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NATIONAL WORKSHOP TO ADVANCE STATE TMDL PROGRAMS

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FINAL PROJECT REPORT
&
WORKSHOP PROCEEDINGS

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Except where expressly noted, the views expressed in this report should not be attributed to EPA or to State agencies, nor should any official endorsement be inferred. The information that follows was gathered from many and varied sources, and ELI is solely responsible for any errors or inaccuracies that may appear.

This report and other TMDL-related resources are available electronically at ELI's companion website: http://www.eli.org/Program_Areas/Events/state_tmdl_06.24.08.cfm.

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Executive Summary

In June 2008, the Environmental Law Institute (ELI) convened a *National Workshop to Advance State TMDL Programs*. This event, supported through a cooperative agreement with the U.S. Environmental Protection Agency (EPA), resulted in an unprecedented gathering of State TMDL Program officials from more than forty States. In the context of exploring State innovations in TMDL development and implementation, the assembled participants had an opportunity to share their unvarnished views on the present—and likely future—of the TMDL Program. Representatives of EPA Headquarters and four EPA Regions also participated in the event, playing primarily a listening role.

From the outset, ELI and EPA intended for this National Workshop to provide a new avenue for State TMDL Program officials both to interact with one another and to convey their programmatic ideas (and concerns) directly to EPA. To ensure a State-driven workshop and planning process, ELI convened a Planning Advisory Group (PAG) consisting primarily of State TMDL Program officials. For six months, this group worked through a participatory process to develop, shape, and refine: the substantive topics for discussion; the list of State officials to be invited; the course materials; and the ultimate event agenda and substantive panel presentations. The PAG also had a strong voice in the nature and extent of federal participation in the event.

State participants in the National Workshop (including members of the PAG) were typically individuals with substantial responsibility in their respective State Programs, but who were not far removed from day-to-day Program operations. This was the first such gathering of persons with this participant profile from so many States around the country.

The two-day event, held in a retreat-type setting, was successful in terms of both generating new ideas and forging new inter-State relationships. A number of distinct themes emerged from this event—these themes are identified in the three pages that follow. The balance of this report contains a detailed, session-by-session summary of event proceedings.

ELI seeks to build on the momentum (and enthusiasm) generated by the National Workshop through a new, ELI-managed website for State TMDL Programs, and through the launch of a new listserv designed to increase and enhance interactions among State TMDL Programs. Additionally, the appendices to this report, together with the materials collected on ELI's companion website, collect a breadth and depth of existing and new information about specific State TMDL Programs, their innovations, and the challenges that they face.

I. National Workshop: Themes

From the perspective of ELI staff in attendance, ten major themes emerged from the two-day National Workshop. These themes are set forth below.

(1) ***Addressing waters impaired by nonpoint sources is among the most difficult challenges (if not* the *most difficult challenge) faced by State TDML Programs today.***

Reasons offered by participants included—

- a lack of state regulatory authority to ensure implementation of TMDLs with respect to nonpoint sources; and
- the challenges associated with implementing and monitoring the success of Best Management Practices (BMPs) in reducing agricultural nonpoint source pollution.

(2) ***States have already innovated a great deal with respect to TMDL development and implementation.***

Examples highlighted by participants included—

- the Northeast Regional Mercury TMDL;
- stormwater surrogate TMDLs;
- the approach of "going straight to implementation" of control measures;
- watershed-based TMDLs; and
- cross-Clean Water Act program coordination activities.

(3) ***Most State TMDL Programs face significant resource limitations—particularly with respect to funding and staffing—that pose real obstacles to Program success.***

(4) ***Existing vehicles for interaction, networking, and dialogue among State TMDL Program Coordinators and EPA, other State programs, and stakeholders are insufficient.***

Suggestions for improving connectivity among State TMDL Programs, and between State TMDL Programs and EPA, included—

- establishing a dedicated website and listserv for State TMDL Program coordinators;
- convening, on an annual or biennial basis, a workshop with a broad focus on all aspects of State TMDL Program implementation;
- having EPA make available to States through the agency web portal as many model TMDLs as possible to help establish and promote clear, consistent standards for States to follow in all aspects of TMDL development and implementation; and

- to the greatest extent possible, having EPA take into account in the formulation of TMDL Program policy and event planning the kinds of issues and concerns that have been identified by State participants—recognizing the nature of the barriers they face with respect to TMDL development and implementation.

(5) ***State TMDL Programs are constrained by structural limitations that inhibit their effectiveness. Specifically, few State Water Quality Programs are organized and coordinated so as to maximize the effectiveness of the TMDL component—assessment, TMDL development, and implementation functions are often housed in different organizational units.***

Suggestions for structural reforms included—

- considering how the use of multidisciplinary teams (*e.g.*, assessment, monitoring, TMDL development, and permitting) can enhance TMDL Programs; and
- better coordinating TMDL development and implementation activities with ongoing watershed planning efforts.

(6) ***Broad stakeholder engagement is crucial to State TMDL Program success, but public education is severely lacking with respect to the importance of water quality issues in general, and TMDLs in particular. This "branding issue"—i.e., that the public tends to be unfamiliar with the term "TMDL"—is a barrier to stakeholder engagement and to mobilizing champions who can help ensure implementation.***

(7) ***The TMDL Program is in a period of transition—and perhaps even facing an "identity crisis"—as many States emerge from their consent decree burdens, and turn increasingly to addressing nonpoint sources.***

Participants identified important issues emerging during this period of flux—

- the difficulty of striking an appropriate balance between "restoration" and "prevention," and the related question of how State TMDL Programs can be credited for preventive TMDLs (as some States move increasingly toward protection-oriented and anti-degradation approaches); and
- whether TMDLs can begin to serve as a tool for integration, helping to shift the overall focus from TMDLs, as such, to a more holistic, "impaired waters" program approach incorporating all the steps from designation of uses to implementation in order to meet water quality standards.

(8) ***Many States would welcome a renewed commitment to a focus on attainment of water quality standards and want to be credited for interim steps that lead to this goal. At the same time, States are faced with the need to balance concerns of TMDL "pace" against concerns of TMDL "rigor."***

Participants explored aspects of the pace-versus-rigor tension, asking—

- in a post-consent-decree world, how are EPA and stakeholder pressures to develop large quantities of TMDLs to be weighed against the need to develop and implement rigorous, targeted TMDLs with a high likelihood of success?
- can States be appropriately credited for their implementation activities—particularly "implementation in progress"—given that water quality recovery is a long-term proposition?

(9) ***States want and need from EPA better communications and support, more internal consistency (while retaining regulatory flexibility), and a more concerted effort to eliminate distractions and help States focus on priorities.***

(10) ***States would like to see better coordination among EPA programs, between EPA and other federal agencies, and between EPA and non-government stakeholders.***

Participants emphasized their desire for improved coordination—

- among EPA's Clean Water Act programs, and between EPA Headquarters and EPA Regions;
- between EPA and other federal agency stakeholders, many of which play an important role with respect to nonpoint source issues and agricultural BMPs (*e.g.*, the U.S. Department of Agriculture); and
- between EPA and key players in watershed planning efforts.

II. National Workshop: Session-by-Session Discussion

Welcome, Introductions, & Overview of National Workshop

ELI staff opened the workshop with a statement of welcome to the 55 assembled participants, consisting of individuals representing 42 State TMDL Programs, and ten EPA personnel, including six from EPA Headquarters and four from EPA Regions 4, 5, 6, and 10.[1] (A full list of National Workshop participants appears in Appendix 2 to this Report.) ELI understands that this opening session marked the first time that such a large gathering of State TMDL Program representatives has occurred. The enthusiasm of the assembled group was evident as we went around the meeting hall for a spirited round of individual introductions.

Craig Hooks, Director of the EPA Office of Wetlands, Oceans, and Watersheds, and John Goodin, EPA Watershed Branch Chief, provided opening remarks. Mr. Hooks touched on the recent improvements that have been made in TMDL programs nationwide and identified areas in need of improvement. He explained that the Program now needs to shift its focus to TMDL *implementation*, taking into account how climate change will alter the water quality equation.

Mr. Goodin outlined what he saw as the context and purpose of the event from EPA's perspective. He emphasized that EPA sought an unfiltered evaluation of the status of the TMDL Program from the National Workshop participants. Especially in light of the impending change in Administrations, he explained that EPA wants to be prepared with accurate information from the States about how best to direct and shape improvements in the Program. He also conveyed EPA's intent to better understand how the agency can support the States' own TMDL initiatives and programs. Mr. Goodin indicated that while he and other EPA staff attending the National Workshop would do their best to answer questions and offer clarifications, as necessary and as requested by the States, he viewed EPA's role as primarily one of listening—and absorbing the information and opinions shared by the State participants.

ELI staff closed the introductory session by providing an overview of the National Workshop schedule, our planned approach for discussions, and how ELI intended to capture, record, and distribute participant comments from the National Workshop.

[1] Many of the National Workshop participants first assembled the evening prior, for a Welcome Reception at the Murie Lodge of the National Conservation Training Center. This initial, informal gathering afforded ELI a public opportunity to offer individual thanks to each State member of the Planning Advisory Group, whose ideas, energy, and enthusiasm were central to making this project successful. Members of the Planning Advisory Group are identified by an asterisk in the participant list that appears in Appendix 2.

Sessions 1-3: Innovations in TMDL Development

Topic and Intended Outcomes.

The National Workshop opened with three substantive sessions on the broad topic of innovations in TMDL *development*. The first session included panel presentations on three areas of innovation: the Northeast Regional Mercury TMDL, the watershed approach used in West Virginia, and the methodology used in Connecticut for impervious cover TMDLs. The second session consisted of small-group discussions in a breakout format, and the third session brought the participants back together for report back, plenary discussion, and observations from EPA.

Intended outcomes for these sessions included each of the following:

- Participants will be familiar with a range of innovations in TMDL development, including the innovations covered in panel presentations as well as the innovations discussed in break-out and plenary discussions.

- Participants will have a sense of the pros and cons of implementing these innovations in their respective States; an understanding of likely obstacles and of any changes that would be needed to make the innovations work; and a sense of what role EPA could play in facilitating adoption of these innovations.

- Participants will be familiar with how some States have deployed these innovations in light of the tension to, on one hand, develop as many TMDLs as possible, and, on the other hand, develop targeted TMDLs with the greatest likelihood of implementation.

- Participants will know which States (and State representatives) can serve as resources with respect to specific innovations.

Themes.

The themes that emerged from the small-group and plenary discussions during this initial series of sessions on TMDL development would come to be echoed over the entire course of the two-day National Workshop.

A major theme was the need to develop TMDLs that are conducive to implementation and that facilitate measurement of progress and success. A related theme was the need for State TMDL Programs to think proactively about how stakeholders can be enabled to help carry out TMDL implementation, particularly as new kinds of TMDLs emerge.

While participants showed great interest in learning innovative approaches to developing TMDLs, they were conscious of the need to lay some groundwork before fully embracing the proposed approaches. For example, discussing the application of

broad-scale TMDLs, participants raised attendant concerns about how to implement such TMDLs, how to measure progress for them, and how to perform load calculations (particularly in light of the 2006 court decision on "daily" loads).[2] Before proceeding with development of surrogate TMDLs, others wanted more certainty about what limits EPA might impose on the surrogate approach, and a better understanding of how surrogate TMDLs could be translated into permits.

Another broad theme to emerge was the desire of many participants to view the TMDL Program as part of a holistic water quality program, and not simply as an exercise in data production. This goal will require far better integration of State-level water quality programs than currently exists, as well as better integration of and coordination among EPA programs.

Finally, these sessions brought to the fore the desire of many participants to know what restrictions they might expect EPA to impose on any forthcoming novel approaches to TMDL development that the States may present. Time and again during the National Workshop, State participants returned to their need for flexibility from both EPA Headquarters and the EPA Regions. And, time and again, it was pointed out by State participants that they need consistency and predictability from EPA. This tension—between the desire for flexibility, on the one hand, and consistency, on the other—arose many times during these sessions, and during the National Workshop as a whole.

