding regulation of discharges to Lake Tahoe’s once-clear waters consistent with the non-degradation standard of the Outstanding Natural Resource Waters designation for the lake. Lahontan can and should use innovative methods, as long as Lahontan maintains its core duty—to protect and regulate for attainment of water quality. The key to knowing if a new method works is results—actual monitored and measured reduction in pollutants that improve lake clarity.

Accordingly, because the proposed TMDL is a promising but an untested approach, our support for it depends on the following conditions being met:

- An implementation plan is adopted. Chapter 11 of the TMDL (Implementation Plan) needs to have deadlines, reporting requirements, accountability measures, and mechanisms to assure the public that work is being done as predicted and that results are attained.
- A comprehensive monitoring network, including a fully funded RSWMP and LTIMP, is developed, implemented and in operation as a requirement of the NPDES permits.
- Effective and timely adaptive management, enforcement and reporting are in place.
- Credits are not awarded until expected annual load reductions have been confirmed through monitoring, either specific to a project and/or through field measurements of a BMP with similar attributes. This is especially important given the need to understand the actual results on a timely basis to justify the expenditures for the federal, state, and local residents who are supporting the work to restore the lake’s clarity.

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Response

TASC-1: The proposed Basin Plan amendment details the specific implementation plan components for the each of the four source categories: urban upland, forest upland, atmospheric deposition, and stream channel erosion. The TMDL schedule of deadlines is specified in the load allocation tables in the implementation plan. The TMDL proposes performance requirements for each source category so the lake's deep water transparency numeric target is achieved. The Water Board will use the existing permitting authority under the municipal, industrial and construction NPDES stormwater permit program, and the waste discharge program and prohibitions to impose the applicable load and waste load allocations on dischargers.

TASC-2: The Monitoring Plan portion of the proposed Basin Plan amendment describes the monitoring program for the TMDL. There are components for the source load reduction monitoring and for the tributary and lake response monitoring. As applicable, monitoring requirements will be imposed on dischargers by the Water Board using California Water Code authorities.

TASC-3: The Adaptive Management portion of the proposed Basin Plan amendment details the adaptive management process for the Lake Tahoe TMDL. As part of the TMDL Management System, annual reports on accomplishments will be produced as well as a 5 year report on the evaluation of milestones. The California Water Code provides the Water Board with various enforcement tools.

TASC-4: The Lake Clarity Credit is based on an estimate of average fine sediment particle load reduction. Due to the inherent seasonal and inter-annual variability in stormwater runoff, it is impossible to measure an average annual load. Monitoring information will continue to help inform and refine the average annual load estimation tools. However, credits will only be awarded if facilities continue to operate as designed and necessary operations and maintenance is performed.

- All new projects undertaken in the Basin prior to the issuance of the NPDES permits in California install stormwater runoff controls to contain 100% of runoff on-site.
- Mechanisms are in place that will ensure timely adjustments to the model to reflect impacts from climate change, scientific findings regarding lake clarity response, near-shore issues and processes, and impacts from other sources, such as forest runoff, golf courses, ski areas, campgrounds, parking lots on public property, and unpaved roads.
- Near-shore clarity issues are addressed quickly, including the process and timeline for adopting, implementing and enforcing water quality standards to attain and maintain a clear view of the lake bottom while standing near the lake's edge.
- The Lahontan Board is identified as the official body to conduct oversight of the program and holds annual public meetings to review the progress of the TMDL.

Please review the following pages for detailed comments. We look forward to working with Lahontan to improve and implement the TMDL so that the mid-lake transparency ("clarity") standard is attained sooner than the current 65-year schedule.

Thank you for caring about Lake Tahoe and affording us this opportunity to share our views.

Sincerely,



Roger Rosenberger
Tahoe Area Sierra Club



Laurel Ames
TASC Conservation Committee

Comment

TASC comments on Proposed Basin Plan Amendments for Tahoe TMDL

9/13/2010

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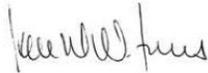
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TASC-5: In many areas, it would be impossible to design runoff facilities to accommodate 100% of the runoff volume. Facilities designed to capture the recommended design storm for infiltration facilities (20 year, 1-hour) will capture more than 80 percent of the average annual runoff flow. The proposed Basin Plan amendment requires project proponents to either infiltrate runoff from the 20 year, 1-hour design storm or to meet specified numeric effluent limits. Prior to the municipal NPDES stormwater permit update, municipalities will likely use the Pollutant Load Reduction Model to design projects to maximize pollutant load reductions, as these projects will be eligible for Lake Clarity Credits once the permit is updated.

TASC-6: Same as Response TASC-3, with this addition: All actual or potential impacts that are demonstrated sources such as forest runoff, golf courses, ski areas, campgrounds, parking lots, or unpaved roads through research or monitoring will be addressed through the adaptive management process.

TASC-7: Because Lake Tahoe's nearshore environment is not listed as impaired on the 303(d) list, the draft Lake Tahoe TMDL was not required to address specific issues in the nearshore. However, pollutant load reduction actions that are required to address the four source categories are expected to result in improved conditions in the nearshore because of the expected reductions in the amount of pollutants entering the lake through the nearshore. Staff are currently working with researchers to develop more appropriate standards (and implementation actions for addressing Aquatic Invasive Species) for the nearshore environment and will take steps needed to adopt them in the Basin Plan as these new standards are developed.

TASC-8: The proposed Basin Plan amendment requires that the Water Board regularly assess the relevant research and monitoring findings and may consider reopening the TMDL to adjust load reduction milestones and/or the TMDL implementation approach if needed. Water Board staff will report annually to the Water Board and the public on the progress of implementation and on the progress toward meeting the deep water transparency standard. With Board support, Water Board staff will schedule meetings for public input on the TMDL implementation.

Detailed Comments

The following includes detailed questions and comments on the proposed Basin Plan Amendments (BPA) for the Tahoe TMDL.¹ Comments regarding changes to the summary document must also be reflected in the Basin Plan Amendments and TMDL chapters, as appropriate.

Overall Approach of the TMDL.

The body of work generated through this project provides an improved understanding of the pollutants affecting lake clarity loss, their sources, and the new annual water transparency standard (hereafter referred to as ‘clarity’) of 97.4 feet (29.7 meters).

While we understand the agency’s desire to record clarity as an annual average, the TASC recommends that the winter four-month mean Secchi readings continue to be reported, in order to validate the assertion that changing from a winter average to an annual average is equivalent over time.

As noted by regulatory entities and the research community, the TMDL was developed on the best information available in 2004. Because of the six-year-old cutoff date, many research and monitoring gaps remain or are not included. Therefore a robust, ongoing monitoring, research and adaptive management structure must be clearly stated and adhered to through an implementation management plan for the public to be assured that anticipated load reduction targets are to be met and the clarity standard achieved.

Lake Tahoe TMDL Summary.

