

PATHWAY Forum Meeting Summary

PATHWAY FORUM MEETING
September 27, 2007
Lake Tahoe Community College
South Lake Tahoe, California

MEETING ATTENDEES

Forum Members: Laurel Ames, Mike Berg, Mike Bradford, Blaise Carrig, Carol Chaplin, Jim Crowley, Pat Davison, Michael Donahoe, John Falk, Elise Fett, Dave Hamilton, Bill Hetland, David Jinkens, Ellen Lapham, Steve Leman, John McCall, Jennifer Merchant, Don Morehouse, Barbara Perlman-Whyman, Jill Sarick Santos, Glen Smith, Steve Teshara, Patrick Wright

PATHWAY Executives and TMDL Team: Harold Singer, Lauri Kemper, Doug Smith, Bob Larsen, Kim Gorman, Hannah Schembri (Lahontan); Terri Marceron, Bob King (USFS); Tom Porta, Jason Kuchnicki (NDEP); John Singlaub, Larry Benoit (TRPA).

Project Team: Geoff Schladow, John Reuter (Tahoe Environmental Research Center); Jeremy Sokulsky, Chad Praul (Environmental Incentives); Michelle Sweeney (Allegro Communications).

Kearns & West Facilitation Team:

Anna West, Christine Kennelly, and Janet Thomson

WELCOME, INTRODUCTIONS, AGENDA REVIEW

Anna West reintroduced the facilitation team, including Christine Kennelly and Janet Thomson, and welcomed all Forum members. Anna provided a brief overview of the day's agenda and presented the groundrules for the meeting.

INTRODUCTORY TMDL PRESENTATION

Harold Singer welcomed all the Forum members and public participants on behalf of the agency executives. The TMDL team is looking for public feedback on pollutant control opportunities and Harold requested that Forum members communicate with the TMDL team both during meetings and between meetings.

The question for the next few meetings will be: **How are we going to restore Lake Tahoe's famed clarity?** The TMDL is a science-based approach to developing policy. Today, the TMDL team will provide that scientific background to allow the Forum to provide informed feedback on pollutant control strategies. The TMDL team has created three documents: *Charting the Course to Clarity*, a summary document that everyone in the basin should read; the *Lake Tahoe Total Maximum Daily Load Technical Report*; and the *Pollutant Reduction Opportunity Report*.

The Lake Tahoe TMDL work completed thus far is one of the most comprehensive scientific studies done nation-wide for a TMDL. Three people here today have worked tirelessly on this effort — John Reuter, Dave Roberts, and Jeremy Sokulsky — and with them, a team of over 150 scientists and engineers. The information you will see today is a compilation of pollutant control opportunities that we can quantify. There are opportunities that we know we cannot quantify, and those are not included in this report. They may be good candidates for future study.

After we identify the strategies to reduce pollutant inputs to Lake Tahoe we will continue to ask ourselves questions. We will monitor whether the expected reductions are being achieved, determine whether clarity is improving, and identify the linkages between actions and clarity. We will refine our strategies as needed to achieve our clarity goals. And as technology changes we will constantly be looking for better ways to improve the Lake's clarity. The TMDL process is adaptive and in continual refinement.

Today we will focus on the science that has been completed. At our October meeting we will bring you initial runs of the clarity model based on several alternative strategies. We will ask you to react to those model runs and let us know what can be achieved, in terms of public acceptability and feasibility, and what different packaging options we should consider. By the December Forum meeting we will have reviewed your feedback and will provide you with the results of additional model runs. The December meeting will be the last time that we will ask for Forum input on this issue.

It would be great if, in December, the Forum has consensus about strategies. However, if there is no consensus, we still want to have as much feedback about strategies from individual Forum members as possible. Regardless of whether we have consensus or not, we will seriously consider the feedback from the Forum when we make our recommendations on strategies for the TMDL. We want as much information as we can get from you regarding the pros and cons of the alternatives, how the pollutant control opportunities will be received by the community, whether there are additional things we can do to increase the public acceptability of these opportunities, and whether there are additional funding opportunities that would improve the feasibility of the strategies we are putting forward. We will also want to know whether it is anticipated that the strategies will cause either positive or negative effects on other thresholds that are part of the Pathway process.