Session Highlights.

Panel presentations. **Susannah King** of the **New England Interstate Water Pollution Control Commission (NEIWPCC)** briefed participants on the Northeast Regional Mercury TMDL, about which there has been great interest. The nature of mercury pollution—mainly air deposition from industrial sources that may be geographically remote from the affected water resource—complicates addressing this pollutant in a traditional way. The six New England States and New York cooperated on the first-ever regional TMDL and have successfully reduced regional sources of mercury pollution. A participant asked how the allocation of sources of mercury between in-region and out-of-region sources was determined. Ms. King explained that an assumption was made that the contributions from the various sources would be proportionate to their outputs. Also, the team recognized that some waters would be more vulnerable to the effects of mercury deposition due to their background chemistry. King responded to another question by explaining that municipal waste combustors, sewage sludge, and medical waste are major mercury sources. There was discussion of how to manage equity concerns when addressing in-region sources of the pollutant without addressing sources that are beyond the region at the same time. Finally, a

[2] *Friends of the Earth v. EPA*, 446 F.3d 140 (D.C. Cir. 2006). *See also* EPA Asst. Admin. Benjamin Grumbles, Memorandum re Establishing TMDL "Daily" Loads in Light of the Decision by the U.S. Court for Appeals for the D.C. Circuit . . . and Implications for NPDES Permits," EPA Office of Water, Nov. 15, 2006 (EPA guidance memo).

point was made that in order to address air deposition, it should be ensured that relevant air laws and regulations are properly taken into account.

James Summers of **West Virginia** spoke about his State's watershed approach to TMDL development. In order to get a fuller picture of water quality problems and provide better solutions, West Virginia has divided its TMDL work schedule for its 34 watersheds into five groups. The program rotates its work among each group of watersheds and spends five years in each one, writing permits, sampling, and developing TMDLs. This system has allowed West Virginia to develop TMDLs more effectively and to more thoroughly meet its Section 303(d) listing requirements. Questions about the watershed approach focused on logistics, timing, and how to manage the personnel needed at each of the steps necessary to carry out a watershed-by-watershed approach. Mr. Summers also described West Virginia's approach to public participation: meetings are convened at the sampling stage (when the State can learn about good sampling locations from watershed groups), when doing waste load allocation, and once the TMDL has been drafted.

Chris Bellucci of **Connecticut** described his State's methodology for the "impervious cover TMDL," a form of surrogate TMDL. Connecticut, which had over one hundred stream segments impaired for aquatic life, identified a correlation between the biological data and GIS impervious-cover data. Because traditional stormwater models are extremely data-intensive, posing a significant resource challenge to the agency, Connecticut developed a new way to enable water quality improvement in areas where water quality is significantly impacted by stormwater. Relying on the correlation between impervious cover and biological impairment, Connecticut created the impervious cover surrogate TMDL. In response to questions about the legality of regulating flow, Mr. Bellucci explained that for this very context-specific TMDL, there was no need to regulate flow because the impervious cover acts as a surrogate for any measurement of flow. He further explained that one key is to avoid getting entangled in the details of all of the pollutants involved, and, instead, to devise a way to move toward improvement of the underlying stormwater problem.

Discussions. During plenary discussions, participants touched on current and potential applications of the models that were presented by the panelists—with a focus on broad-scale TMDLs and surrogate TMDLs. While one State (New Hampshire) is already developing a Statewide Chloride TMDL, participants discussed whether regional TMDLs might represent a good approach for dealing with, for example, acid deposition and PCBs. Participants also discussed surrogate TMDLs that they are currently developing, including using shading and flow as surrogates for temperature, and using iron content as a surrogate for sedimentation.

In small-group breakout, participants from across the country identified a broad-range of innovations pertaining to TMDL development. These included:

- Watershed-based management plans (South Carolina, Illinois)

- Implementing watershed planning guidance internally within 18 months after developing TMDL (Idaho)
- Chloride TMDL (New Hampshire)
- Natural TMDLs such as shading as surrogate, with goal of decreasing BTUs (Idaho, Montana)
- Total iron as surrogate for sediment (West Virginia)
- TDS, using reference watersheds, related to aquatic life use (Virginia)
- Linking TMDL work and politics (risk assessment) (Washington)
- Making TMDL goals more understandable to public (Massachusetts)
- Educational efforts with State agriculture department with respect to pesticide use (Oregon)
- MS4—local ordinance for fertilizers (New Jersey)
- Put MS4 language into stormwater management plans (California)
- Tying TMDL development into Section 319 (Iowa)
- Addressing marine exceedances (California)
- Stressor ID Model (most likely pollutant) (Maryland)
- Biological impairment listing—used to determine stressor (West Virginia)
- Improved cover in MS4 jurisdiction (North Carolina)
- Focus on cost-effectiveness in TMDL development (Wisconsin)
- Convincing other State agencies to address elements of Section 319 in their processes (Wisconsin)
- Bacteria source tracking: antibiotics, human, nonhuman, wildlife (Maryland)
- Use of Fluorometer (Maryland)
- Bacterial/coastal (Virginia)
- Mass-specific collophage to identify human waste (Rhode Island)
- TMDL offsets for WLAs—"Life under a TMDL Cap" (Virginia)

One participant mentioned a need for a "cool water" classification, as well as the need to account for floods. Sometimes, it was argued, it is important to take a step back to account for overall hydrology.

It was agreed that there are areas where EPA could contribute to State efforts to identify and implement innovations. Some Regions, for example, are much stricter about the need to identify a pollutant with particularity, while others support approaches (for example, the impervious cover surrogacy approach) that may not hinge on a specific pollutant. Some participants also emphasized that the Section 303(d) listing cycle is too short, and that timelines are unrealistic in light of the enormous amount of data to be gathered and managed. It was pointed out by some participants, too, that approval of water quality standards takes too long.

Some participants asked that EPA update the TMDL examples on the website and develop a model for an economic use attainability analysis (UAA). It was also suggested that new criteria should not require revisiting previously-established and approved TMDLs. It was noted that much more data is needed to delist a waterbody than is needed to list it. Participants repeatedly emphasized the need for consistency of

approach among the EPA Regions. Another important issue highlighted by participants was the continuing need for sufficient funding for all TMDL activities, not only for development, but also implementation, including public education.

EPA Remarks. John Goodin of EPA concluded the third session by noting that there is a great deal of good, diverse, creative work going on in the States right now and that each State is confronted with different issues. He noted that during discussion, fifteen or twenty pollutants had been mentioned—whereas EPA usually only thinks about the top five or so.

On the subject of the inconsistency that is sometimes evident among EPA Regions, Mr. Goodin said that EPA Headquarters would like to encourage the flexibility that exists under relevant statutes and regulations in a way that produces cutting-edge approaches like some of those mentioned today—but not in a way that we would all view as allowing a State to "get away with" something. He emphasized that everyone wants to see those underlying water quality results, and it is important that we put that lens on the approach that that we're taking.

Mr. Goodin acknowledged that communication among the States and with EPA can be a real challenge. He reported that EPA Headquarters is pursuing a wide variety of options—from a curriculum for people new to TMDLs, to joint discussions and meetings. He explained that the institutional structures—such as pairing of the TMDL Program with the Water Quality Standards Program or the Section 319 Program—can differ from Region to Region. He said that EPA needs to find a way of communicating with the States in a way that is not confusing in order to avoid the problem of people hearing different messages from different people within the agency.

One of the greatest outcomes of the National Workshop, Mr. Goodin suggested, could be a compilation of all of the topics that came up and the relevant points of contact.

Picking up on the discussion of mercury from Ms. King's presentation, Mr. Goodin announced that EPA and ASIWPCA were about to release a model that will enable determination of sources of air deposition of mercury. EPA also has a TMDL checklist that will be coming out shortly. Mr. Goodin was hoping that he would be able to walk through these new tools on a conference call with State staff.

Finally, Mr. Goodin noted that the impervious cover and flow surrogacy approaches, while interesting, may need work to flesh out their boundaries. He also asked participants to consider whether there may be opportunities to look at these issues on a broader scale.

Session 4: Development of Non-TMDL Options for Addressing Impaired Waters

Topic and Intended Outcomes.

This session explored key mechanisms—*other than TMDLs*—for restoring impaired waters. Panel presentations covered Florida's experience with "Category 4b" alternatives, Washington's "straight to implementation" approach, and the use of Environmental Accountability Projects (EAPs) in Wisconsin and elsewhere in Region 5. Panel presentations were followed by Q&A and plenary discussion.

This session was designed to result in the following outcomes:

- Participants will be familiar with a range of innovative, non-TMDL options for addressing impaired waters, including the innovations covered in panel presentations as well as the innovations discussed in plenary discussion.

- Participants will have a sense of the pros and cons of implementing the non-TMDL innovations discussed in their respective States; an understanding of likely obstacles and of any changes that would be needed to make the innovations work; and a sense of what role EPA could play in facilitating adoption of these innovations.

- Participants will know which States (and State representatives) can best serve as resources with respect to specific innovations.

- Representatives of EPA will have an understanding of programmatic obstacles, at the national level, faced by States with respect to non-TMDL options for addressing impaired waters.

Themes.

While TMDLs are the most important tool for addressing impaired waters, in some cases, alternative approaches may also be appropriate. One theme to emerge from this session was the importance of State laws and regulations as a vehicle for moving beyond federal authorities. Another theme during this session was the need to improve cost-effectiveness through information sharing, and coordination among agencies and entities at both the State and federal levels. Some participants also focused on the need for States to offer creative, assertive, and at times even aggressive approaches to achieving water quality standards, *particularly* with respect to hard-to-address nonpoint sources. A sub-theme that began to arise from discussion during this session was the need to look closely at the primary goal of water quality programs: is it to restore currently-polluted waters, or to prevent degradation of other waters?

States that do not have the State law authority to enforce nonpoint source pollution control measures are at a disadvantage for dealing with nonpoint source

pollution and must be creative in finding ways to control it. One approach described was to work with watershed groups on implementation and to target funds in areas where watershed groups are active and will provide results.

The issue of coordination across programs was a dominant theme. Participants described various related functions of key State departments and federal programs, and emphasized the ongoing need for coordinated activities and information sharing, and even the need for getting credit for shared efforts. Although water quality programs and agricultural programs are working toward the same goals, they often do not share information that could be mutually beneficial, and in some cases do not collect all of the cogent information. It was argued that just because water quality funding is being funneled through the Farm Bill, for example, this is not sufficient reason to throw a proprietary veil over resulting information.

Session Highlights.

Panel Presentations. **Eric Livingston** of **Florida** discussed with National Workshop participants his State's experience with the "Category 4b" approach. In addition to federal legal requirements, Florida legal authority provides support for exceptions to TMDL requirements when other pollution control programs provide reasonable assurance that water quality standards will be met. Mr. Livingston described five water bodies throughout the State, subject to a range of laws, regulations, policies, and planning instruments, and the circumstances that made them potentially appropriate candidates for a Category 4b alternative. EPA rejected this approach for three of them. For one of these three, the Florida Keys, Florida established Category 4g: impairment plus reasonable assurances, *but* time frame unknown. A participant asked about the advantage of the 4b approach, as opposed to developing a TMDL. Mr. Livingston noted that it can provide a strong incentive for stakeholders to conduct and become engaged in restoration activities. He added that because of the critical role that water plays in Florida's economy (for example, in attracting tourists and retirees), the State Legislature prioritizes water quality programs for funding and places an emphasis on restoration activities.