The summary (page 1) should include the following information and answer the questions and issues raised prior to the November Board hearing:

- The implementation management plan should be described. The plan should include a description of what success is and how the agency will know it has been attained, a timeline of decision points and protocols for those decision points, how the expected \$1.5 billion will be spent, how it will be awarded (e.g., cheapest project, most effective, highest priority, off-the shelf technology or innovation, etc.).
- Why the cutoff point for “fine” particles is 16 microns and below instead of 2.5 microns and below. Peer reviewers noted that it is believed the largest impacts are actually from fines roughly 2-5 microns and smaller. This discussion is missing from the document and should be provided.
- The estimated loading addresses only atmospheric deposition onto the Lake’s surface. Loading from deposition onto land has been included in the other land-based sources (e.g. urban runoff), but not reported. The document should report the estimated land-based deposition. In addition, further research is needed to better refine atmospheric estimates and amend the model to add those quantities of particulates and nutrients. This information

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TASC-9: The Water Board's water quality objective for Lake Tahoe's transparency has always been an annual average of Secchi disk data (see Chapter 5 of the Lake Tahoe TMDL Report for additional discussion on Water Quality Standards for the Water Board, NDEP, and TRPA). Secchi depth measurements will continue to be collected and individual measurements are reported in the UC Davis - TERC *State of the Lake Report* (<http://terc.ucdavis.edu/stateofthelake/>), so winter time Secchi data will be available and winter averages can be compared to the annual average. The Water Board will report the annual average Secchi depth for Lake Tahoe each year.

TASC-10: The Monitoring Plan portion of the proposed Basin Plan amendment and Chapter 13 of the Lake Tahoe TMDL Report describes the TMDL monitoring plan, which consists of both ongoing monitoring programs and new monitoring efforts that are currently under development or anticipated in the future. Chapter 12 in the Lake Tahoe TMDL Report describes the adaptive management program for the TMDL, which includes a process for listing the key areas of uncertainty for research and a process for incorporating new research findings into the implementation program.

TASC-11: Since the majority of the pollutant load reductions are required from the urban source, the implementation management also focuses on the urban source. Accordingly, the urban implementation schedule, other than meeting performance load reduction requirements, depends on each urban jurisdiction's individual pollutant load reduction plan. The draft Lake Tahoe TMDL requires the individual urban load reduction plan be submitted no later than two years from TMDL approval. It is anticipated that each urban jurisdiction will consider costs, performance requirements, and funding opportunities in developing its load reduction plan. Load reduction actions will be chosen by each urban jurisdiction, not by the Water Board. The Water Board intends to use its existing enforcement authority, as needed, to ensure that load reduction performance requirements are met. The Water Board will also work with those entities that provide funding such that both cost effective projects and those that can achieve the largest pollutant load reductions are given high priority.

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TASC-12: Two of the five peer reviewers agreed with the conclusion that fine sediment particles (< 16 micrometers in diameter) were the primary cause of transparency impairment. The other three peer reviewers agreed, too, but clarified that fine sediment particles < 10 micrometers in size, and mainly 1-5 micrometers in size, were the largest category. As documented in the Lake Tahoe TMDL Technical Report, Swift et al. (2006) found that particles > 16 µm did not contribute to the light scattering coefficient in any significant manner, i.e. near 100% of the scattering was related to particles < 16 µm. Though about 70-75% of the cumulative light scattering is associated with particles < 5 µm, particles between 5-16 µm still contribute to light scattering, so the cutoff was chosen collectively as particles < 16 µm.

TASC-13: Section 4.5 in the Lake Tahoe TMDL Technical Report describes the loading estimate for the atmospheric deposition source and states that pollutants that fall onto the land were included in the groundwater or upland source analysis. Furthermore, pollutants that either (1) enter the surface runoff by atmospheric deposition (i.e. deposited on land and are carried by stormwater or tributaries), or (2) are entrained into the atmosphere from the terrestrial environment (i.e. smoke or dust) require land-based controls. Therefore no adjustments are needed as the pollutant loading for atmospheric deposition onto the land was accounted for in the source analysis.

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- The quantity of fine sediment that enters the lake via stream channels because adjacent flood plains are no longer functioning properly as a result of development and other human disturbances. Because this value is unknown, this factor should be noted under the Stream Channel source category and a factor for fine sediment transported in the stream amended into the model.
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Although page 8 summarizes the results of assumed ‘buildout,’ what this actually represents has been a point of contention and confusion for quite some time. The text should include a clear description of what the assumptions actually are as described in the U.S. Geological Survey 2006 document cited in the models’ references.²

Eliminate Numeric Effluent Limits for nutrients in Stormwater Discharges to Infiltration Systems (p. 2).

Nutrients:

- The TASC has serious concerns with the proposal to eliminate the effluent limits for nitrogen in stormwater discharges to infiltration systems due to the magical qualities of soil to remove the nitrogen before it enters the water. The summary and substitute environmental document (SED) should explain how the soils can absorb enough nitrogen to help attain the nitrogen loading proposed in the model.
- Now that the lake is co-limited in a number of months of the year (see State of the Lake Report 2008 and 2009), the input of nitrogen to the groundwater, the streams and the lake is of very serious concern. There is no information provided to assure that a large percentage of nitrogen will be treated in the soil through infiltration, because soil saturation during stormwater events will result in no soil treatment volume, as well as an increase in nitrogen discharge. The CWA 303(d) list for nitrogen sources should be re-examined and additional specific nitrogen reduction measures added to the crediting program.

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TASC-14: Section 4.4 in the Lake Tahoe TMDL Technical Report describes the loading estimates from the stream channel erosion source category, Section 4.3 in the Lake Tahoe TMDL Technical Report describes the load contributions from the upland source categories. Based on land-use, the Lake Tahoe Watershed Model simulated the load contribution from all uplands that contribute runoff into the streams. The model results were calibrated using Lake Tahoe Interagency Monitoring Program (LTIMP) data, thus there is no need to add a factor for fine sediment transported in the streams from poor functioning floodplains, as this fraction was already included in the modeling analysis.

TASC-15: The text in the Basin Plan amendment has been updated to include the term “deep water” preceding the word “transparency” to clarify what impairment this TMDL is addressing.

TASC-16: The Water Board is committed to protection of the nearshore environment and text has been added to the proposed Basin Plan amendment highlighting the Water Board’s commitment to addressing nearshore water quality issues. Current research is underway to identify appropriate nearshore standards. Once this project is complete, the Water Board will follow the necessary steps to amend the Basin Plan to adopt new nearshore standards and update implementation measures if needed.