All of this will come together in the Regional Plan EIS. TRPA has put out the EIS for scoping and the TMDL team is providing input into that process with the full range of alternatives outlined in the Pollutant Reduction Opportunity Report. As we move through the process we will refine pollutant control opportunities into strategies that we will feed back into the EIS process. Eventually, TRPA will come out with a draft EIS and a draft Regional Plan that will be considered by the Regional Board by the end of 2008. Shortly thereafter, the Regional Board and NDEP will consider adoption of the TMDL. Ideally, those plans will fit together like a glove.

Q. Does the TMDL team have any pre-disposition to what pollutant control opportunities and strategies will be implemented or will the team be seriously considering all of our feedback with an open mind?

A. There are no preconceived notions at this point. The Regional Board will base their decision on the record before them. They may reject what we recommend, but we will put a strategy before

them and ask them to seriously consider what we recommend and what we tell them the Forum has recommended.

Q. Will there be an opportunity for non-Forum members to comment?

A. There will be many public opportunities and comments throughout this TMDL development process as we put forward a recommendation. The Regional Board will likely hold a hearing within the Basin.

CORE QUESTIONS OF THE TMDL – PRESENTATION ONE

John Reuter, Associate Director of the Tahoe Environmental Research Center at UC Davis, provided an overview of the TMDL science completed to date. He noted that there are still some holes in the data but there is a lot of information available and the tools and models that have been produced are good scientific work.

The TMDL research program was created to proactively identify and address critical knowledge gaps and to develop a science-based approach to reducing pollutant loads. There have been at least 28 research units involved in this work, ranging from university/academic research to state/federal research to private consultants. The work is based on historical Lake Tahoe data, literature, new monitoring, lab experiments, field experiments, demonstration projects, statistical analysis, modeling (with verification), and best professional judgment.

One key finding of the TMDL research is that very fine, microscopic soil particles coming from the air and erosion and other sources are having a big effect on lake clarity. While nitrogen and phosphorous cause algal growth, creating clarity problems, the effect of fine soil particles on clarity is greater and was not known before 1999-2000. Another key aspect of the TMDL work has been the development of models for all areas within the Tahoe basin including urban runoff, forest, groundwater, atmospheric, stream channel, and lake response. These models have been peer reviewed either at the national level or in scientific publications.

We have found that urban areas contribute a lot of fine particulates. Upland and non-urban upland areas contribute significant phosphorous. Atmospheric sources, particularly vehicle exhaust, are responsible for nitrogen deposition into the Lake. In terms of certainty, we are most confident about the information related to upland and atmospheric phosphorous and nitrogen sources as we have been studying those for many years. We have a medium level of confidence about fine particles since that work only began in 1999-2000.

CORE QUESTIONS OF THE TMDL – PRESENTATION TWO

Geoff Schladow, Director of the Tahoe Environmental Research Center at UC Davis, presented information on the Lake Clarity Model. Last year the TMDL team showed “preliminary” results from the model to the Forum and today we will share the “final” results. There really is no final model, as the model will be constantly updated with new information and will always be a work in progress.

Last year, in a preliminary run of the model, we found that if we reduced all nutrient inputs to the lake by 35% over a period of 20 years we would result in a 30 meter improvement in clarity. Based on the new and improved information we have now — based on input variables including inflows, climate, outflows, atmospheric deposition, groundwater, and bathymetry — we can see that if we did a 55% reduction in all pollutant loads from all sources, over 20 years, we could get a 30 meter improvement in clarity.

The graph shows that there is a range in expected results for each scenario that we run. If, for example, we tried to reach 24 meters of clarity, we would need about a 25% pollutant reduction from all loads and all sources. Alternatively, if you reduced urban loads by 75% then you could get a reduction similar to a 55% reduction from all loads and all sources. These analyses show that there is a wide range of options, and the Secchi depth will vary depending on the combination of pollutant load reductions that we choose. We are studying the costs required to implement pollutant reductions of all these loads to help everyone understand how much it will cost for us to get to our clarity goal.

In conclusion, we have a process-based model that allows for examination of the entire range of management, climate, disaster, growth, and other scenarios. The model is built on an established, peer-reviewed framework. We have found that fine particles dominate the mid-lake clarity and urban areas are the dominant sources for these particles. There are countless ways in which the desired load reductions can be achieved and the model can be used to test what the results will be. Stakeholders must decide which load reductions are desired.