Helen Bresler discussed **Washington's** "straight to implementation" approach. Washington State law gives the Department of Ecology the authority to prevent water pollution and provides enforcement power, which enables actions to prevent pollution without first developing a TMDL. In spite of consent decree requirements, the Department has consistently chosen to focus on implementation—and in cases where regional stakeholders have been cooperative, the Department has worked through them. In other words, the Department has often gone directly to landowners. In particular, Ms. Bresler explained that Washington State law grants her Department the authority to enforce pollution control measures against agricultural sources—a power that many States lack.

Nicole Richmond of **Wisconsin** briefed participants on Region 5's Environmental Accountability Projects (EAPs), a broad effort to capture the impacts and

benefits of non-TMDL watershed activities. This approach gives equal weight to TMDL commitments as to other watershed activities, and it provides States with flexibility in how they target their limit resources to meet water quality standards with respect to impaired waters. Wisconsin has been a leader in EAPs, using them to avoid the necessity of doing TMDLs in each instance, especially when funds from other programs are already being invested for activities that will have the effect of improving water quality. Ms. Richmond shared examples of the criteria used in her State and elsewhere across the Region for establishing EAPs, including at contaminated sediment and superfund sites, as well as and other nonpoint source-related projects. Ms. Richmond was asked whether her Department is working with any wildlife-related agencies on EAPs, and she responded that they are currently working on improving the EAP process so that they can do so. She also explained that in order to satisfy Wisconsin standards, an entire watershed must be covered by BMPs, and there must be strong evidence that application of the BMPs will meet water quality standards. Another point made was that while EAPs contribute to the goal of clean water, they do not contribute to meeting consent decree requirements.

Discussion. It was agreed that State water quality agencies that lack State law authority to enforce nonpoint pollution control measures must be creative in finding ways to tackle nonpoint source problems. One approach described was to work with watershed groups on implementation, and to target funds in areas where watershed groups are especially active—and, therefore, more likely to help provide results. One participant mentioned that a good technique can be to use the threat of TMDLs as leverage to convince stakeholders of the need for prompt action, especially when other enforcement authority does not exist under State law.

Another participant explained that going through the TMDL process generates meaningful momentum that does, ultimately, result in increased compliance. Another said, “The voluntary method will only get you so far. To get to the end point there has to be a stick to go with the carrot.” Another approach suggested was to only accept funding for TMDLs and not for other activities, so that obtaining any funding requires a TMDL. A participant mentioned that political authorities sometimes get involved with their own priorities for how funds coming into States should be allocated.

Funding for EAPs can draw upon Section 319 funds, responsible parties under superfund, or cost-sharing with the agricultural sector. A participant pointed out that the nine elements required for qualifying a watershed plan as an EAP are essentially the same as those required for a TMDL—so perhaps the additional costs for also doing a TMDL for watersheds that have EAPs would be marginal. In one State, a participant said, “[o]ur hardest fight right now is that we invested so much money into these community watershed programs that people are saying, ‘We did all this work before. We still have an impaired waterbody, so why should we [bother investing resources to] do anything else?’”

There was discussion of how State TMDL Programs work with other State programs and federal programs. Some participants reported challenges and

inefficiencies, while others reported a good working relationship and effective coordination with other institutions. In some States, particularly those with fewer players (and dominant agricultural concerns), collaboration was smoother. Nonetheless, overall, participants reported that lack of institutional collaboration was frustrating. One participant described working with the USDA to prioritize funding, and then not receiving any subsequent information: “Where are the BMPs funded by the farm bill? We don’t know….” The secrecy that surrounds funding of certain agricultural activities drew repeated criticism: “Water quality compliance information should not be proprietary.”

One participant suggested that synthesizing information with the USDA-funded programs would help ease overall coordination. Some participants reported that their States do have good working relationships with the Natural Resources Conservation Service, or conservation districts, though again, it was observed that this dynamic is often more comfortable in States with fewer players. Someone said that Farm Bill funds could go to a water quality specialist and not be combined with other agricultural funding. A participant pointed out that government water quality activities are public information that is available through a FOIA request, or at least it was until there was an amendment to the Farm Bill. Someone added, “Sometimes we’re just too nice [about how we ask].”

A participant pointed out that efforts made to coordinate activities with other agencies may not always be easy to show through required TMDL Program reporting.

During a discussion of coordinating 4b activities with the USFS, one participant noted dryly that if the Forest Service wants a 4b, then the Forest Service should be required to write it.

It was noted that there is a lack of clarity in some EPA Regions regarding whether a watershed plan can substitute for a TMDL if it does not result in a delisting.

Participants also discussed challenges related to attainment of water quality standards, such as standards set below background levels, and the challenge of determining what the standards should be in the first place. These issues, in turn, can result in reduced funding because of the inability to show results.

Other effective tools identified by participants included: the targeting of Section 319 funds to local watershed groups; and convening quarterly meetings among all State water programs.

Session 5: Day One Wrap-Up

Topic and Intended Outcomes.

This brief session afforded an opportunity for participants to pull together, in plenary, the various threads of discussion from the first day of the National Workshop. It was also an opportunity for EPA to share initial reactions and observations.

Intended outcomes for this session were:

- Participants will have any remaining questions answered with respect to any innovation identified during the first day of the National Workshop, including questions about where to obtain more information.

- Participants will identify any additional innovations suggested by the day's discussions.

- Participants will have an opportunity to follow up directly with EPA Headquarters staff as to any aspect of the day's discussions.

Session Highlights.

Discussion. Plenary discussion focused on Use Attainability Analysis (UAA) and the six factors required to qualify a water, including economics or natural resource criteria, for delisting. Participants also discussed the option, besides doing a UAA, in cases where natural conditions are making it impossible to meet standards through permit requirements, for using site-specific criteria.

EPA Remarks. John Goodin of EPA closed the session with concluding remarks from EPA's perspective. He noted that statistics on the TMDL program show that 33,000 TMDLs have been developed, but fewer than 500 TMDL alternatives used. There is an opportunity to begin with implementation of TMDL alternatives—still a relatively new area. Mr. Goodin explained that while EPA is well aware of the possibility of litigation resulting from the use of innovative TMDLs and alternatives, there have been only a handful of lawsuits on the quality of TMDLs. He explained that post-implementation monitoring, whether of TMDLs or Category 4b alternatives, is critical to ensure that restoration actions are actually leading to attainment of water quality standards.

Optional Evening Session: Building Informal State Networks to Continue Dialogues

The optional evening session, which was aimed at laying the groundwork for future collaborations between States on issues of mutual interest, provided an opportunity for all participants in the National Workshop to come together in an informal setting. Although these conversations took place on a one-on-one and small-group basis, one clear theme overheard throughout this session was the need to have future TMDL National Workshops of similar format and participant composition. This informal session also provided ELI staff with an opportunity to solicit from participants their thoughts on the most effective format for the State TMDL Program "snapshots" that were included in draft in the Resource Binder, and that now appear in final format on ELI's web page dedicated to this project and related TMDL issues. (See Appendix 10 for more information about accessing the web portal.)

Sessions 6-7: Getting to TMDL Implementation: What's Working?

Topic and Intended Outcomes.

The sessions convened on the second day of the National Workshop focused on various aspects of TMDL *implementation*. The opening session included panel presentations covering four issues: nonpoint source-only TMDLs in Washington, mixed point-source nonpoint source nutrient TMDLs in North Carolina, TMDLs addressing nonpoint source and agricultural impairments in California, and lessons learned from stakeholder communications in Minnesota. Small-group discussions followed, and the next session re-convened all participants for report back, plenary discussion, and remarks from EPA.

Intended outcomes for these sessions included each of the following:

- Participants will be familiar with a range of specific, successful approaches with respect to TMDL implementation.

- Participants will have a sense of the pros and cons of employing these approaches in their respective States; an understanding of likely obstacles and of any changes that would be needed to make them work; and a sense of what role EPA could play in facilitating adoption of these approaches.

- Participants will know which States (and State representatives) can serve as resources with respect to specific approaches.

Themes.

One theme to emerge from this session was that in some instances—for example, where impairment clearly results from nonpoint source pollution from known sources, and control measures are known and available—TMDLs may be unnecessary. Another theme was that State legal authority with respect to nonpoint source controls is a powerful and much-needed tool. A third theme was the importance of including stakeholders who can meaningfully contribute to TMDL implementation throughout the entire TMDL process—and giving them a voice in the decision-making. Finally, participants noted that some actions that amount to implementation nonetheless fail to technically "count" for EPA's purposes, and thus, despite their beneficial effects, fail to give State TMDL Programs the credit they need (which may be important for funding purposes).

Another key theme was that many of the factors that contribute to successful implementation of TMDLs are beyond the control of TMDL staff. These include the need for political will, which can be cultivated through education but is often available spontaneously only in the wake of an environmental disaster; legal authority; and the availability of appropriate regulatory tools. Also, changes in flow, as well as the fact that

flow tends to be controlled by other agencies, can create challenges for TMDL programs.

Session Highlights.

Panel Presentations. **Helen Bresler** of **Washington** gave a talk on her State's use of nonpoint source-only TMDLs. Washington's program is centered around the idea of getting to clean water using whatever tool is necessary – and be ready and able to use available enforcement authority. One approach the State uses is to make nonpoint source TMDLs as effective and enforceable as possible; another approach is to use TMDL alternatives. In light of the set of advantages and disadvantages of using TMDLs to address nonpoint source pollution, Ms. Bresler reported that relying on TMDLs is the right approach when the problem and the source are unknown, and when scientific evidence will be necessary to support implementation efforts. One way to strengthen nonpoint source TMDLs is to ensure that they are accompanied by a clear message that everyone contributes to water pollution, so everyone must participate in implementation of pollution-control measures. Other approaches include requiring consideration of TMDLs under State environmental impact review, defining TMDLs as 'best available science' for consideration under relevant legal provisions, and using TMDLs as evidence in enforcement actions.

Ms. Bresler was asked about how she reopened the lawsuit that had resulted in a required schedule for developing TMDLs. She said that she simply approached the litigants and explained that meeting the imposed deadline would not result in the best outcome for water quality, and they agreed a change in approach. She relayed the new agreement to EPA after working it out with the litigants.

Kathy Stecker presented a **North Carolina** perspective on implementing mixed point source/nonpoint source nutrient TMDLs. North Carolina has a history of nutrient-impaired estuaries and reservoirs. Because both point- and nonpoint sources contribute, both play a role in implementation activities. North Carolina has promulgated regulations that address both, requiring reductions; specifically, the new regulations include requirements for phosphorus and nitrogen limits for NPDES wastewater; agricultural loading reductions; stormwater (existing and new); nutrient applicators (for example, with respect to golf courses); and protection and maintenance of buffers. The State also relies on a broad stakeholder process. These tools have resulted in implementation of nutrient TMDLs in almost half of North Carolina.

Ms. Stecker concluded that mandatory measures are important for implementing mixed point- and nonpoint source TMDLs, and that favorable political conditions can also be critical to implementation. She added that because of the controversy and visibility of implementing the nutrient TMDLs, stakeholders are now more motivated to take direct action without a TMDL, because they are intimidated by what TMDLs can entail.

In response to a question, Ms. Stecker explained that North Carolina's stakeholder communications are performed by basin planners, and that North Carolina does not have TMDL implementation plans; rather, load allocations become part of the regulations. Since the load allocations are in the regulations and they have compliance deadlines, the effect is the same as if implementation of TMDLs were required.

Ken Harris of **California** spoke to National Workshop participants about the use of TMDLs to address California waters impaired by agricultural pollutants and nonpoint source pollution, more generally. California's legal and institutional structure gives the State authority to require implementation of agricultural TMDLs. Because of the State Water Boards' regulatory structure, which gives the Boards discretion to regulate pollutants, including agricultural pollutants, TMDLs become powerful planning tools that are incorporated within State implementation plans.