TASC-17: Text from the Lake Tahoe TMDL Report has been added to the TMDL portion of the BPA to further explain the analysis of future growth potential. The future growth potential analysis was based on Haling (2006) which evaluated the future growth based on a projection of the worst-case coverage scenario under the current regulations. For example, Haling’s analysis assumed 53 currently vacant multi-family parcels will be developed and assigned a number of units reflecting the distribution of existing multi-family developments in the parcel’s county and that there will be an additional 200,000 square feet of commercial floor area developed to reflect the existing commercial development within the parcel’s planning area. Please refer to Haling (2006) for additional details regarding the future growth potential analysis.

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- Now that the lake is co-limited in a number of months of the year (see State of the Lake Report 2008 and 2009), the input of nitrogen to the groundwater, the streams and the lake is of very serious concern. There is no information provided to assure that a large percentage of nitrogen will be treated in the soil through infiltration, because soil saturation during stormwater events will result in no soil treatment volume, as well as an increase in nitrogen discharge. The CWA 303(d) list for nitrogen sources should be re-examined and additional specific nitrogen reduction measures added to the crediting program.

² Tahoe Land-Use Change Model Summary Report and Climate Change Literature Review and Tahoe Basin Projections, U.S. Geological Survey, March 31, 2006

Response

TASC-18: The proposed Basin Plan amendment will not remove the numeric effluent limits for nitrogen. Should the Water Board consider removing these limits in a future Basin Plan amendment, the substitute environmental analysis will describe potential environmental impacts at that time.

TASC-19: As described in the Lake Tahoe TMDL and the associated proposed Basin Plan amendment, Lake Tahoe’s transparency is impaired by three pollutants – fine sediment particles, total phosphorus, and total nitrogen. The TMDL allocation schedule and associated implementation plan include nitrogen load reduction requirements and implementation actions to address nitrogen loading. Because of the disproportionate impact of fine sediment particles on transparency, the Lake Clarity Crediting Program is initially focusing on fine sediment particles. The program does, however, include provisions to define a Lake Clarity Credit based on all three pollutants of concern.

The effluent limit for nitrogen entering stormwater infiltration systems should be maintained as an integral part of all associated monitoring programs and as a standard requirement of the TMDL unless and until such time adequate scientific information shows that infiltration can sufficiently remove nitrogen as required by the TMDL load reductions. Without such controls and a monitoring program, it will be difficult or impossible to determine the amount of nitrogen added to the lake's load.

Nutrients and Near-shore Clarity

The TASC understands that more information is needed to fully understand the complex near-shore processes affecting the lake's shoreline, and that although research is already underway, we do not yet have enough information to develop an appropriate near-shore clarity standard, nor assess what control mechanisms will be necessary to restore the lake's once-clear shoreline. Further, although the mid-lake clarity TMDL addresses all three clarity-reducing constituents (fine particles, nitrogen and phosphorous) it prioritizes a reduction in fine particles – as expected given that the pollutants with the greatest impact on *mid-lake* clarity are fine particles and the TMDL is based on a requirement to achieve the *mid-lake* clarity standard.

However, in the interim, the problem remains that the tributaries still deliver nutrients to the lake every day, primary productivity is still increasing exponentially, and Tahoe's once-clear near-shore continues to degrade. It may be that nutrients have little or nothing to do with the phenomenal growth of invasive plants and aquatic animals in the near shore, but the likelihood is that nutrients are one potential element that cannot be dismissed until studies prove those nutrients are not a part of the disturbing amount of near-shore growths.

Therefore, the TMDL must maintain regular application of effluent limits for nitrogen and phosphorus and include these nutrients in all monitoring programs. Further, Lahontan must react swiftly and appropriately to restore Tahoe's near-shore areas once the needed scientific information is available to support the development of a standard and indicator that protects clarity in the shoreline areas, and necessary pollutant control measures can be determined, adopted and enforced.

Infiltration and Groundwater:

The summary on page 2 regarding the elimination of numeric effluent limits for stormwater discharges to infiltration systems explains: *“In the event there isn't sufficient separation between infiltration systems and groundwater levels, the Basin Plan ensures water quality protection by stating that when the separation between infiltration systems and groundwater is less than five (5) feet, discharges may be required to meet effluent limits for discharges to surface waters.”*

Although the current BP language includes this reference to the five-foot distance, the proposed deletions to the BP include the removal of the following language (page 23): *“Therefore, discharges to infiltration systems located in areas where the separation between the highest anticipated ground water level and the bottom of the infiltration system is less than five (5) feet may be required to meet the effluent limits for stormwater discharges to surface waters.”* Yet the proposed replacement language for this section does not include this specific protection, but rather addresses the issue in vague terms (as proposed on page 25): *“Infiltrating runoff volumes generated by*

Comment

Response

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TASC-20: The proposed Basin Plan amendment no longer eliminates the numeric effluent limits for discharges to infiltration systems. The Tahoe Regional Planning Agency, with Water Board staff assistance, is working on a project to evaluate the impact of infiltration systems on groundwater resources. The project will include a synthesis of available groundwater monitoring data and, if needed, recommendations for additional monitoring.

TASC-21: The proposed Basin Plan amendment no longer eliminates the numeric effluent limits for nitrogen and phosphorus in stormwater discharges. Nitrogen and phosphorus are included in existing and planned monitoring programs and the proposed Basin Plan amendment has been revised to include additional monitoring program details. Water quality monitoring will include analysis of all three pollutants of concern. Nutrients are currently monitored regularly through the Lake Tahoe Interagency Monitoring Program (LTIMP) in tributary and lake waters. Furthermore, the Regional Storm Water Monitoring Program, while currently under development is also expected to include nutrient monitoring requirements.

Please see Response TASC-7 regarding nearshore water quality comments.

the 20 year, 1-hour storm may not be possible in some locations due to shallow depth to seasonal groundwater levels, unfavorable soil conditions, or other site constraints such as existing infrastructure or rock outcroppings.”

- Either the summary is inaccurate or the BPA language fails to include the five-foot distance.
- The agency responsible for determining when infiltration is not possible due to groundwater level(s) shall be designated and specific criteria provided.
- Multiple alternative locations in an area should be evaluated for potential to design treatment that infiltrates stormwater. A project proponent or implementing entity cannot simply look at one location in a project (as individual parcels and/or a combined area) and state infiltration is not feasible.
- The document should state the potential for higher seasonal water table as the climate changes and provide criteria for determining when infiltration capacities are lost.
- Reducing the five-foot standard is unlikely to protect groundwater. Rather, it could provide that nitrogen has an easier path to the lake.

Eliminate Numeric Effluent Limits for Total Iron and Oil and Grease for Discharges to Surface Water (p. 3).

Although staff stated at the 9/8/2010 public hearing that due to an inadequate project description, the proposal to amend the requirements for Iron, Oil and Grease for discharges to surface water will be removed from the currently-proposed BPA, we presume the agency will eventually propose these amendments in the next iteration. Therefore, we maintain the following comments for future consideration:

The future environmental documents should describe the regulatory and legal differences, if any, between the requirements for meeting a stormwater effluent limit versus Maximum Contaminant Level (MCL). Also the documents should describe the difference between the monitoring programs for each in the same way, listing the different parameters. If both are comparable in almost every way, then the proposal to retain the more stringent MCL for iron would be an advantage. This information should be provided in the next draft of the SED.