Q. What is the size of fine sediment and where does it come from? How long will a particle be suspended?

A. The size ranges between 1 and 10 microns. Fine sediments predominantly come from urban areas but are also from road erosion and other areas with impervious cover. These particles do settle in the lake. If we were to evacuate the basin for 20 years the particles would eventually settle out and we would return to 30 meters of clarity.

Q. What are you considering urban for these studies?

A. Urban is defined as single-family, multiple-family, commercial, and primary/secondary roads. We get fine particles from each of those areas, especially from primary/secondary roads.

Q. Do we have data about the effects of fires on the deposition of nitrogen and phosphorus in the lake?

A. We do not have a lot of data on the effects of fire, but we are beginning to get some data from the Angora fire. Monitoring stations were operative on the Lake within the first 24 hours of the fire, measuring direct depositions to the Lake via the air. Now and in the coming months we are measuring effects of the fire on Angora Creek.

Q. Why, in any given year, are you getting ranges between 10 and 30 meters of clarity?

A. Variability is usually due to hydrologic inputs such as runoff from snowmelt. Also, clarity naturally varies at different times of the year as the Lake waters turn due to temperature changes.

Q. Have you had the opportunity to run the model retrospectively to see how incremental land use has affected clarity?

A. We are hoping to fill in some gaps in that research using satellite data from the 1970s to see if it corresponds to clarity changes. We will run the information through the watershed and lake models.

Q. Are we doing something to help NDOT to get funding to come up with a better system of erosion control?

A. We are working with partners to make them more aware of the effects of fine particles and how they are tied to the TMDL. We recently got a grant from the Nevada license plate fund to help them think about this problem.

Comment: We need to focus our thinking on whether the technology exists to help us reduce fine pollutants in urban areas. Then we need to consider the regulatory aspect, and the funding. If we focus regulatory policies on the built environment then we should also focus on getting federal and state resources to assist.

Q. Do we know yet what the effects are of pile burning, controlled burns, wildfires, pollen, and other sources like these?

A. We are beginning to learn about these from different studies. The California Air Resources Board funded a study on some of these and found that fires have a huge effect on visibility but may not have a huge impact on lake clarity. Most of the clarity effects are coming from soil particles. Clarity is very dependent upon the size and composition of the individual particles.

INTRODUCTION TO POLLUTANT INPUT REDUCTION OPTIONS

Bob Larsen (Lahontan) provided an introduction to pollutant control opportunities. We now have, on a Basin-wide scale, estimates of potential load reductions from a variety of different sources which will allow us to assess cumulative benefits and relative costs. However, the analysis is not applicable on a project scale and has been limited to quantifiable actions, as Harold mentioned earlier.

We had four Source Category Groups studying the information: atmospheric deposition, urban runoff and groundwater, forest runoff, and stream channel erosion. Watersheds that had impervious cover of less than 1% we defined as forest, while those with impervious cover greater than 1% we defined as urban. We then had a Source Category Integration Committee, comprised of Lahontan, NDEP, and TRPA staff and support from John Reuter and other consultants. This committee helped to guide the source category groups and provided direction to ensure consistency among the groups. Each group also had two to three technical reviewers.

The four Source Category Groups followed the same general process: first, selecting and screening pollutant control options; second, performing a site scale analysis; and third, conducting a Basin-wide extrapolation (including pollutant reduction estimates and cost).

The atmospheric deposition group found that this source is responsible for more than half of the total nitrogen load reaching the Lake, mostly from motor emissions and dust. Options for reducing emissions include reducing vehicle miles traveled (through incentives and through transit options). Options for dust control include efficient roadway sweeping, switching to deicers, and paving or

graveling unpaved surfaces. The sources are in-Basin and the distance of the source from the Lake is important. There is a great opportunity for nitrogen reduction and for fine sediment reduction.

The forest upland group looked at unpaved road runoff and forest management practices. Some opportunities to address pollutant loads include unpaved road best management practices (BMPs), mulching/tilling recreation disturbed areas, restoring legacy road and trails, and creating advanced BMPs for forest management. Analysis showed that there are load reduction opportunities associated with forest management work.

The urban runoff and groundwater group looked at impervious surface runoff, erosion, traction abrasives, and fertilizers. The opportunities to reduce pollutants are well-known and include source control methods, reduction of impervious cover, runoff infiltration, storm water treatment, and fertilizer management. Urban runoff/groundwater is the largest pollutant control opportunity and there are a wide range of reductions ranging from current practices to more advanced treatment methods.