California developed a Nonpoint Source Pollution Control Program, which was approved by EPA and NOAA in January, 2000. The State Legislature then forced the Boards to repeal waivers that had exempted agricultural sources. Using the Policy for Implementation and Enforcement of the Nonpoint Source Program and State TMDL Implementation Policies, California has developed TMDLs for pollutants from agricultural sources, including one for pesticides and one for temperature, sediment, and flow. Now the State has significant participation on the Irrigated Lands Regulatory Program for the Central Valley and the Agriculture Advisory Board Panel.

Mr. Harris noted that California will continue to do TMDLs for agricultural sources, because of the pressure from environmental groups for certainty about what the agency is doing to improve water quality. Also, TMDLs do become part of State regulations through Basin Plans. He added that the Water Boards' authority to adjudicate groundwater basin decisions and to allocate water rights lends them additional authority.

Finally, **Minnesota's Jeff Risberg** shared lessons learned in his State with respect to stakeholder communications. Minnesota's objectives for stakeholder communications are to establish legitimacy; understand stakeholder needs and expectations; strive for full participation at all levels; and build shared responsibility for results. The stakeholder process of the State Clean Water Legacy Act serves as a case study for the power of partnerships in Minnesota. Using a tiered working group process, including a broad range of stakeholders, a consensus was reached over two years on legislation and funding options, a policy framework for the program, and a structure for an advisory council. The program has been successful because of the combination of "carrots" and "sticks." The "carrots"—incentives or motivating factors—meet the needs and expectations of a diverse set of stakeholders. The program provides local capacity through funding for third-party TMDLs, protection, and restoration activities. Finally, the program results in improved water quality: a top public priority. The "stick" components of the program, or the mandatory aspects, include the necessity of meeting federal requirements; responding to the increasing prevalence of impairment; the impacts of water pollution on economic growth; and the fear of regulations and litigation.

Mr. Risberg reported that the Act has been successful in effectively bringing stakeholders to the table. Keys to success have been aligning expectations and needs, especially for third-party TMDLs, as well as involving stakeholders throughout the process—including at the development stage. The Act requires stakeholders to share responsibility for implementation, and funding is dependent on the drafting of an implementation plan.

Discussion. Many of the discussions during these two sessions touched on, or even focused on, the need for funding to support a range of implementation activities.

In considering sources of funding for implementation activities, participants discussed funds available for mine cleanup, but also mentioned reasons why key players are often hesitant to get involved with these sites: for example, concerns about becoming liable when the responsibility party is unknown, and the State does not take responsibility. Participants indicated that some States are also considering using trading in this context.

One participant mentioned that while his State requires the development of implementation plans for nonpoint source TMDLs, the lack of funding often prevents implementation. And in many cases, even when funding is available, stakeholders resist.

Another participant explained that environmental emergencies such as fish kills have been sufficient motivation for TMDL implementation in her State. And another described the approach of using "social indicators"—that is, pre- and post-TMDL surveys that evaluate stakeholders' actions, perceptions, and attitudes toward water quality. These surveys help assess what restoration scenarios to use in the TMDL development process, how much education is needed, and after the TMDL can measure water quality "successes" in a qualitative manner. Another approach described for emphasizing TMDL implementation was to assign a particular staff person to coordinate implementation activities. A variation on this approach is to use watershed plans as a tool for implementing TMDLs and to hire a watershed coordinator to spearhead these activities.

Several States either require implementation or allow it, such as New Jersey and Florida, while others get to implementation through requirements that amount to the same result, such as California (through enforceable Basin Plans) and North Carolina (through inclusion of load allocations in enforceable regulations). Two State participants discussed the residual designation authority for nonpoint sources. Others mentioned hosting public meetings and including public groups as a way of promoting the success of implementation plans and the importance of public education.

Some participants wanted EPA to know that Section 319 is the key to TMDL implementation, and that two of the cumulative EPA water quality outcomes measures for the FY 2006-2011 Strategic Plan, “SP11” and “SP12,” cannot be achieved in the

time allowed. (SP 11 targets removal of the specific causes of waterbody impairments identified by the States in 2002, and SP12 targets improving water quality conditions in impaired watersheds nationwide, using the watershed approach). Participants also emphasized the need to act in order to avoid losing ground on the "navigable waters" issue (that is, the current regulatory confusion over the jurisdictional reach of the Clean Water Act), and the need for EPA to work more closely with other federal agencies, such as the USDA and the Army Corps of Engineers.

One participant observed that in order to encourage implementation, there needs to be a "stick" on the national level, in the form of a Clean Water Act amendment.

Finally, a participant pointed out that, in some cases, the underlying criteria are so inappropriate that the resulting reduction requirements are unfounded. One example given was the current fecal coliform and enterococci criteria that are being revised by EPA after legal actions required better science be done.

Session 8: Building the Capacity of State TMDL Programs

Topic and Intended Outcomes.

This session, which explored approaches for building the capacity of State TMDL Programs, featured the views and experiences of panelists hailing from four States: Hawaii, New Mexico, Maine, and Kansas. Plenary discussion followed the panel presentations and Q&A.

This session was designed to result in the following outcomes:

- Participants will be familiar with a range of approaches employed by other States to overcome resource-related obstacles to TMDL program success.

- Participants will have a sense of the pros and cons of employing these approaches in their respective States; an understanding of likely obstacles and of any changes that would be needed to make them work; and a sense of what role EPA could play in facilitating adoption of these approaches.

- Participants will be familiar with how some States have deployed these approaches in light of the tension to, on one hand, develop as many TMDLs as possible, and, on the other hand, develop targeted TMDLs with the greatest likelihood of implementation.

- Participants will know which States (and State representatives) can serve as resources with respect to specific approaches.

Themes.

Two overarching themes to emerge from this session were the value that can be gained by developing TMDLs with an eye to implementation, and the need for increased flexibility from EPA to account for the specific context of each State's program.

Another theme was that changes in the *types* of sources that are being permitted (*e.g.*, MS4s and CSOs), have rendered some water quality standards out-of-date.

Session Highlights.

Panel presentations. **David Penn** of **Hawaii** opened this session with a presentation on Hawaii's TMDL Program. In Hawaii, the TMDL Program is working with municipalities and suggesting that initializing implementation activities before population growth triggers more onerous regulatory authorities, such as MS4 requirements, will be more effective than waiting until there are more regulatory burdens. Mr. Penn described his agency's approach to balancing demands for producing TMDLs with the ability to produce TMDLs that will lead to implementation.

Heidi Henderson of **New Mexico** gave a talk on the elements of an effective State TMDL Program, with a particular emphasis on overcoming internal obstacles. Compared to many of its sister States, New Mexico has a very small TMDL Program, with a large geographical territory to cover, but the program has still managed to satisfy consent decree requirements. Ms. Henderson walked participants through the structure of her Program. One key to New Mexico's approach has been to develop relatively basic TMDLs, and another has been to use the "weight of evidence" approach, relying on a subset of criteria to determine impairment.

Maine's Melissa Evers also talked about overcoming obstacles, in the context of Maine's Urban Stream TMDLs. In order to develop a stormwater TMDL, Maine used impervious cover as a surrogate. Attempts to address nonpoint sources met with some skepticism from within the Program, in part because of concerns that these efforts would distract from other approaches, as well as a fear that nonpoint source TMDLs would not be effective. Outside the Program, concern was expressed regarding whether there was an actual need to address nonpoint sources at all. All of which demonstrated that the legal and technical aspects of water quality management can be difficult to convey to stakeholders; and this is all further complicated by an expectation of certainty.

Tom Stiles of **Kansas** addressed the oft-discussed issue of how to balance limited State resources for TMDL development in light of competing concerns of pace, rigor, and expectations. Mr. Stiles discussed a strategy for finding a good combination of developing TMDLs and implementing TMDLs, given pressures to produce large numbers of TMDLs at a fast pace, while maintaining sufficient rigor of the end product. The let-up of pressure in the wake of a consent decree has allowed Kansas begin to use more sophisticated models, and more rigorous source-assessment, and then to verify them. Keys to effective implementation have included developing a strong linkage

to the source of the pollution, and a system for prioritization. This, in turn, has allowed the State to better meet EPA expectations for implementation. Nonetheless, challenges persist. These include sometimes unrealistic and unfounded water quality standards, and a lack of active environmental groups. Mr. Stiles was asked about the costs for conducting a use attainability analysis. He explained that that the process is simple in Kansas, and so not costly.

Discussion. Interestingly, discussion during this session focused on issues of flow. It was noted that one example of the problem with designated uses is that it is impossible to meet standards during high flow events in irrigation ditches—though it is very unlikely that anyone will actually be affected through primary contact under those conditions. One suggestion was that the frequency and duration standards should be adjusted appropriately, and potentially suspended in wet weather. While California, for example, has made it illegal to be in a channel in high flows, allowing for higher pollutant loads during those periods, EPA has not accepted exclusions in other cases where nothing prevents people from accessing a particular waterbody.

Session 9: Evaluating Success: Measuring, Monitoring, and Tracking

Topic and Intended Outcomes.

This session focused on the many ways in which State success in the TMDL Program is evaluated, with a focus on assessing *interim* measures of success. The session featured two panel presentations, one on innovations in tracking arising out of Region 5, and the other on EPA's own TMDL results analysis. Q&A and plenary discussion followed.

The planners sought to achieve the following outcomes:

- Participants will be familiar with a range of specific innovations with respect to tracking the success of TMDL implementation—those presented by panelists, as well as those shared by other participants.

- Participants will have a sense of the pros and cons of employing these innovations in their respective States; an understanding of likely obstacles and of any changes that would be needed to make them work; and a sense of what role EPA could play in facilitating adoption of these innovations.

- Participants will know which States (and State representatives) can serve as resources with respect to specific innovations.

Themes.

A major theme from this session was that the States see a need for progress indicators that take into account not only environmental outcomes, but also the fact that efforts are being made. A second theme was that there is a major challenge in finding

ways to maximize resources by deploying funds and staffing, where possible, to the most efficient and effective aspects of State clean water programs.

There was general agreement that obtaining continued support for implementation activities requires being able to report on outcomes. In spite of efforts to develop performance measures, it is very hard to show results, and doing so can take many years. One participant suggested that there could be a series of objective indicators, such as institutional improvements, completing a TMDL, and taking steps to implement it.

Another theme was that the current system prioritizes addressing point sources, though, of course, in many cases it is the nonpoint sources that are the nub of the problem—especially as point source problems come increasingly under control.

Session Highlights.

Panel Presentations. **Jeff Risberg** of Minnesota and **Dean Maraldo** of **EPA Region 5** gave a joint presentation on that Region's innovations in tracking. Receiving continued support for implementation activities, they noted, requires being able to report on the outcomes: "With money, comes accountability." Even beyond funding issues, Minnesota's new "Clean Water Legacy Act" requires monitoring the outcomes of protection and restoration. In response to this concern, Wisconsin and Minnesota are developing tracking systems to be able to demonstrate results. Through an interagency work group, they have developed a program-effectiveness framework for analyzing data. The framework includes factors such as organizational performance, partnerships/leveraging, social indicators, and environmental outcomes; climate has not been factored in yet. Next steps for this project require training on using the database.

Doug Norton of **EPA Headquarters** spoke about TMDL results analysis at EPA. While there will never be complete knowledge about all aspects of the TMDL Program, Mr. Norton noted that there are certain areas that currently are "blind spots"—and that these really matter for improving performance. Results analysis is one of the areas of focus in the long-range Watershed Branch plan. The Branch wants to recognize incremental progress, and it also acknowledges that implementation means putting practices into place, and does not necessarily depend on achieving desired environmental outcomes. This is important, because outcome measures do not tend to represent all the efforts that are being made, and there needs to be an accurate way to measure progress in order to maintain funding. It was noted that, in order to get better information about which TMDLs are being effectively implemented (and because it is impossible to evaluate all of them), regulators can look at a statistical sample. Mr. Norton explained that having a statistical sample of implementation rates will add information about the difference in implementation patterns between point-source-only and nonpoint source-only TMDLs. It was note that nonpoint source pollution is not solely the responsibility of EPA: there are many other agencies involved at the federal and State levels, so it is hard for a single program to be responsible for all nonpoint- source results.