Iron:

Researchers still lack a full understanding of the near-shore lake processes that are contributing to the loss of clarity, vulnerability to and impacts of invasive species, and exponential growth of algae in our near-shore environments. As such research is currently underway, the future environmental document should evaluate the best available science regarding the role of iron in near-shore processes, and whether this warrants tighter standards for iron.

Oil and Grease:

The future document should describe at what concentration(s) visual sheens are typically seen. The document currently states only “much lower than 2.0 mg/l.” Will the deletion of the stormwater effluent limit affect the extent (e.g. frequency, location, etc.) of monitoring for these constituents? Are there

Comment

Response

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TASC-22: The proposed Basin Plan amendment has does not eliminate effluent limits for discharges to infiltration systems and retains the referenced language regarding suggested separation between infiltration systems and seasonal high groundwater.

TASC-23: The proposed Basin Plan amendment has been revised to clarify what conditions constitute an inability to infiltrate stormwater.

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TASC-24: The proposed Basin Plan amendment does not eliminate the effluent limits for Total Iron or Grease and Oil. Should the Water Board consider removing these limits in a future Basin Plan amendment, the substitute environmental documentation will describe potential environmental impacts at that time.

conditions that could prevent a visual sheen from being observed at levels below 2.0 mg/l? If it's possible for the visual sheen 'measurement' to be subjective, where the reading is different between different observers, then how many observations are necessary to validate the standard? Are there other uses for the data pertaining to measuring the concentrations?

Describe Stormwater Treatment Requirements.

On page 3 this section states: “...and the need to prioritize load reduction actions to make the best use of limited public resources to control roadway runoff.”

There has been extensive discussion regarding the cost of TMDL implementation and resources that are available to assist with these costs. The proposed BPA language seems to weigh in on this issue of contention, stating that public resources are “limited.” However, in response to recent concerns expressed by local jurisdictions that the TMDL is an “unfunded local mandate,” TRPA and Lahontan staff have responded by explaining that on the contrary, adoption of the TMDL will provide eligibility to the local jurisdictions for additional federal and state grant programs based on implementation of the mandated TMDL. Further, although not required to, the TRPA is proposing to provide “incentives” and allocations in conjunction with the award of credits by Lahontan, thus possibly providing additional financial means to help achieve the load reductions.

While the issue of funding is a valid discussion point, the TASC recommends the word “*limited*” be removed from this proposed BPA language. The intent will remain the same - that the idea is to make the best use of public resources to control roadway runoff. As much contention and question remains regarding public funding, it is not appropriate to state such funding is “limited” in the Basin Plan. This is an implementation issue (and is addressed later in this letter).

On page 25, the proposed language includes: “*Where conditions permit, project proponents should consider designing infiltration facilities to accommodate runoff volumes in excess of the 20 year, 1-hour storm to provide additional stormwater treatment.*”

- What conditions would either permit or not permit this design?
- Will Lahontan give additional ‘credit’ for implementers who design to accommodate larger runoff volumes? If not, then how will Lahontan encourage or require such designs?
- Lahontan agrees there are water quality benefits from accommodating larger runoff volumes, so why not require them now? Why does this language only suggest that jurisdictions and project implementers “should consider” such a design?

The science regarding expected impacts of climate change in the Lake Tahoe Basin may still be under development and ongoing. However, evidence today supports the expectation that we will see less snow, more rain, shorter winters and more intense flooding events. In other words, science already supports the need to design infiltration facilities to accommodate greater than the 20-year, 1-hour storm.

Comment

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Response

TASC-25: The word "limited" has been removed from the text on page 3 (page 030007 of the Water Board Packet) of the Cover Letter introducing the proposed Basin Plan amendment. Please note this is only the cover letter, and not the actual Basin Plan amendment.

TASC-26: The conditions that would either permit or not permit a project proponent infiltrating a greater volume than the 20 year, 1 hour storm would be site specific and dependent on the design of the actual water quality improvement project. Although site constraints may limit a discharger's ability to infiltrate runoff volumes greater than the required volume, the Water Board acknowledges, that where site conditions allow, the capacity to treat a greater volume of stormwater may have additional benefits to water quality during large storm events.

TASC-27: Municipal jurisdictions that will be required to participate in the Lake Clarity Crediting Program are not subject to requirements or suggestions for treating a particular design storm. The Lake Clarity Crediting Program awards Lake Clarity Credits based on average annual pollutant load estimates. The Pollutant Load Reduction Model can provide the estimated water quality benefit from different size treatment facilities to allow for relative cost benefit analysis. If constructing over-sized infiltration facilities can be shown to increase average annual pollutant load reductions, than local jurisdictions will be eligible for Lake Clarity Credits associated with those load reductions. As such, there is an incentive for municipalities to construct over-sized treatment facilities and for municipalities to require private property owners to contain and/or infiltrate larger runoff volumes.

TASC-28: Section 12.2 in the Lake Tahoe TMDL Report discusses some of the potential impacts from climate change. Although science supports that these changes may occur, we do not know how potential changes in precipitation would necessitate changes in the current design standard or approaches to treat stormwater. Though in the future we may need to change the current design standard, the existing design standard is sufficient to treat precipitation as modeled and is designed to capture the majority of stormwater runoff. Current climate science predicts a decrease in annual precipitation, so the current design standard should treat a greater percentage of annual stormwater runoff. Additionally, current climate science does not provide sufficient data certainty from which to design new design standards. If future changes in design standards are needed, the Water Board will make such adjustments within the adaptive management framework.

As the SED states: “Existing concentration-based numeric effluent limits for stormwater runoff would be retained as the primary compliance objective. Those limits, which apply to all stormwater runoff at all times, do not account for storm event variability and do not recognize any correlation between pollutant loads into the Lake and transparency.” (pages 16-37 and 16-38). As Lahontan therefore recognizes, these stormwater discharge effluent limits (included in Table 5.6-1, page 25) are not supported by current science with regards to lake clarity and pollutant loading.

Because the use of effluent limits would be retained as an option in certain circumstances, the SED should evaluate alternative effluent limits (e.g. lower limits).

Eliminate Reference to Alternative Deicer Studies.

The paragraph proposed for removal (shown on page 15 of the 7/9/2010 document) is outdated and should be removed. Further, the TMDL documents must explain how, when implemented properly, the TMDL will incentivize the consideration of alternative deicer and traction abrasive materials. However, although the focus of the TMDL is on those constituents which impact water clarity (fine PM, N and P), the amendments to the Basin Plan shall not negate or reduce the responsibility to consider the salt impacts from deicing materials. According to the discussion in Chapter 4.8 of the BP, it appears Lahontan recognizes that vegetation impacts occur from these materials. However, the BP suggests it is TRPA’s responsibility to regulate such impacts. We disagree, because the listed beneficial uses for Lake Tahoe include both aquatic and terrestrial habitat (near the shore), which can be negatively affected by salt compounds. Therefore, with regards to the proposed BPA, it shall be clear that the only impacts of the amendments are to remove the outdated references and that no changes will affect regulation of deicing materials with regards to other pollutants.