The stream channel erosion group focused on bank erosion only, not the pollutants carried by the stream. The primary sources examined were the Upper Truckee River, Ward Creek, and Blackwood Creek, which represent more than 95% of the pollutant source. Reduction opportunities include full unconstrained restoration, targeted bank and bed protection, and a mix of restoration and bank protection. This is a fairly small source, about 4% overall, yet restoration options will offer multiple benefits (to ecosystem and water quality as well as to clarity).

Q. Can we consider using recycled tires or other pavement forms that might alleviate the need for sanding, deicing, and resurfacing roads? (Lower maintenance and therefore less traffic/car idling and less dust and particles in the air and runoff.)

A. We will add that as an option to look into.

Q. Are you examining the trails system as a source of fine particles or is the effect too minor to be counted?

A. Trails are accounted for within the roads category. Those trails that aren't mapped fall into the "other disturbed areas" category.

Comment: Often if trails are included in the roads category they will receive less funding than if they are considered under restoration funding or management practices. Trails have separate issues than roads even though there may be similar disturbances on both surfaces.

Q. Do you have a way to quantify how the benefits change when you are considering improvements from 28-29 meters as opposed to 25-26 meters of clarity? Is there a point of diminished return?

A. We can look into that. We have the ability to look at reductions and run them through the clarity model.

THE CLARITY CHALLENGE

Harold Singer presented the Clarity Challenge to the Forum as a way to plan for lake management for the next 20 years. The TMDL team has set an interim clarity target of 75-80 feet of clarity to achieve in that time period. The regulation requiring achievement of 97.4 feet of clarity is the same as it has been. The Clarity Challenge focuses on an interim target for the next 20 years. The goal is ambitious but achievable. If we can make this improvement in 20 years we will know that it is not just variation but an actual trend in clarity improvement. This interim target will allow us to implement pollutant control reductions over the next 15 years and determine what the clarity improvements are during the last 5 years of the 20-year phase.

Tom Porta (NDEP) concurred that the Clarity Challenge is a smart and realistic way to achieve clarity gains and plan for pollutant reductions. The Challenge will also allow the TMDL team to learn about the pollutant control options and figure out whether we are implementing the most cost-effective controls. Tom clarified that the TMDL approval process is different in Nevada than in California. In Nevada, the TMDL does not require approval from a board but only from the NDEP administrator.

After the Clarity Challenge presentation, Mike Bradford raised a concern on behalf of the tourism/business constituency regarding an effort by the environmental interests to block funding for the Pathway process that his constituency feels is a violation of the Forum groundrules. Mike noted that he thought this issue was important for the group to address and resolve, not at the current meeting but in the future. Rochelle Nason responded that the conservation community has not tried to block funding for the process. She explained the history of seeking funding for conservation in Tahoe and noted that recently the conservation community has been concerned about what the funding has been earmarked for. It is important to the conservation community that the procedures established to amend Thresholds, set in 1982, be followed. With a lack of clarity on whether those procedures and Thresholds were going to be maintained, the conservation community did not support seeking Congressional funding without consensus on the projects for which the funds would be used.

Christine thanked Bill Hetland and the El Dorado County Water Agency for sponsoring lunch for the Forum.

POLLUTANT REDUCTION OPPORTUNITIES

Chad Praul, a consultant for Lahontan, provided additional information on pollutant reduction opportunities. He presented a chart that contains information on estimated pollutant loads and the cost for implementing each over a 20-year period. Chad then explained the detail of the treatment tiers for each source category. Generally, one tier would represent a baseline set of pollutant reduction actions, while another tier would represent a significant step beyond the baseline, and a third tier represents the maximum effort toward pollutant reduction measurable.

For urban runoff and groundwater, tier 1 constitutes enhanced versions of recent EIP projects and would cost about \$1.5 billion over 20 years. Tier 2 represents advanced practices and a greater level of project maintenance. Tier 2 has higher load reductions but also higher cost. Tier 3

represents a collection of pumping and treatment of storm water to several centralized facilities in combination with advanced practices. This would provide significant load reductions. Tier 3 includes pumping and treatment in 60% of urban areas with tier 2 advanced treatments in the other 40% of urban areas.