EPA is now conducting a study of implementation rates and patterns in Region 5 and looking at factors that contribute to program effectiveness.

In response to a question about evaluating recovery potential of impaired waters as a method for setting priorities, Mr. Norton explained that the Watershed Branch is using three classes of program indicators: social, stressor exposure, and ecological capacity. He added that a user-support website will be available to build a case about what each of these indicators means, and that users will be able to screen the database for different types of data and come out with scores for ecological and social axes. The program has been piloted in Illinois, Pennsylvania, and Maryland.

EPA representatives appeared to agree that there is a need for more monitoring resources for TMDLs. (It was clarified that the statistical study would not be funded with any monitoring resources, and if the program is green-lighted on a national level, it will only be once in five years—with data to be gathered by an EPA-funded contractor.)

Discussion. A participant observed that the GRTS (Grants Reporting and Tracking System) database has a field that links the list identification number from the Section 319 list to whether there are any related implementation activities. It was suggested that there should be credit for institutional improvements that lead to on-the-ground improvements. Mr. Norton said there was talk that documenting restoration can be shown by data on the water but that there should also be programmatic progress indicators, such as a completed TMDLs and whether a TMDL is being implemented. Another participant pointed out that the TMDL Program lacks implementation tools for point sources, beyond permits. Measures for non-point sources are voluntary, but progress should be reported if it is making related programs better.

A participant observed that while it will take a long time to see outcomes for point sources, it will be even longer to then get to the nonpoint sources. But, since we actually know that the nonpoint sources are causing much of the problem, why are we not finding a way to deal with nonpoint sources today? EPA is seeking to provide more powerful statistics to show what we know now, which should help with this issue. Another participant suggested that the group could agree that as an action item coming out of the National Workshop, each State could put the same language in their respective integrated reports on this issue.[3]

A participant commented that some problems from the 1970s, such as dissolved oxygen, had largely been solved. But, it was added, there remains a great need for more funding for monitoring. One State had a monitoring program that was progressive (for assessment), but when the TMDL Program was created, the State had to shift resources away from assessment to use them for TMDLs. Now, the State needs

[3] Note: No language was formally agreed to in this regard, formally or informally, during the course of the National Workshop. However, there was evident enthusiasm among the plenary group for some sort of a coordinated approach on the nonpoint source issue that potentially reflected a consensus view of the State participants.

statistical modeling for TMDL implementation. They are trying to figure out how to monitor outside of the TMDL cycle.

One participant raised a question about where wetlands fit into the restoration picture, as they are both a resource in need of restoration and a tool for restoring other impaired waters. Moreover, other agencies have data relating to wetlands that is not always readily accessible to State TMDL Programs. It was observed that Wisconsin is using the Source Water Assessment Program (SWAP) model, developed by the University of Wisconsin, to determine where buffers could be effectively used to restore wetlands.

Another participant wondered whether climate change is accounted for in tracking of implementation outcomes, or in modeling. The sense of some participants on this point was that while no specific efforts have been made, there is a recognition that some TMDLs may have to be redone in light of altered flow regimes due to climate alterations.

Session 10: Open Forum on the Future of the TMDL Program: Where We Are Going and Where We Should Be Going

Topic and Intended Outcomes.

This session—the most forward-looking, and perhaps also the most lively, of the National Workshop—asked participants both to comment on the state of the TMDL Program and to offer their ideas for its future direction. Unlike most other sessions, there were no panel presentations. In advance of the session, and to spur thought and inform discussion, each participant was asked to think about what he or she would do as the “czar” or “czarina” of the National TMDL Program. This session proved to be part assessment, part critique, and part brainstorming. The entire session was conducted in plenary.

The following session outcomes were intended:

- Participants will have identified for discussion any issue or innovation that has not otherwise been covered during the course of the National Workshop.

- State participants and EPA will have specific, concrete, forward-looking ideas for the improvement—and evolution—of the TMDL Program.

Themes & Session Highlights.

Over the course of this fast-moving, open-ended plenary discussion, ELI facilitators sought to capture the depth and breadth of comments coming from those assembled. Following is a representative cross-section of the comments made by State participants.

Opportunities for a program in flux? It was an oft-made point that the TMDL Program is in a state of flux, or transition, as many consent decrees are concluded. At least one participant characterized the status quo as "the TMDL Identity Crisis."

Multiple participants expressed their desire to see TMDLs become better integrated into water quality programs, and become one step in a process that leads to a discrete solution. There was a call for the development of a holistic program that covers all steps in the process—from designation of uses to TMDL implementation—that could be thought of as an "Impaired Waters Program."

One participant shared the example of having a TMDL Section, with no regulatory role, but an implementation one. The Section takes care of planning for nonpoint source pollution, and has TMDLs as a tool in the toolkit, but it wants a water protection program that covers implementation, with a handoff to work with stakeholders. "All the parts should work together to the make process seamless," this participant explained. Such a holistic approach would also allow for more flexibility in allocation of funds to most effective activities.

"We've let the focus be on TMDL 'beans,' rather than water quality."

There was general agreement among participants that in order to be effective, TMDL Programs must function better in collaboration with other water quality programs. The watershed approach may be one vehicle: "We can use the TMDL Program to shift lenses to a watershed basis, to evaluate 'are things working in the watershed?'"

A number of participants suggested that the Clean Water Act framework does not provide the necessary tools to ensure water quality. Many participants wondered whether it was not time to consider a substantial amendment to the Act.
A participant observed, "It's time to redo the Clean Water Act." This could be an opportunity to incorporate the TMDL Program into a larger clean water program. Another participant analogized this state of affairs to a household chore: "You can't just vacuum your living room rug once. The Clean Water Act rug has not been vacuumed since 1972. It's time to vacuum the rug."

Despite criticisms of the TMDL as a legal tool, many participants saw the TMDL as continuing to play an important role in water quality:

- "You want a water protection program to cover everything, but TMDLs is a piece, and it works okay."
- "TMDLs are a driver for adaptive implementation in each watershed."
- "The TMDL process can be a means of getting things done, bringing stakeholders together."
- "I want to move to program integration – put the TMDL program back in its place: a tool."
- "The TMDL program as the 'Grand Unification Theory.'"

Appropriate water quality program focus. Participants talked a great deal about the appropriate focus of water quality programs. Some argued that the key is to solve the problems first, rather than preventing more pollution. Others said the key is the original plan of Section 319: anti-degradation. A third group suggested the need to strike a balance between restoration and protection.

One participant pointed out that the goal of TMDLs is to attain water quality standards, so at some point the Program will function simply to prevent pollution. She wondered how programs will function when all TMDL listing is completed, and we have continuous implementation. She suggested that continuous prevention would not be politically palatable, so it will be important to find a way to present nonpoint source activities that will not sound discouraging. “When are we going to be done with nonpoint sources? Never. It is something that must be done forever. It is okay to be done over and over.”

Another participant remarked that, as conditions change, there will have to be a reevaluation of what can be released into our waters, so we will have to continue to develop and implement TMDLs. We will never be done with TMDLs, given the carrying capacity of the environment. “As population increases, we can’t [continue to] produce the same amount of waste and same level of impact to the environment. As conditions change, we will reevaluate what we can put out, to meet anti-degradation and water quality standards. We’ll have to either crack down or change the standards.” This is illustrated by the fact that TMDLs are already being applied to many pollutants that were not originally envisioned, and that criteria will be revised.

It was noted that some States currently do use “preventative TMDLs” (*e.g.*, Massachusetts, Texas, Florida, Montana, and Kansas), but they do not “count” for credit—so-called EPA “bean counting”—when the waters are not impaired. However, they can be used for other purposes, such as town planning or outstanding waters programs. One State participant noted that EPA directed his State *not* to do preventative TMDLs.

One participant said that while protection is critical, restoration does not preclude protection from larger problems. Another explained that viewing impaired waterbodies through the lens of the factors needed for listing sometimes means missing projects that might be good candidates for Section 319 funding for preventative efforts. “If we don’t prevent some things, we’re always in reaction mode—there must be a balance.”

It was discussed whether preventative TMDLs have regulatory teeth. One participant explained that while developing a TMDL, if monitoring reveals that the impairment is gone, one could continue to develop the TMDL for preventative purposes (though, absent impairment, the TMDL does not “count” for development requirements). Another participant reported that every year his State reviews every basin to determine whether any new waters should be designated as outstanding. As more waters receive the outstanding waters designation, the anti-degradation rule applies more broadly, and more waterbodies must meet all water quality standards.

It was observed that States can employ risk management and quantify what is the most important thing to do. With sound prioritization, States can carry out both protection and restoration activities. One person concluded the discussion of prevention-versus-restoration by saying that focusing on prevention is like being concerned with repainting the living room while there is grease fire in the kitchen. "Focus on prevention? No way, I have other pressing water problems to fix first."

Shift to addressing nonpoint source pollution. There was also significant discussion about the changing focus from point sources to nonpoint sources. The problem, of course, is the lack of tools, controls, and funds directed at nonpoint sources. "The fundamental problem with this program is with the archaic law," said one participant. "'Daily' worked for point sources, but not for nonpoint." Another participant suggested that the TMDL Program go back to the wasteload reevaluation format if the law does not change, to better address nonpoint sources.

"The TMDL Program is where the rubber meets the road. We must synthesize from other programs, but being called 'TMDL,' no one else gets it. We need to change the title, change the image." Another participant pointed out that the terms "TMDL" and "impaired waters" are not in Section 319 of Clean Water Act, which can result in ignoring the whole issue of prevention. "There is too much tunnel vision on TMDLs—TMDLs have taken over the world." A participant added: "TMDLs isn't a program, it's a process, or a tool. It fits into watershed protection and restoration – it's a tool, for both uses."

Importance of coordination. Participants further talked about the importance of communication between programs, especially with EPA, as well as the need for EPA to direct nonpoint source controls.

Participants argued that States should have more of a role in allocating water quality funding that they receive from EPA, in order to address State priorities. Water quality funding sometimes goes to agencies that do not have the same administrative requirements for showing results as TMDL Programs and thus are not accountable for how they spend the money. And the funds could equally have been funneled to TMDL Programs that are accountable for showing results. One person pointed out that departments of agriculture do have to do Grants and Reporting Tracking System (GRTS) if they receive funds from Section 319.

Need for technical guidance. A participant pointed out that the scope of TMDLs has been greatly expanded to include "pollutants" such as high flows, impermeable surface, shade, and other factors. "We need EPA for technical guidance . . . on new types of pollutants and teeth on how to develop." It was argued that EPA encourages States to have nutrient standards and standards for new chemicals; and as soon as standards are completed, they have to be adopted; and as soon as they are sampled, they are expected to be on the 303(d) list. "There should be guidance to figure out how to work with those before just doing a TMDL."

Another participant suggested that EPA could supply minimum requirements for each new source and avoid the need for each of the States having to "reinvent the wheel" in many instances. "If EPA is doing new standards, they should make new regulatory standards, not require States to develop a new TMDL for each waterbody for new impairments." It was noted that perhaps in the current political environment, States must take the lead on promulgating new standards. Another participant agreed, stating that after completion of consent decrees, EPA performance measures are beside the point when a State makes a decision to do something about TMDLs and protecting water. "What matters is the priorities of the State—is water quality improving and being protected? States are on front line of TMDL management." This participant elaborated that stakeholders, such as watershed groups and urban-area authorities, must make decisions on what is important and build momentum for addressing issues such as nonpoint sources. "EPA must support States' agendas, first and foremost."

Communication with stakeholders. One participant argued that we need to get better at explaining the water quality problem, as well as the potential solutions—there must be improvement in "telling the story," and this is something that the STORET database could be mined for. This must be done, the participant argued, through concrete examples and science.