Climate Change.

The Basin is already experiencing the impacts of climate change.³ This includes more precipitation falling as rain and less as snow, more rain-on-snow events, flooding events, lake warming, warmer nighttime temperatures (especially during the winter months, further affecting snow levels), etc. Although the model was based on actual historical weather and climate data, we have long advocated that the model incorporate climate change impacts in some way, rather than wait for future adjustments. We note that information regarding climate change impacts and associated land use scenarios was gathered with the intention the information would be used for the TMDL, as summarized by David Halsing (USGS 2006):

“The second part [of the report] summarizes and explains a detailed review of the most recent and relevant scientific literature on climate changes – specifically temperature and precipitation – expected to occur under various greenhouse gas emissions scenarios. From these projections of climate changes, a central estimate of temperature and precipitation changes, as well as ranges of variability around it, is developed for the Sierra Nevada mountain range in the region of Lake Tahoe. The result of the land use/land cover modeling and the changes expected to occur in regional climate both provide ways for users and decision-

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Comment

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³ 2010 State of the Lake Report, TERC

Response

TASC-29: In 2005, the State Water Resources Control Board convened a panel of stormwater experts to evaluate the feasibility of establishing numeric effluent limits for stormwater discharges. The “Blue Ribbon Panel” found “It is not feasible at this time to set enforceable numeric effluent criteria for municipal BMPs and in particular urban discharge.” The full report is available on the State Water Board website:

http://www.swrcb.ca.gov/water_issues/programs/stormwater/docs/numeric/swpanel_final_report.pdf

Stormwater runoff varies widely in stormwater quality from place to place, facility to facility, and storm to storm. Pollutant loads are a function of flow volume and pollutant concentrations. Setting concentration-based limits on average or smaller storm events may result in significant loading during larger storm events that discharge large volumes. Conversely, setting concentration limits on larger events would result in wasteful resource expenditures. The Lake Tahoe TMDL effort establishes a strong link between Lake Tahoe’s transparency and an average annual pollutant load. Consequently, regulating municipal stormwater discharges based on average annual load estimates is a more effective and efficient way to reduce pollutant loads to improve Lake Tahoe’s transparency by providing municipalities the opportunity to optimize stormwater treatment facility design and implement practical load reduction solutions.

TASC-30: If the use of alternative traction abrasive and/or deicing can demonstrably change the estimated average annual urban runoff pollutant load, then the use of such material will be eligible for Lake Clarity Credits. The intent of the noted Basin Plan change is to remove an outdated reference. The change does not affect other deicing material regulations.

makers to generate new inputs for the Total Maximum Daily Load (TMDL) Watershed model, which estimates sediment- and nutrient-loading to Lake Tahoe.”

However, it does not appear that the climate change information provided by the USGS modeling efforts was incorporated into the current TMDL. If this is correct,

- Why did Lahontan decide not to use the climate change information that was gathered specifically for the TMDL?
- What are the loading implications of waiting 1, 2, 5, 10 or more years to adjust the model to reflect impacts of climate change (which generally result in increased loading to the Lake coupled with lake processes that themselves can further reduce mid-lake transparency as well)?

We understand any adjustments based on climate change impacts have been delayed until the implementation of the TMDL (via adaptive management), there will potentially be a lag time of years between the impacts occurring on the ground and updates to the model. Therefore, we will fall further behind with regards to pollutant load reduction. Also, as local jurisdictions are awarded credits for achieving modeled/estimated load reductions, TRPA intends to tie additional development allocations to these credits. Thus, additional development will occur *before* the adaptive management process can account for climate change impacts. How does the TMDL address this?

Considerations for TMDL Implementation.

TASC notes the following concerns regarding the successful *implementation* of the new direction of the BPA:

1. Coverage Removal.

Although Lahontan staff members have explained that it may be possible to get credit for coverage removal and eventually, improvements and restoration to naturally-functioning “stormwater treatment systems” such as flood plains, the current suite of tools provided to implementers for estimating load reductions are more heavily focused on non-natural systems for stormwater treatment (e.g. constructed facilities to capture and infiltrate and/or treat stormwater). According to Lahontan, in general, the removal of 10% coverage may generate an 8% decrease in loading (Project Report: Integrated Water Quality Management Strategy, March 2008, p.55-56). Removing coverage and restoring land, e.g. sensitive lands like SEZs which promote flood plain connectivity and provide for overbanking, will help reduce pollutant loading to the lake. Coverage removal and restoration of land must therefore be heavily incentivized as one of the most efficient options implementers can use for meeting load reductions, especially from an operations and maintenance perspective.

2. Monitoring.

Adequate monitoring is necessary to successfully reduce the pollutant loads entering Lake Tahoe. The Regional Stormwater Monitoring Plan (RSWMP) must provide for adequate monitoring in conjunction with the crediting program and other implementation activities. In addition, the LTIMP stream monitoring program must be fully funded, and partner agencies must be held accountable for their contributions to LTIMP monitoring. For example, will the Forest

Comment

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TASC-31: The statement is incorrect. The climate change analysis conducted during Lake Tahoe TMDL development is described in the Lake Tahoe TMDL Report and is referenced in the proposed Basin Plan amendment. The referenced climate change analysis conducted by the USGS has been incorporated into the Lake Tahoe TMDL.

TASC-32: Because potential effects from climate change may influence the actions needed to achieve pollutant load reductions, global climate change is addressed in the adaptive management of the implementation phase and not in the source analysis portion. The load allocations will not be rendered insufficient to meet the transparency standard if climate change increases loadings because the load allocations are percent reductions from the 2004 baseline. Potential future load increases will require that those load increases be reduced, along with meeting the load reductions specified in the allocation tables, for the load reduction milestones to be achieved and, ultimately, for the numeric target to be attained.

Chapter 12 in the Lake Tahoe TMDL Report describes the adaptive management for the TMDL and explains potential effects from climate change. Though scientific studies concluded that certain effects could happen from climate change, those potential effects are speculative and there is no requirement to include speculative effects in either the margin of safety or the load allocations.

Climate change is expected to occur over a much longer timescale than 1, 2, 5, or 10 years, and it is currently unclear what the loading implications would be from climate change without speculating. If research or monitoring information inform our agency on impacts that are linked to climate change, we will address the issue and adapt per the adaptive management process.

makers to generate new inputs for the Total Maximum Daily Load (TMDL) Watershed model, which estimates sediment- and nutrient-loading to Lake Tahoe.”