Tier 1 for atmospheric deposition sources represents a baseline with no reduction estimated. Tier 2 includes stationary source controls and a reduction of vehicle miles traveled (VMT) by 10%. Tier 3 reduces VMT by 25% and increases stationary source controls. This would cause a 13% reduction in nitrogen at a cost of \$1.3 billion over 20 years. The costs for tier 2 are considered zero because there are ways to combine user fees, incentives for public transit, and parking fees to generate revenue.

For forest management, tier 1 represents surface treatments and currently required management practices. Tier 2 includes mulching treatment and full management practices, resulting in slightly higher load reductions. Tier 3 includes tilling and full restoration to "native condition" which is fairly pricy. It is important to note that roads and trails, the most highly disturbed areas in the forests, only comprise about 0.2% of the basin and therefore there are not a lot of reductions that can be done from that source. Therefore the cost-effectiveness when you look at all these areas is not much different between tiers 1 and 3. It will be more effective to focus on roads and moderately-disturbed recreation areas rather than attempting to restore the entire basin.

For stream channel sources, tier 1 represents a full restoration of stream channels (Upper Truckee River, Blackwood Creek, and Ward Creek). Tier 2 is a mix of stream channel restoration and simple bank stabilization, while tier 3 is a very basic and inexpensive bank protection and stabilization. The load differences are not that large between the three tiers of effort and the costs follow a reducing trend. While bank protection gets you more load reduction, a full stream restoration will allow the stream to reconnect with the natural floodplain, in turn allowing for treatment of materials that the stream is carrying.

In summary, the area of biggest potential for load reductions is in the urban/groundwater category. There are now numbers on the table for you to review and consider while you provide feedback on preferred pollutant load reduction strategies.

Comment: We should be able to see the true costs for atmospheric deposition tier 2 rather than considering it free because you have identified potential revenue sources.

Q. Does this work assume current levels of road sanding? If so, banning road sanding would be free, giving us a lower starting point.

A. Yes, the work assumes current levels of sanding.

Q. Can you include the control of development in this work? Is it measurable?

A. We looked at the potential of removing impervious cover and did not find significant changes in the development projects. Within the urban source category group, tier 1 assumed 50% implementation of private property BMPs while tier 2 assumed 100% private property BMPs. The assumptions used existing development rules, including build out of the 4,000 vacant lots, and we applied the worst case scenario for development. We can address future growth potential in the final TMDL.

Comment: You should also consider greater utilization of all the second homes since there is a pretty high vacancy rate.

Q. Could you determine what the pollutant load improvement would be if you factored in full restoration of stream channels and the consequent filtration of pollutants?

A. We are currently looking at the stream input at the mouth of the creek, so we are measuring whatever makes its way into the lake. Regarding filtration from floodplains, that needs to be clarified. Recent data from restoration on Trout Creek, a restored floodplain, may help us understand this a bit more.

Comment: Thank you to the TMDL team for all the incredible work.

Q. What kind of information in all this work will be analyzed in the Regional Plan EIS? Then how does peer review fit in?

A. All TMDLs are required to go through an extensive peer review process which will happen in summer or fall next year. We will send the TMDL to the state board who will then request an independent review of the science-based policy decision. The regulatory framework in the TMDL (including the allocations and the implementation plan) will be reviewed, as well as the science backing it up. However, we have had technical review all the way along this process.

Q. How extensive were your data sources when developing the cost estimates?

A. The stream channel group felt very good about the cost estimates, as did the urban/groundwater group. The atmospheric group was looking at solutions that haven't been attempted before and that group felt a little less informed than the others in developing cost estimates.

Q. Did you take into account different state policies and processes?

A. They are likely smoothed out in the average since we are looking at basin-wide estimates here, but the point is well taken that there will be differences among different entities. A much greater level of analysis on costing will occur on the project level.

CONTINUAL IMPROVEMENT AND FUNDING CYCLES/OPPORTUNITIES

Jason Kuchnicki (NDEP) discussed continual improvement. He stressed the enormous complexity and undertaking of the clarity issue and noted that there are still some knowledge gaps and opportunities for future research. After going through all this work we now know where the gaps exist and what the limitations are. We have a running tally of issues, concerns, and future research needs and we encourage all Forum members to help us add to this list.

There are a variety of studies in the works right now using a variety of funding sources. Many are being funded through SNPLMA as well as TRPA's 208 funding and Nevada State Lands funding. We are currently looking at a detailed analysis of pump and treat technology and using cultured ecologies to filter fine sediment. The Pathway agencies recognize the importance of collaborative continual improvement and we have funded Environmental Incentives to outline future research options.