Participants also offered a range of *specific recommendations*:

- Increased funding to help States develop more rigorous TMDLs to support better implementation.
- No more waiting for the "voluntary approach."
- Dedicate money for implementation.
- Convene a similar National Workshop to this one in one or two years.
- Work for regulation of nonpoint sources.
- Work to make other programs (particularly related to agriculture) accountable to show water quality improvements if they accept water quality money.

Session 11: Workshop Wrap-Up

Topic and Intended Outcomes.

This short session provided a final opportunity for participants to be heard, in plenary, on any aspect of the National Workshop or the way forward. It was also an opportunity for EPA to share closing remarks.

The session was designed to achieve the following outcomes:

- Participants will have had an opportunity to ask questions with respect to any innovation or issue identified during the National Workshop—including questions about where to obtain more information.

- Participants will have identified areas where further innovation is needed, as well as any additional innovations suggested by the Workshop.

- Participants will have had an opportunity to hear remarks of EPA staff, in light of National Workshop discussions, and to pose clarifying questions.

- Participants will have reached agreement, to the extent possible, with respect to any common ideas or proposals to arise from Workshop discussions, including recommendations as to next steps necessary to sustain a dialogue on Workshop issues.

Session Highlights.

Discussion. There was some discussion during the last session about Clean Water Act jurisdictional issues, including questions about how various States are currently handling ephemeral waters. (For example, in Hawaii, it was noted, ephemeral waters are still considered waters of the State and have had TMDLs done for them. And in Arizona, if there is a tributary to a named stream, uses apply—but there likely will be jurisdictional challenges.)

There was also discussion of the potential chilling effect of the 2006 court ruling on "daily" loads on TMDL innovation. Some participants indicated that their respective States now simply do an annual load and divide by 365 days; other States have done nothing in response to the ruling; for at least one State, that decision brought State efforts "to a grinding halt" for a year.

With respect to next steps, a range of possibilities—some short-term and some long-term—were offered by participants:

- Rewrite or reauthorize the Clean Water Act, particularly to provide a better legal foundation for the TMDL program and to improve the available tools for implementing nonpoint source controls.
- Hold more workshops like this one.
- Create a position for a "national coordinator of TMDL coordinators."
- Create a blog or listserv to enhance communications among this group.
- Take better advantage of existing State tools and political will.
- Better rely on TMDLs to drive the establishment of local ordinances.
- Obtain more enforcement tools, including through the Category 4b mechanism.
- Consider ways to obtain protection from third-party lawsuits.
- Include the public in the development of implementation plans—*i.e.,* adopt the plan and select a facilitator from a watershed group.

EPA Remarks. John Goodin of EPA closed the National Workshop. He noted that it was an unprecedented gathering, coming at the appropriate time in the evolution of the TMDL Program. He thanked the participants and expressed his appreciation of their willingness to share with EPA the "unfiltered views" of State TMDL practitioners.

III. ELI Recommendations for Immediate Next Steps

Based on the communications between Environmental Law Institute staff and State TMDL Program representatives during the course of this project—leading up to, during, and following the two-day National Workshop—ELI presents the following set of recommendations to EPA and other TMDL Program stakeholders, as appropriate. These recommendations are intended to help continue and build upon the interest and energy demonstrated by State and federal participants in this process.

- Make available to State TMDL Program Coordinators new channels of communication. (ELI will seek to do this by maintaining an up-to-date TMDL resource website, and by launching a basic listserv for National Workshop participants.)

- Convene, on an annual or biennial basis, workshops similar in inclusiveness and subject matter to the June 2008 National Workshop—*i.e.*, events with a broad focus on all aspects of State TMDL Program implementation.

- EPA should consider making available to States through the agency web portal as many model TMDLs as possible to help establish and promote clear, consistent standards for States to follow in all aspects of TMDL development and implementation.

- To the greatest extent possible, take into account in the formulation of TMDL Program policy and TMDL Program event planning the kinds of issues and concerns identified by State participants in this project—recognizing the nature of the barriers they face with respect to TMDL development and implementation.

ENVIRONMENTAL LAW INSTITUTE®

AN INDEPENDENT, NON-PARTISAN ENVIRONMENTAL EDUCATION AND POLICY RESEARCH CENTER

NATIONAL WORKSHOP TO ADVANCE STATE TMDL PROGRAMS

National Conservation Training Center
Shepherdstown, West Virginia
June 24-25, 2008

WORKSHOP AGENDA
(WITH VISION & GOALS)

This project made possible through a cooperative agreement with the United States Environmental Protection Agency

VISION FOR THE WORKSHOP

To provide an opportunity for State TMDL Program participants to discuss with one another and EPA their ideas about the status and direction of the TMDL Program and to identify specific, concrete, forward-looking ideas for the improvement and evolution of the TMDL Program.

GOALS

- For participants to share in a free and open forum their ideas about what is working in the TMDL Program—and what could be changed—to achieve:

    - The development of TMDLs that are more "value added"—that is, TMDLs that are implementable and lead to meeting water quality standards;
    - As appropriate, the use of value-added options *other* than TMDLs (including TMDL alternatives) for addressing impaired waters;
    - The implementation of TMDLs; and
    - Accurate assessments of both interim and long-term measures of program success.

- For participants facing similar TMDL program issues and obstacles to identify one another and, if they so choose, agree on means of communicating and working together in the future.

AGENDA

Monday, June 23 ***Arrival, Check-In, & Registration***

3:00 pm – 8:00 pm	NCTC Check-In and Workshop Registration Main Lobby (Note: all participants are staying in Murie Lodge.)
5:30 pm – 7:00 pm	Dinner (Open) Commons Dining Room
8:00 pm – 9:00 pm	Welcome Reception Murie Lodge Lounge Area

Tuesday, June 24 — *National Workshop Day One: Development*

6:30 am – 8:30 am — Breakfast (Open)
Commons Dining Room

8:30 am – 9:00 am — **Welcome, Introductions, and Workshop Overview**
Room 151, Instructional West Building

Greeting and Introductions
Bruce Myers, ELI

Opening Remarks
Craig Hooks, EPA

Workshop Overview
Sandra Nichols, ELI

9:00 am – 10:00 am — **Session #1**
Innovations in TMDL Development (Part I):
Sharing Examples of New Ideas and Approaches
Room 151, Instructional West Building

Facilitator
Bruce Myers, ELI

Session Co-Coordinators
Kathy Stecker, NC
Heidi Henderson, NM

Panel Presentations and Q&A

(1) The Northeast Regional Mercury TMDL
Susannah King, NEIWPCC

(2) West Virginia's Watershed Approach
James Summers, WW

(3) Connecticut's Methodology for Impervious Cover TMDLs
Chris Bellucci, CT

Session #1 Outcome:
Participants will be familiar with at least three specific innovations in TMDL development.

10:00 am – 10:30 am — Morning Break
Refreshments Available in Instructional West Building

10:30 am – 12:00 pm **Session #2**
Innovations in TMDL Development (Part II):
More Innovations—Small Group Discussions
Room 154, Instructional West Building
Room 158, Instructional West Building

Facilitators
Bruce Myers, Sandra Nichols, Adam Schempp, Nike Adeyeye, ELI

Discussion questions: *what other innovations could you share from your State? How would the approaches presented by the panelists work in your State? What innovations would be needed to make them work in your State? Does your State face any barriers to using such approaches that EPA could help with?*

12:00 pm – 1:00 pm Lunch (with Group)
Commons Dining Room

1:00 pm – 2:30 pm **Session #3**
Innovations in TMDL Development (Part III)
Room 151, Instructional West Building

Facilitator
Bruce Myers, ELI

Report Back from Small Group Discussions

Plenary Discussion

EPA Remarks

John Goodin, EPA

Session #2 and Session #3 Outcomes:

- *Participants will be familiar with a range of innovations in TMDL development—those presented by panelists in Session #1, as well as those shared by other participants in Session #2.*
- *Participants will have a sense of the pros and cons of implementing the innovations discussed in Sessions #1 & #2 in their State; an understanding of likely obstacles and of any changes that would be needed to make the innovations work; and a sense of what role EPA could play in facilitating adoption of these innovations.*
- *Participants will be familiar with how some States have deployed these innovations in light of the tension to, on one hand, develop as many TMDLs as possible, and, on the other hand, develop targeted TMDLs with the greatest likelihood of implementation.*
- *Participants will know which States (and State representatives) can serve as resources with respect to specific innovations.*

2:30 pm – 3:00 pm Afternoon Break
Refreshments Available in Instructional West Building

3:00 pm – 5:00 pm **Session #4**
Development of Non-TMDL Options for Addressing Impaired Waters
Room 151, Instructional West Building

Facilitator
Sandra Nichols, ELI

Session Coordinator
Jason Sutter, AZ

Panel Presentations and Q&A

(1) To 4b or Not to 4b: The Florida Experience
Eric Livingston, FL

(2) "Straight to Implementation"—A TMDL Alternative
Helen Bresler, WA

(3) Environmental Accountability Projects: Alternatives to Address Impaired Waters in Wisconsin and Other Region 5 States
Nicole Richmond, WI

Plenary Discussion

Session #4 Outcomes:

- *Participants will be familiar with a range of innovative, non-TMDL options for addressing impaired waters—those presented by panelists, as well as those shared by other participants.*
- *Participants will have a sense of the pros and cons of implementing the non-TMDL innovations discussed; an understanding of likely obstacles and of any changes that would be needed to make the innovations work; and a sense of what role EPA could play in facilitating adoption of these innovations.*
- *Participants will know which States (and State representatives) can best serve as resources with respect to specific innovations.*
- *Representatives of EPA will have an understanding of programmatic obstacles, at the national level, faced by States with respect to non-TMDL options for addressing impaired waters.*

5:00 pm – 5:30 pm **Session #5**
Day One Wrap-Up
Room 151, Instructional West Building

Facilitator
Bruce Myers, ELI

Plenary Discussion

Common Ideas/Proposals Following Day One?

EPA Remarks

John Goodin, EPA

Session #5 Outcomes:

- *Participants will have their questions answered with respect to any innovation identified during Day One discussions—including questions about where to obtain more information.*
- *Participants will identify any additional innovations suggested by Day One discussions.*
- *Participants will have an opportunity to follow up directly with EPA HQ staff as to any aspect of Day One discussions.*

5:30 pm – 6:00 pm Open

6:00 pm – 7:00 pm Dinner (with Group)
Commons Dining Room

7:00 pm – 8:00 pm **Optional Evening Session**
Building Informal State Networks to Continue Dialogue
Murie Lodge Lounge Area

Facilitators
Bruce Myers & Sandra Nichols, ELI

Evening Session Outcome:

Participants facing similar TMDL program issues and obstacles will have identified one another and established contact, with the aim of collaborating on these issues and obstacles in the future.