However, it does not appear that the climate change information provided by the USGS modeling efforts was incorporated into the current TMDL. If this is correct,

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We understand any adjustments based on climate change impacts have been delayed until the implementation of the TMDL (via adaptive management), there will potentially be a lag time of years between the impacts occurring on the ground and updates to the model. Therefore, we will fall further behind with regards to pollutant load reduction. Also, as local jurisdictions are awarded credits for achieving modeled/estimated load reductions, TRPA intends to tie additional development allocations to these credits. Thus, additional development will occur *before* the adaptive management process can account for climate change impacts. How does the TMDL address this?

Considerations for TMDL Implementation.

TASC notes the following concerns regarding the successful *implementation* of the new direction of the BPA:

1. Coverage Removal.

Although Lahontan staff members have explained that it may be possible to get credit for coverage removal and eventually, improvements and restoration to naturally-functioning “stormwater treatment systems” such as flood plains, the current suite of tools provided to implementers for estimating load reductions are more heavily focused on non-natural systems for stormwater treatment (e.g. constructed facilities to capture and infiltrate and/or treat stormwater). According to Lahontan, in general, the removal of 10% coverage may generate an 8% decrease in loading (Project Report: Integrated Water Quality Management Strategy, March 2008, p.55-56). Removing coverage and restoring land, e.g. sensitive lands like SEZs which promote flood plain connectivity and provide for overbanking, will help reduce pollutant loading to the lake. Coverage removal and restoration of land must therefore be heavily incentivized as one of the most efficient options implementers can use for meeting load reductions, especially from an operations and maintenance perspective.

2. Monitoring.

Adequate monitoring is necessary to successfully reduce the pollutant loads entering Lake Tahoe. The Regional Stormwater Monitoring Plan (RSWMP) must provide for adequate monitoring in conjunction with the crediting program and other implementation activities. In addition, the LTIMP stream monitoring program must be fully funded, and partner agencies must be held accountable for their contributions to LTIMP monitoring. For example, will the Forest

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TASC-33: Any activity, such as new development, re-development, or other land disturbing management actions, has the potential to increase localized (i.e. on a parcel scale) pollutant loading. To ensure that future growth does not increase pollutant loads, the jurisdictions must reduce pollutant loads from the established baseline condition for that jurisdiction. This means that load reductions must be net reductions from a jurisdiction that account for changes in both land use, transportation modes and uses, and stormwater treatment. A municipality must annually demonstrate on a catchment (i.e. sub-watershed) basis that no increased loading in fine sediment particle, total nitrogen, and total phosphorus will result from any land disturbing activity permitted in the catchment. Efforts to eliminate the increased loads from these land disturbing activities will not be counted towards the annual load reduction requirements.

The PLRM uses a continuous simulation based on 18 years of meteorological data. In the future, the PLRM could be updated with additional meteorological data, if needed.

Section 12.2 in the Lake Tahoe TMDL Report discusses some of the potential impacts from climate change. Haling (2006) summarized that the central projection of climate change model outputs suggests that by 2050, Lake Tahoe will see average temperatures increase by approximately two degrees Celsius and average annual precipitation is expected to decrease by 10 percent. This shift may influence local stormwater hydrology, and stormwater dischargers may need to adjust future stormwater practices to ensure management measures are sufficient to meet the load reduction requirements.

TASC-34: Each of the urban jurisdictions has the ability to choose how they will meet their annual and five-year load reduction requirements. The Lake Clarity Crediting Program will award credits based on estimated annual average fine sediment load reductions. The estimation tools are not “heavily focused on non-natural systems” – the Pollutant Load Reduction Model accounts for a variety of load reduction options, including, but not limited to, changes in land use, infiltration, treatment basins, and roadway management actions. There is no evidence to support policy that would “heavily incentivize” one urban stormwater management approach over another – the program already provides appropriate incentives for all load reduction actions, including coverage removal.

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TASC-35: The proposed Basin Plan amendment and Chapter 13 of the Lake Tahoe TMDL Report describes the monitoring program needed for the TMDL. Monitoring is not needed to successfully reduce loading to the lake, but does assist implementers and regulators in providing information on efficacy of actions. As stated in Chapter 13, “the LTIMP stream network will play a key role in evaluating load reduction from these [forested] land-uses”. Currently the LTIMP program is undergoing a revision based on a comprehensive evaluation of the data needs in the basin, the revision should include the TMDL needs for forested uplands monitoring and additional particle size distribution monitoring. Monitoring is needed to ensure forest management actions, including fuels reduction efforts, are evaluated at either the project or sub-basin level to determine whether the measures are reducing fine sediment particle and nutrient loads. The Water Board supports shared funding of the monitoring program and has California Water Code authority to impose monitoring requirements to entities contributing pollutant loads.

Service be responsible for ongoing monitoring in the uplands and contribute to LTIMP status and trend data? Without consistent stream monitoring, it will be difficult if not impossible to track pollutant concentrations from public property, including land disturbance, and unpaved roads.

For the urban areas, monitoring must be performed for all projects of different BMP designs, different geomorphic states, including soil types, infiltration rates, slope, size and other significant differences.

Actual, on-the-ground measurements are needed to assure the actions being taken by the local jurisdictions are achieving the required load reductions and to justify the expenditure of public and local funds. Models such as those associated with the Crediting Program can provide useful planning tools for estimating the benefits of a given project. However, without confirmation through adequate monitoring, the models provide limited value. The RSWMP monitoring network must be fully developed to collect the information necessary to measure baseline loads and confirm load reductions post-project construction and in the long term. Cost should not affect the development of the scientific monitoring network. Instead, once the network is developed, Lahontan should identify how the costs will be covered through implementation activities (e.g. included in NDPES permits). Credits should only be awarded when monitoring is completed to confirm load reductions.

However, page 12 states: *“The Regional Board expects the monitoring plan components to be fully developed by agency stakeholders within the first two years following TMDL adoption by USEPA, and full monitoring program operation is expected by the third year.”*

- It appears that the monitoring plan will not be fully developed before NPDES permits are issued. Is this correct?
- If so, how will Lahontan know what to put in the NPDES permits in order to adequate cover monitoring needs? How will baseline loads be measured prior to implementation of projects for which entities will receive credits upon project completion?
- Why will two more years be required for development of the monitoring plan?

Entities should not be awarded credit, especially where TRPA will correlate credits with approval of additional development allocations, prior to completion and operation of the monitoring network.

Page 12 further states that: *“Once fully developed, the monitoring program will assess progress of TMDL implementation and provide a basis for reviewing, evaluating, and revising TMDL elements and associated implementation actions. The monitoring program will cover each of the four major pollutant sources and will monitor the in-lake responses to the pollutant loading. The source monitoring will focus on the largest pollutant source, urban uplands. The in-lake monitoring has been established and operating for about 40 years and is expected to continue.”*

- What is the difference between the “monitoring program that will cover each of the four major pollutant sources” and the “source monitoring?”