OVERVIEW OF APPROACH FOR FALL-WINTER MEETINGS

Harold Singer thanked the Forum for the input provided today. In October the Forum will see some pollutant control packages and results of model runs. The TMDL team is hoping to hear the good things and bad things about the packages and ideas for improvement. In December the TMDL team will seek further input and refinement. Harold encouraged the Forum members to contact the TMDL team in between meetings to continue the dialogue on pollutant control opportunities.

ACTION ITEM:

The TMDL team will distribute contact information to Forum members to allow for continued dialogue about pollutant control opportunities.

All presentations are posted on the Lahontan Web site at www.waterboards.ca.gov. Doug Smith is the primary contact for the Lake Tahoe TMDL program. His email address: dfsmith@waterboards.ca.gov.

UPDATE ON TRPA AND USFS ACTIVITIES

John Hitchcock (TRPA) provided an update on the Regional Plan. TRPA is in the notice of preparation phase and a 30-day comment period which runs through October 5th. Written comments will be accepted as well as email comments to rpeis@trpa.org. TRPA is planning to craft a final proposed package in November so that EDAW can begin the review process. Based on some of the discussions, the package moving forward may change. TRPA received comments from the Governing Board and the public, and the scope will be refined further. From October 2007 through April 2008, TRPA's environmental consultant will be pulling together the draft EIS and the Goals and Policies document amendment, the amendment to the Land Use plan, and the amendment to the Code of Ordinances. The 60-day public circulation period will begin in April, with hopes of having the EIS certification in October 2008 and the plan ready for release of allocations starting in January 2009. Over the next month TRPA will be refining the scope of work and coming forward with the analysis for the EIS.

John Singlaub (TRPA) added that TRPA's scope needs to be set by November. In terms of meshing with the TMDL process there are not many options. There may be an opportunity to unbundle pieces of the Regional Plan so that there may be several phases of the plan. The TMDL and the 208 plan changes that are associated with it are critical to the Regional Plan. TRPA and Lahontan will continue to talk internally about how best to mesh the processes and deadlines.

Terri Marceron (USFS) reminded the group that in January 2007 the USFS issued a notice of initiation for Forest Plan revision and released the Comprehensive Evaluation Report. USFS received comments on the document but all USFS revisions were enjoined under the 2005 planning rule until the situation can be resolved nationally. A final decision on the rule is expected around January 2008. Therefore the LTBMU is continuing with Forest Plan revision items but cannot package or publicly scope them under the 2005 planning rule. The Forest Plan revision team is continuing to work internally on desired conditions and guidelines but they won't be put out for public comment until after resolution of the national issue. The USFS is committed to the

Pathway process and to collaboration with the other Pathway agencies. We will continue to be active participants in the TMDL process, since integration of these processes is critical to the success of our plan as well. The result of the TMDL will be integrated into our suitable uses, standards, and guidelines in terms of the water quality piece of our forest plan.

Q. When you get the planning rule decision in January 2008, does that start the clock again in your review of public comments?

A. We will have to wait until the decision comes down before we know how quickly we can get the information out for public comment. We will be getting the Forest Plan revision done as soon as we can.

Q. Can the environmental documentation process for the TMDL be explained? How do the two different state and Article 7 environmental documentation processes relate and how can they be integrated to avoid sequential decision-making?

A. We will hope to have a concurrent process, building from the EIS that the Regional Plan is based on. We may be able to use TRPA's document as a functional equivalent to an EIR, though we may have to add to it. TRPA will do a subsequent plan with Lahontan if needed. We will report back to the Forum in October about our progress on this issue.

ACTION ITEM:

TRPA and Lahontan will report on progress in integrating environmental documents at the October 25th Forum meeting.

Comment: It is very important that these processes be transparent so that the public will be able to understanding what is happening when and where the opportunities are for public participation. The prospect of not having a united environmental document is troubling.

Anna West thanked the Forum for attending and participating in the meeting and thanked the TMDL team for providing the extensive scientific knowledge collected thus far.