Wednesday, June 25 ***National Workshop Day Two: Implementation***

6:30 am – 8:00 am Breakfast (Open)
Commons Dining Room

8:00 am – 9:30 am **Session #6**
Getting to TMDL Implementation (Part I): What's Working?
Room 151, Instructional West Building

Facilitator
Sandra Nichols, ELI

Session Coordinator
Kimberly Cenno, NJ

Panel Presentations and Q&A (60 minutes)

(1) Nonpoint Source-Only TMDLs: Using the Right Tool to Get to Clean Water

Helen Bresler, WA

(2) Implementing Mixed Point Source/Nonpoint Source Nutrient TMDLs

Kathy Stecker, NC

(3) Evolution of Using TMDLs to Address NPS/Ag Impaired Waters in California

Ken Harris, CA

(4) Stakeholder Communications: Lessons Learned from Minnesota

Jeff Risberg, MN

Small Group Discussions (30 minutes)
Room 154, Instructional West Building
Room 158, Instructional West Building

Facilitators
Bruce Myers, Sandra Nichols, Adam Schempp, Nike Adeyeye, ELI

Discussion questions: *what other approaches could you share from your State? How would the approaches presented by the panelists work in your State? What further tools or innovations would be needed to make them work? Does your State face barriers to using the proposed approaches that EPA could help with? Are there national initiatives that we could suggest to EPA?*

9:30 am – 10:00 am **Session #7**
Getting to TMDL Implementation (Part II)
Room 151, Instructional West Building

Facilitator
Sandra Nichols, ELI

Report Back from Small Group Discussions

Plenary Discussion

EPA Remarks

John Goodin, EPA

Session #6 and Session #7 Outcomes:

- *Participants will be familiar with a range of specific, successful approaches with respect to TMDL implementation.*
- *Participants will have a sense of the pros and cons of employing these approaches in their states; an understanding of likely obstacles and of any changes that would be needed to make them work; and a sense of what role EPA could play in facilitating adoption of these approaches.*
- *Participants will know which states (and state representatives) can serve as resources with respect to specific approaches.*

10:00 am – 10:30 am Morning Break
Refreshments Available in Instructional West Building

10:30 am – 12:00 pm **Session #8**
Building the Capacity of State TMDL Programs
Room 151, Instructional West Building

Facilitator
Nike Adeyeye, ELI

Session Coordinator
Kathy Stecker, NC

Panel Presentations and Q&A

(1) Building the Capacity of State TMDL Programs on Hawaiian Time

David Penn, HI

(2) Elements of an Effective State TMDL Program: Overcoming Internal Obstacles

Heidi Henderson, NM

(3) Working with Stakeholders for Effective Progress
Melissa Evers, ME

(4) Balancing State Resources for TMDL Development: Pace, Rigor & Expectations
Tom Stiles, KS

Plenary Discussion

Session #8 Outcomes:

- *Participants will be familiar with a range of approaches employed by other states to overcome resource-related obstacles to TMDL program success.*
- *Participants will have a sense of the pros and cons of employing these approaches in their states; an understanding of likely obstacles and of any changes that would be needed to make them work; and a sense of what role EPA could play in facilitating adoption of these approaches.*
- *Participants will be familiar with how some states have deployed these approaches in light of the tension to, on one hand, develop as many TMDLs as possible, and, on the other hand, develop targeted TMDLs with the greatest likelihood of implementation.*
- *Participants will know which states (and state representatives) can serve as resources with respect to specific approaches.*

12:00 pm – 1:00 pm Lunch (with Group)
Commons Dining Room

1:00 pm – 2:30 pm **Session #9**
Evaluating Success: Measuring, Monitoring, and Tracking
Room 151, Instructional West Building

Facilitator
Adam Schempp, ELI

Session Coordinator
Jack Smith, WY

Panel Presentations and Q&A

(1) Innovations in Tracking from Region 5
Jeff Risberg, MN
Dean Maraldo, EPA Region 5

(2) TMDL Results Analysis at EPA: Fixing the Blind Spots
Doug Norton, EPA HQ

Plenary Discussion

Session #9 Outcomes:

- *Participants will be familiar with a range of specific innovations with respect to tracking the success of TMDL implementation—those presented by panelists, as well as those shared by other participants.*
- *Participants will have a sense of the pros and cons of employing these innovations in their states; an understanding of likely obstacles and of any changes that would be needed to make them work; and a sense of what role EPA could play in facilitating adoption of these innovations.*
- *Participants will know which states (and state representatives) can serve as resources with respect to specific innovations.*

2:30 pm – 3:00 pm Afternoon Break
Refreshments Available in Instructional West Building

3:00 pm – 4:00 pm **Session #10**
Open Forum on the Future of the TMDL Program: Where We Are Going and Where We Should Be Going
Room 151, Instructional West Building

Facilitator
Sandra Nichols, ELI

Plenary Discussion

Session #10 Outcomes:

- *Participants have raised any issue or innovation that has not otherwise been covered during the course of the Workshop.*
- *State participants and EPA will have specific, concrete, forward-looking ideas for the improvement—and evolution—of the TMDL Program.*

4:00 pm – 4:30 pm **Session #11:**
Workshop Wrap-Up
Room 151, Instructional West Building

Facilitator
Bruce Myers, ELI

Plenary Discussion

Common Ideas/Proposals Following Workshop?

EPA Remarks

John Goodin, EPA

Discussion of Next Steps

Session #11 Outcomes:

- *Participants will have had an opportunity to ask questions with respect to any innovation or issue identified during the Workshop—including questions about where to obtain more information.*
- *Participants will have identified areas where further innovation is needed, as well as any additional innovations suggested by the Workshop.*
- *Participants will have had an opportunity to hear the remarks of EPA staff to Workshop discussions, and to ask clarifying questions.*
- *Participants will have reached agreement, to the extent possible, with respect to any common ideas or proposals to arise from Workshop discussions, including recommendations as to next steps necessary to sustain a dialogue on Workshop issues.*

Check-Out & Departure

4:45 pm	Departure of Shuttle Bus for Dulles Airport (Participants with Wednesday evening flights)
5:30 pm	Departure of Shuttle Bus for Holiday Inn Washington-Dulles (Participants with Thursday flights)

Appendix 2: Participant List

State Participants

Charlie Reynolds
Senior Environmental Engineering
Specialist, Water Quality Branch
Alabama Department of
Environmental Management
P.O. Box 301463
Montgomery, AL 36130
334-271-7842
cpr@adem.state.al.us

*** Ken Harris**
Manager, TMDL Section
California State Water Resources
Control Board
1000 I Street, 15th Floor
Sacramento, CA 95814
916-341-5500
kharris@waterboards.ca.gov

Laura Eldred
Nonpoint Source Section Manager (Acting)
Alaska Department of
Environmental Conservation
1700 E. Bogard Rd., B103
Wasilla, AK 99654
907-376-1855
laura.eldred@alaska.gov

Rebecca Anthony
TMDL Developer
Colorado Department of
Public Health and the Environment
Water Quality Control Division
4300 Cherry Creek Drive South
Denver, CO 80246
303-692-3339
rebecca.anthony@state.co.us

*** Jason Sutter**
Manager, TMDL Unit
Arizona Department of
Environmental Quality
1110 W. Washington Street
Phoenix, AZ 85007
602-771-4468
sutter.jason@azdeq.gov

*** Chris Bellucci**
Environmental Analyst
Connecticut Department of
Environmental Protection
79 Elm Street
Hartford, CT 06106
860-424-3735
christopher.bellucci@ct.gov

Hassan Mirsajadi
Environmental Engineer
Delaware Department of
Natural Resources and Environmental
Control
Division of Water Resources
Watershed Assessment Section,
Suite 220
820 Silver Lake Boulevard
Dover, DE 19904-2464
302-739-9939
Hassan.Mirsajadi@state.de.us

Marti Bridges
TMDL Program Manager
Idaho Department of Environmental Quality
1410 N. Hilton
Boise, ID 83706
208-373-0382
marti.bridges@deq.idaho.gov

Eric Livingston
Bureau Chief, Watershed Restoration
Florida Department of
Environmental Protection
2600 Blair Stone Road
Mail Station 3510
Tallahassee, FL 32399
850-245-8430
eric.livingston@dep.state.fl.us

Dean Studer
Supervisor, Planning Unit,
Watershed Management Section
Illinois Environmental
Protection Agency
1021 North Grand Ave. East
P.O. Box 19276
Springfield, IL 62794
217-782-0605
dean.studer@illinois.gov

Debbie Siemon
TMDL Modeling and Development Unit,
Watershed Planning and Monitoring
Program
Georgia Department of
Natural Resources: Environmental
Protection Division
4220 International Parkway, Suite 101
Atlanta, GA 30354
404-675-1673
debbie_siemon@dnr.state.ga.us

Andrew Pelloso
Chief, NPS/TMDL Section, Watershed
Planning Branch, Office of Water Quality
Indiana Department of
Environmental Management
100 N. Senate Ave.
MC 65-42 IGCN 1255
Indianapolis, IN 46204
317-233-2481
apelloso@idem.in.gov

David Penn
TMDL Coordinator
Hawaii Department of Health
Environmental Planning Office
919 Ala Moana Blvd., Room 312
Honolulu, HI 96814
808-586-4339
david.penn@doh.hawaii.gov

Allen Bonini
Watershed Improvement Section
Iowa Department of
Natural Resources
502 E. 9th Street
Des Moines, IA 50319
515-281-5107
allen.bonini@dnr.iowa.gov

Tom Stiles
Chief, Bureau of Water, Watershed Planning Section
Kansas Department of Health and Environment
1000 SW Jackson Street, Suite 420
Topeka, KS 66612
785-296-6170
tstiles@kdhe.state.ks.us

Dinorah Dalmasy
Head, Model Development and Application, Water Quality Modeling Division
Maryland Department of the Environment
1800 Washington Blvd
Baltimore, MD 21230
410-537-3699
ddalmasy@mde.state.md.us

Scarlett Stapleton
Environmental Scientist, TMDL Section
Kentucky Division of Water
14 Reilly Road
Frankfort, KY 40601
502-564-3410
scarlett_stapleton@ky.gov

Rick Dunn
Program Supervisor, Watershed Planning Program
Massachusetts Department of Environmental Protection
627 Main Street, 2nd Floor
Worcester, MA 01608
508-767-2874
dennis.dunn@state.ma.us

Linda Levy
Administrator,
Water Quality Assessment Division
Louisiana Department of Environmental Quality
602 N. Fifth Street
Baton Rouge, LA 70802
225-219-3483
linda.levy@la.gov

Brenda Sayles
Head of Lake Michigan Unit, Surface Water Assessment Section, Water Bureau
Michigan Department of Environmental Quality
Constitution Hall
525 West Allegan St.
P.O. Box 30273
Lansing, MI 48909
517-335-4198
saylesb@michigan.gov

Melissa Evers
Environmental Specialist
Maine Department of Environmental Protection
17 State House Station
Augusta, ME 04333
207-287-2838
melissa.evers@maine.gov

*** Jeff Risberg**
Impaired Waters Coordinator
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194
651-296-7231
jeff.risberg@state.mn.us

Dean Yashan
Watershed Management Section Supervisor
Montana Department of
Environmental Quality
1520 E. Sixth Avenue
P.O. Box 200901
Helena, MT 59620
406-444-5317
dyashan@mt.gov

*** Kathy Stecker**
Supervisor, Modeling & TMDL Unit
North Carolina Department of
Environment and Natural Resources
1617 Mail Service Center
Raleigh, NC 27699
919-733-5083 x 505
kathy.stecker@ncmail.net

Gregg Comstock
Supervisor, Water Quality Planning Section
New Hampshire Department of
Environmental Services
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095
603-271-2983
gregg.comstock@des.state.nh.gov

Mike Ell
Environmental Scientist
North Dakota Department of Health
Division of Water Quality
918 East Divide Ave.
Bismarck, ND 58501
701-328-5214
mell@nd.gov

*** Kimberly Cenno**
Bureau of Environmental Analysis and
Restoration
New Jersey Department of
Environmental Protection
P.O. Box 418
Trenton, NJ 08625
609-633-1441
kimberly.cenno@dep.state.nj.us

Trinka Mount
Supervisor, TMDL Coordination
Ohio Environmental Protection Agency
P.O. Box 1049
Columbus, OH 43216
614-644-2140
trinka.mount@epa.state.oh.us

*** Heidi Henderson**
TMDL Coordinator
New Mexico Environment Department
1190 St. Francis Drive
Santa Fe, NM 87502
505-827-2901
heidi.henderson@state.nm.us

Mark Derichsweiler
Engineering Manager, Watershed Planning
and Stormwater Permitting Section
Oklahoma Department of
Environmental Quality
P.O. Box 1667
Oklahoma City, OK 73101
405-702-8188
mark.derichsweiler@deq.state.ok.us