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TASC-36: The proposed Basin Plan amendment describes detailed monitoring plans for each pollutant source and for ongoing monitoring of tributary and lake conditions. The Water Board plans to develop more specific urban stormwater monitoring requirements prior to updating the Municipal NPDES stormwater permits.

TASC-37: As described in the urban upland portion of the implementation plan, the Water Board will require municipalities to prepare jurisdiction specific baseline load estimates. These baseline load estimates will provide the basis for Municipal NPDES stormwater permit load reduction requirements. At a project or catchment scale, each jurisdiction will conduct a site-specific baseline load analysis to evaluate pre- and post-project average annual loads to determine Lake Clarity Credit potential.

TASC-38: Some limited pollutant load and load reduction monitoring is ongoing and is expected to continue. More detailed source-specific monitoring and adjustments to existing monitoring programs will be needed to support an assessment of basin-wide loading conditions. Water Board staff anticipate the effort will be accomplished within two years of TMDL adoption, however initial monitoring requirements will be included in the municipal NPDES permit update for the urban runoff source category.

TASC-39: The proposed Basin Plan amendment describes detailed monitoring plans for each pollutant source and for ongoing monitoring of tributary and lake conditions. There is no difference between “source monitoring” and “monitoring that will cover the four major pollutant sources.” While research is underway to better understand the water quality benefits associated with stream restoration actions, there are no plans to develop TMDL-specific monitoring efforts for shoreline erosion or groundwater inputs.

Will the monitoring network proposed also monitor the three other sources?

- This also implies the monitoring program will continuously monitor the in-lake responses to the pollutant loading. Because clarity measurements will be taken on a regular schedule, why wait 15 years to assess load reductions versus clarity response?⁴ We understand that due to environmental factors, conclusions about clarity response cannot be made on just a year or two of readings. Lahontan staff has stated that it is assumed that a five-year time period is probably sufficient to reflect trends. Therefore, if clarity continues to decline for five+ years, yet jurisdictions are being awarded credits for estimated load reductions, will Lahontan really wait another 10 years to assess why clarity is declining as pollutant loads are supposedly being reduced (see next paragraph)?

3. Adaptive Management.

The term “adaptive management” has been used for years by numerous Lake Tahoe Basin entities. The application, however, has not been very successful. According to Lahontan staff, the intent of the TMDL program will be to incorporate new findings (e.g. measurement data, new technology, etc.) into the program and implementation tools (the Crediting Program) in a timely manner. For example, future monitoring may show that more or less fine particulate matter was removed by a given BMP than currently estimated. In such a situation, the TMDL model(s) will be adjusted to reflect this different load reduction, and jurisdictions’ Stormwater Management Plans will also be adjusted. In concept, this type of adaptive system can be beneficial, especially when the program is beginning with recognition of research and monitoring gaps (including an expanded monitoring network). However, because thus far adaptive management has been extremely slow, at best, we are concerned that a lag time in “adapting” TMDL tools could lead to the award of more credits than should actually be received.

Page 12 states that: *“As part of the TMDL Management System, the Regional Board will annually assess relevant research and monitoring findings and may adjust annual load reduction targets and/or the TMDL implementation approach as needed.”*

- What mechanism assures that the Board will annually review the entire program, including the success of the implementation management plan?
- What specific mechanisms will ensure that TMDL tools will be adapted in a timely manner?
- What are the criteria the Board will use to assess whether to make adjustments annually?
- What is considered “as needed” and who will make this determination?

In other words, when new information is found that necessitates a model/crediting program update, what mechanisms will ensure this will be done

⁴ Page 12 states: “Following the first fifteen year implementation period of this TMDL, the Regional Board will evaluate the status and trend of the lake transparency relative to the load reductions achieved.”

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Response

TASC-40: Given the existing inter-annual variability in precipitation and runoff, a five-year period is being considered, at this time, to be a sufficient milestone to track progress within an adaptive management framework. It is envisioned that leading up to these five-year review points that relevant research data, an accounting of credits awarded, BMP effectiveness results, EIP implementation monitoring, BMP maintenance evaluations and other relevant information will be assembled and evaluated. The Lake Clarity Model will be used to help provide estimates on the expected improvement to transparency (based on estimated load reduction and actual precipitation and hydrology) and this will be compared to the measured Secchi depths in the lake. If it is found that there is a significant discrepancy between the expected and observed lake response, a number of issues can be investigated including, but not limited to, the need for Lake Clarity Model revision based on new scientific information, revision of the Pollutant Load Reduction Model, revision of BMP RAM, evaluation of BMP project effectiveness, etc.

TASC-41: The TMDL Management System, once developed will have a set of standard operating procedures, where on an annual basis, a synthesis of findings report will be created that will synthesize the new research and data/information that may or may not necessitate a change in the implementation plan. On a 5 year basis, the milestones will undergo an evaluation to see if the load reductions are occurring as expected, both with the use of TMDL implementation tools and the actual lake response. Chapter 12 in the Lake Tahoe TMDL Report describes the adaptive management program for the TMDL. Any needed changes will be reflected in the next 5 year Municipal NPDES Permit.

TASC-42: Chapter 12 in the Lake Tahoe TMDL Report describes the adaptive management program for the TMDL, which includes a process for listing the key areas of uncertainty for research and a process for incorporating new research findings into implementation program changes.

TASC-43: The specific criteria that will be used for assessing when adjustments will be made will be developed as part of the TMDL Management System.

TASC-44: The Water Board and NDEP will make the determination when adjustments are needed based on the new research or monitoring findings, and expect that general criteria will be developed as part of the TMDL Management System. This process will also involve stakeholder input for recommendations to adjust load reduction milestones and/or the implementation approaches.

TASC-45: Same as Response TASC-42

immediately, and in a way that another year of crediting does not occur based on outdated information?

Will the scientific community, especially researchers from TERC, UCD and other institutions that helped develop the TMDL, be included in the adaptive management process? If so, how? If not, who will assess the new science and determine whether a change to the TMDL implementation (or TMDL itself) is warranted?

4. Funding

The issue of funding has been one of large debate and contention. Although Lahontan and TRPA have explained that additional funding opportunities will result once the TMDL is adopted (i.e. through federal and state grant programs aimed at TMDL implementation), and TRPA also intends to provide financial “incentives” to entities who achieve their load reductions (or “credits”), the issue of cost continues to be one of the largest concerns expressed by all parties. Therefore, the final TMDL documents should discuss in greater detail the additional funds that will actually be available to assist in implementation once the TMDL package is adopted.

5. Enforcement.

Regulations are only effective if adequately enforced. While we realize staff cannot inspect every project or assumption used by implementers to estimate their load reductions (e.g. through the clarity crediting model), there must be sufficient enforcement to deter inadvertent or direct manipulation of model inputs so that anticipated load reductions occur and credit is not received for load reductions that do not occur.