COMMENTS SUBMITTED BY FORUM MEMBERS

CATEGORY	COMMENT
Urban Sources	What is "urban?" Where in the spectrum running from isolated structure/forest road to paved high-rise inner city is included? If the definition is broad, spanning most of this spectrum, are sub-divisions needed? It seems that approaches/regulations for a high-rise core are not appropriate for a 1-acre subdivision.
Urban Sources	Invest in pervious pavement. Regarding reducing runoff and fine sediment, use pervious pavement on low traffic surfaces like bike lanes, paths, sidewalks, small commercial parking lots, residential driveways, etc.
Urban Sources	Invest in high quality highway paving. Regarding highway effects on fine sediment and atmosphere. Help and encourage NDOT and CALTRANS to control runoff to and from their highways. Use a modern paving system (i.e. reclaimed tires or another from European technology). Does not have to be

	resurfaced as often. This would reduce standing traffic and grinding and snow plows and sand and road noise. NDOT employees are also frustrated with old and bandaid paving system.
Urban Sources	Have you conducted a sensitivity analysis on the watershed model outputs? I.e., have you pulled out private residential BMPs to see the effect on the pollutant load, or street sweeping, pump and treat, etc?
Urban Sources	What is being done to improve control of fine sediments from primary roads? Need more research and development. Recommend monitored demonstration projects, road design, infiltration design, sweepers.
Urban Sources	Removing sanding cannot be the “miracle” fix. A level of service is necessary for safety/liability purposes. If another solution were decided upon, there would still be dollars associated with the “switch” to a brine solution, for example. Perhaps a good bang for the buck? But still, not a “free” percent reduction.
Stream channel sources	Stream channel erosion needs to be explained better since it is deceiving on “restoration” – appears from description of tiers 1 and 3 that tier 1 and 3 should be the same % load based on treatments you described.
Stream channel sources	If (as believed) restoration has significant, non-quantifiable benefits at low cost it seems we must have at least a ball park estimate. Otherwise we may spend a lot for small benefit just to meet the Clarity Challenge. For example, Forest has a very high unit cost – floodplain restoration may make that unnecessary.
Forest sources	Though the trail system is included in roadways for opportunities they should also be separated for analysis due to separate issues and uses. Also any reduction value in road to trail conversion?
Atmospheric sources	In tier discussion if baseline is current situation, how are considering tier 2 and tier 3 changing from the baseline only, versus what about future development and resulting VMT’s and/or second homeowners converting to full-time homeowners and increasing VMT’s over the baseline?
Future research	What is pollutant loading difference between BMP’d versus non-BMP’d urban development?
Future research	What is the potential for improvements from better street sweepers?
Future research	Contribution to nitrogen from goose droppings: Is it enough volume to be considered a source? What are ways to evaluate? What are ways to control?
Future research	Fire effects on fine sediments and nutrients. We should increase monitoring to learn the effects of: wildfire, pile burning, controlled burns; smoke from distant fires; and pollen.
Cost	Identify cost of reduction that achieves the best environment results, public cost and private cost, and where funds will come from to achieve the objective! This will help us to decide what is feasible.
Other	Isn’t there a “cumulative concentration” of polluted water as it travels the watershed? Meaning, USFS, residential, highway corridors, commercial, wetland... you’ve separated the sources. Awesome. Now is there a way to quantify it at a watershed level?
Other	At the local level, jurisdictions and EIP project implementers are responsible for the O&M of SW projects for the next 20 years. Many of these jurisdictions are “volunteer” and have no way of paying for the O&M, nor have a way to pay for alterations in system design/function without support from the EIP. Moreover,

	some areas don't even have an EIP number. With all that said, NTCD is trying to organize the more than 15 local jurisdictions in Nevada as a proactive measure for pending TMDL policy changes. We see neighborhood-based storm waters systems that incorporate noncompliant private BMPs with large scale EIPs as a solution. Does the TMDL team or do the policy-makers realize the scope and impact decision may have on the local jurisdictions? And are they willing to work with NTCD to help organize those cats?
Other	Are there any thoughts of considering "ecosystem services" which serve statewide, national, international, provided by Lake Tahoe being incorporated into the strategy to fund the new EIP?
Other	We are basing a great deal on the science. How do we know the science is valid? How is the model tested?

Next meeting:

The next Forum meeting will be held on Thursday, October 25th at the North Lake Tahoe Conference Center, from 8:30am to 4:30pm.

To review Forum materials, including presentations from this meeting, please go to:

<http://www.PATHWAY2007.org/>

KEARNS & WEST CONTACT INFORMATION

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