6. Baseline Estimates.

In the current TMDL package a baseline pollutant loading to the lake has been estimated for 2004 as one basin-wide value. However, the baseline values for each jurisdiction’s 2004 contribution have not yet been estimated. According to Table 5.18-5, local jurisdictions will be required to calculate their 2004 baseline load values within two years of TMDL adoption using the specified tools.

“To ensure comparability between the basin-wide baseline load estimates and the jurisdiction-scale baseline load estimates for urban runoff, municipalities and the state highway department must use a set of standardized baseline condition values that are consistent with those used to estimate the 2003/2004 basin-wide pollutant loads. Specifically, baseline load estimate calculations shall reflect infrastructure and typical basin-wide conditions and management practices as of October 2004.” (p. 9)

We understand the tools they will use to determine their individual 2004 baseline values will be based on a different model than the one that provided the 2004 basin-wide baseline loading. Thus some minor differences will be expected when all individual values are summed together. However, what will Lahontan do if the sum of the individual jurisdictions’ baseline levels fall far short of the basin-wide loading estimate? How will such a discrepancy be resolved? If not resolved, we may see local jurisdictions estimating lower baseline values than exist and thus

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Response

TASC-46: It is expected the scientific community and researchers that are familiar with the TMDL will be involved in the adaptive management process. Chapter 12 in the Lake Tahoe TMDL Report describes the adaptive management program for the TMDL, which includes a process for listing the key areas of uncertainty for research and a process for incorporating new research findings into implementation program changes.

TASC-47: The Water Board is not a funding agency and does not have information to support a discussion of "additional funds that will actually be available to assist in implementation..." As with all Basin Plan requirements and implementation plans it is the responsibility of the dischargers to develop or seek funding mechanisms (grants, loans, bonds, etc.) to fund needed improvements. Basin Plan requirements are not based on the "known" available of future funding as this rarely exists at the time Basin Plan amendments are considered. The Basin Plan amendment cites funding made available over the last 10 years as a basis of the timing of future requirements. If dischargers cite funding short-falls as a basis for failing to meet load reduction requirements the Water Board has enforcement discretion on permit or waste discharge requirement violations.

TASC-48: The Pollutant Load Reduction Model was developed with built-in protections to flag input values that are outside of acceptable ranges. Water Board staff will review baseline load estimates to ensure that modeled results are based on reasonable and appropriate modeling parameters. For individual projects and catchments, Water Board staff expect to be part of multi-agency technical advisory committees that will assist with and review modeling efforts. This is similar to the current technical advisory committee process used during stormwater treatment and erosion control project development efforts. The Water Board has broad enforcement authority and has discretion to exercise its authority if a municipality fails to meet load reduction requirements or is found to have knowingly submitted false information or unjustifiably manipulates load estimation tool parameters.

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Will the scientific community, especially researchers from TERC, UCD and other institutions that helped develop the TMDL, be included in the adaptive management process? If so, how? If not, who will assess the new science and determine whether a change to the TMDL implementation (or TMDL itself) is warranted?

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The issue of funding has been one of large debate and contention. Although Lahontan and TRPA have explained that additional funding opportunities will result once the TMDL is adopted (i.e. through federal and state grant programs aimed at TMDL implementation), and TRPA also intends to provide financial “incentives” to entities who achieve their load reductions (or “credits”), the issue of cost continues to be one of the largest concerns expressed by all parties. Therefore, the final TMDL documents should discuss in greater detail the additional funds that will actually be available to assist in implementation once the TMDL package is adopted.

5. Enforcement.

Regulations are only effective if adequately enforced. While we realize staff cannot inspect every project or assumption used by implementers to estimate their load reductions (e.g. through the clarity crediting model), there must be sufficient enforcement to deter inadvertent or direct manipulation of model inputs so that anticipated load reductions occur and credit is not received for load reductions that do not occur.

6. Baseline Estimates.

In the current TMDL package a baseline pollutant loading to the lake has been estimated for 2004 as one basin-wide value. However, the baseline values for each jurisdiction’s 2004 contribution have not yet been estimated. According to Table 5.18-5, local jurisdictions will be required to calculate their 2004 baseline load values within two years of TMDL adoption using the specified tools.

“To ensure comparability between the basin-wide baseline load estimates and the jurisdiction-scale baseline load estimates for urban runoff, municipalities and the state highway department must use a set of standardized baseline condition values that are consistent with those used to estimate the 2003/2004 basin-wide pollutant loads. Specifically, baseline load estimate calculations shall reflect infrastructure and typical basin-wide conditions and management practices as of October 2004.” (p. 9)

We understand the tools they will use to determine their individual 2004 baseline values will be based on a different model than the one that provided the 2004 basin-wide baseline loading. Thus some minor differences will be expected when all individual values are summed together. However, what will Lahontan do if the sum of the individual jurisdictions’ baseline levels fall far short of the basin-wide loading estimate? How will such a discrepancy be resolved? If not resolved, we may see local jurisdictions estimating lower baseline values than exist and thus

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immediately, and in a way that another year of crediting does not occur based on outdated information?

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TASC-49: The Pollutant Load Reduction Model was developed with the input of stormwater managers to provide a continuous simulation tool to evaluate pollutant load and load reduction opportunities in the Lake Tahoe basin. Municipal jurisdictions in the Lake Tahoe area have already used this tool to conduct jurisdiction-scale baseline load analysis, and we anticipate others will similarly use this tool or an equivalent method. The proposed Basin Plan amendment has been changed to state that the Water Board may accept alternative load estimation tools provided such tools “demonstrably produce similar results” to the Pollutant Load Reduction Model or other continuous hydraulic simulation methods.

Additional guidance will be provided, and Water Board staff will review draft products to ensure consistent methods and model inputs are used. The adaptive management process described in the Lake Tahoe TMDL Report and the proposed Basin Plan amendment provide the framework for adjusting the TMDL to address load estimate discrepancy if necessary.

Regardless of baseline load estimates, each municipal jurisdiction must submit plans to reduce its pollutant load by the percentages required by the Lake Tahoe TMDL allocation schedule. The relative magnitude of the needed reduction is independent of the baseline load estimate value.

setting the stage for not having to reduce as much loading. Lahontan needs a solid plan to address the individual jurisdictions' baseline values to ensure that when totaled together, they are within 5% of the basin-wide 2004 baseline value that has already been estimated.

In conclusion, we look forward to working with Lahontan staff on the upcoming "implementation phase" of TMDL development. A serious, rigorous and detailed implementation management plan can provide for success of the TMDL, especially if accompanied by a strong commitment by the Board to on-the-ground monitoring, timely adaptive management and a very clear plan for accountability, transparency, responsibility, timelines, and deadlines.

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Continued, see Response TASC-49 on previous page.

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