Gene Foster
Manager, Watershed Management Section
Oregon Department of
Environmental Quality
811 SW 6th Avenue
Portland, OR 97204
503-229-5325
foster.eugene.p@deq.state.or.us

Mihir Mehta
Manager, Bureau of Water
South Carolina Department of
Health and Environmental Control
2600 Bull Street
Columbia, SC 29201
803-898-3609
mehtam@dhec.sc.gov

Bill Brown
Chief, TMDL Development
Pennsylvania Department of
Environmental Protection
Rachel Carson State Office Building
400 Market Street
Harrisburg, PA 17101
717-783-2951
willbrown@state.pa.us

Sherry Wang
Environmental Program Manager,
TMDL/Watershed Management Programs
Tennessee Division of
Water Pollution Control
6th Floor, L&C Annex
401 Church Street
Nashville, TN 37243
615-532-0656
sherry.wang@state.tn.us

Elizabeth Scott
Deputy Chief of Surface Water Protection
Rhode Island Department of
Environmental Management
235 Promenade Street
Providence, RI 02908
401-222-4700 x 7300
elizabeth.scott@dem.ri.gov

Faith Hambleton
TMDL Manager
Texas Commission on
Environmental Quality
P.O. Box 13087
Austin, TX 78711
512-239-4600
fhamblet@tceq.state.tx.us

Roger Hall
TMDL Project Manager,
TMDL, NPS, and Program Development
Section
South Carolina Department of
Health and Environmental Control
2600 Bull Street
Columbia, SC 29201
803-898-4142
hallrp@dhec.sc.gov

Carl Adams
TMDL Section Manager
Utah Division of Water Quality
P.O. Box 144870
Salt Lake City, UT 84114
801-538-9215
carladams@utah.gov

Charles Martin
Watershed Program Manager
Watershed Programs Section
Office of Water Quality Programs
Virginia Department of
Environmental Quality
629 East Main Street
P.O. Box 1105
Richmond, VA 23218
804-698-4462
chmartin@deq.state.va.us

*** Helen Bresler**
Watershed Management, Water Quality
Program
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504
360-407-6180
hbre461@ecy.wa.gov

Mike McDaniel
Technical Analyst
West Virginia Department of
Environmental Protection
601 – 57th Street
Charleston, WV 25304
304-926-0499 x 1055
mmcdaniel@wvdep.org

James Summers
Environmental Resource Specialist III
West Virginia Department of
Environmental Protection
601 – 57th Street
Charleston, WV 25304
304-389-3301
jsummers@wvdep.org

*** Nicole Richmond**
Water Quality Specialist, TMDL
Coordinator
Wisconsin Department of
Natural Resources
101 S. Webster Street WT/3
P.O. Box 7921
Madison, WI 53707
608-266-0152
nicole.richmond@wisconsin.gov

*** Jack Smith**
Nonpoint Source Program Coordinator,
Water Quality Division
Wyoming Department of
Environmental Quality
1866 South Sheridan Ave.
Sheridan, WY 82801
307-673-9337
jsmith@state.wy.us

*** State participants marked with an asterisk were members of the Planning Advisory Group.**

EPA Participants

EPA Headquarters

Craig Hooks
Director
Office of Wetlands, Oceans and Watersheds
USEPA Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N. W.
Mail Code: 4503T
Washington, DC 20460
202-566-1146
Hooks.craig@epa.gov

John Goodin
Branch Chief
Watershed Branch
USEPA Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N. W.
Mail Code: 4503T
Washington, DC 20460
202-566-1373
Goodin.john@epa.gov

Francoise Braiser
Deputy Branch Chief
Watershed Branch
USEPA Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N. W.
Mail Code: 4503T
Washington, DC 20460
202.566.1214
Braiser.francoise@epa.gov

Doug Norton
Watershed Branch
USEPA Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N. W.
Mail Code: 4503T
Washington, DC 20460
202-566-1221
Norton.douglas@epa.gov

Eric Monschein
Watershed Branch
USEPA Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N. W.
Mail Code: 4503T
Washington, DC 20460
202-566-1547
Monschein.eric@epa.gov

Menchu Martinez
Watershed Branch
USEPA Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N. W.
Mail Code: 4503T
Washington, DC 20460
202-566-1218
martinez.menchu-c@epamail.epa.gov

EPA Regions

Jennifer Eason
Region 4
61 Forsyth Street, S.W.
Atlanta, GA 30303-8960
404-562-9268
Eason.jennifer@epa.gov

Dean Maraldo
Region 5
77 West Jackson Boulevard
Mail Code: WW-16J
Chicago, IL 60604-3507
312-353-2098
Maraldo.dean@epa.gov

Curry Jones
Region 6
1445 Ross Avenue
Suite 1200
Mail Code: 6WQPOT
Dallas, TX 75202-2733
214-665-6793
Jones.curry@epa.gov

Laurie Mann
Region 10
1200 Sixth Avenue
Mail Code: OWW-134
Seattle, WA 98101
206-553-1583
Mann.laurie@epa.gov

Other Participants

Susannah King
New England Interstate Water Pollution Control Commission
116 John Street
Lowell, MA 01852
978-323-7929 x254
sking@neiwpcc.org

Bruce Myers
Senior Attorney
Environmental Law Institute
2000 L St., NW Suite 620
Washington, DC 20036
202-939-3809
myers@eli.org

Sandra Nichols
Staff Attorney
Environmental Law Institute
2000 L St., NW Suite 620
Washington, DC 20036
202-939-3828
nichols@eli.org

Adam Schempp
Staff Attorney
Environmental Law Institute
2000 L St., NW Suite 620
Washington, DC 20036
202-939-3864
schempp@eli.org

Adenike Adeyeye
Research Associate
Environmental Law Institute
2000 L St., NW Suite 620
Washington, DC 20036
202-939-3247
adeyeye@eli.org

Andrew Erickson
Intern
Environmental Law Institute
2000 L St., NW Suite 620
Washington, DC 2003

Appendix 3: Project Planning Methodology

At the outset of this project, ELI prepared its workplan to guide project implementation activities. In October 2007, ELI Senior Attorney Bruce Myers met with EPA Watershed Branch staff in Washington, DC to present the workplan and to seek agency feedback on an array of planning matters, including workshop venue, goals and substantive topical coverage for the event, and the nature of State participation.

ELI next focused its efforts on identifying appropriate participants to comprise a State-level "planning advisory group" to be tasked with ensuring that State perspectives and priorities would drive the development and execution of the national workshop. This group would become the heart of the project and ensure that the National Workshop had a *State-driven agenda*, rather than an "EPA agenda" or "ELI agenda." ELI Staff Attorney Sandra Nichols led the process of contacting EPA Regional TMDL Coordinators to obtain their candid views and recommendations as to the ideal candidates from States in their respective Regions to potentially serve as Planning Advisory Group members. ELI then communicated by email and telephone with the recommended individuals to establish our core group of State advisors—and, almost to a person, the State-level personnel we contacted were both knowledgeable on the issues and enthusiastic about playing a role in this process.

ELI staff generally worked with the Planning Advisory Group through a series of regularly scheduled, hour-long conference calls. Early on, and at the request of Planning Advisory Group members, we expanded membership of the group to include representatives from several EPA Regions.

Through a participatory, iterative process involving EPA and the Planning Advisory Group, EPA formulated (1) a list of proposed topics and issues for discussion at the National Workshop; (2) an agreed-to "vision" and set of goals for the event; and (3) an initial draft agenda for the National Workshop, which we continued to develop and further refine in collaboration with the Group. We eventually narrowed the issues list into an agenda "companion" document, which we all used to assist us in better focusing our session-specific discussions.

Also, through further consultation with EPA Headquarters, the EPA Regions, and our State Planning Advisory Group members, ELI arrived at a draft list of proposed National Workshop participants from all fifty States and the District of Columbia. We always thought it critical to find "just the right level" of participant: someone sufficiently senior to have responsibility within the State TMDL Program, but who at the same time was not entirely removed from day-to-day operations of the Program.

Over the course of these early- and mid-term National Workshop preparations, ELI staff continued to perform logistical research on the best venue for the June event (in terms of facilities, accessibility, and cost), and ultimately settled on the U.S. Fish & Wildlife Service National Conservation Training Center (NCTC), located in Shepherdstown, West Virginia. Other logistical research tasks performed to lay the

groundwork included investigating appropriate airfare ranges, considering cost-efficient transportation options for moving participants from DC-area airports to the somewhat remote workshop venue, and related administrative activities.

During early 2008, project activities accelerated, as the ELI team worked with the Planning Advisory Group through scheduled conference calls to agree on the agenda and National Workshop materials, on invitation and registration materials, and on workshop logistics. Specific Planning Advisory Group members (and other expected workshop participants, by this time including a representative of the New England Interstate Water Pollution Control Commission) agreed to assume roles as workshop session coordinators and panelists. Each envisioned session came to take on a life of its own, with session coordinators—each a representative of a State TMDL Program—assuming primary responsibility for the session's framing and content, with guidance from the balance of the Planning Advisory Group, as needed.

Through our regular, participatory, iterative process involving EPA and the Planning Advisory Group, ELI continued to substantially refine the National Workshop agenda. In parallel with the maturing agenda, we framed and, with the advice of the Planning Advisory Group, revised a set of detailed, session-by-session outcomes for the event. In close collaboration with EPA and the Advisory Group, we also began to discuss the shape that the course materials—and companion website—would take.

ELI next designed and distributed, on a State-by-State basis, (1) workshop invitation letters (one version for Planning Advisory Group members and one version for other participants); and (2) event registration forms tailored to this event. ELI sent out to representatives of TMDL Programs in all 50 States and the District of Columbia "save the date" emails, to which we received overwhelmingly positive responses. We followed these interactions up with formal invitations and registration forms, many of which we received back, completed, in short order.

ELI staff performed significant logistical coordination tasks for the June workshop, including carrying out extensive email and telephone communications with invitees and event participants nationwide, and arranging flight and shuttle-bus details for each individual participant. This also required regular ELI communications with the staff of our workshop venue, NCTC.

Conference calls with our Planning Advisory Group were somewhat more frequent in the month leading up to the June 2007 National Workshop. ELI staff also encouraged the convening of (and frequently participated in) a set of smaller, topical conference calls arranged on a session-by-session basis by individual "session coordinators." These latter calls focused on the panel presentations and likely plenary discussion for each National Workshop session.

During this same time frame (roughly one month prior to the event), ELI staff finalized all substantive and logistical preparations for the National Workshop. These activities included, among many other smaller tasks, the following: finalizing the detailed

agenda; conducting an in-person site visit with EPA Program Officer on May 19, 2008, to examine the conference facilities at NCTC, and to meet face-to-face with our NCTC liaison; completing research on, drafting, and sharing with our many State TMDL Program partners a “snapshot” sheet on each State’s TMDL program; and completing development of, assembling, and overseeing production of National Workshop participant resource binders (copies have already been provided to EPA.

ELI and its partners successfully convened the first-of-its kind National Workshop to Advance State TMDL Programs on June 23-25, 2008. Subsequently, ELI has compiled and analyzed evaluation forms, completed and posted online State “snapshots” in light of discussions at the National Workshop and further follow-up communication with the States, and developed the final project report and proceedings, to which this Appendix is attached. ELI has also completed a website containing workshop materials and other TMDL-related resources and will launch a listserv to help continue the dialogue begun this summer among National Workshop participants.

Appendix 4: Summary of National Workshop Participant Evaluations

Thirty-seven National Workshop participants returned to ELI staff a Participant Evaluation Form (which was provided in the resource binder materials). Overall, the numerical results we received indicate an "Very Good-to-Excellent" rating on all categories.

In addition to the numerical responses, we received 115 written comments, reproduced farther down in this Appendix.

All evaluations were anonymous.

1. Participant Numerical Evaluations

Scale: 5 = Excellent, 4 = Very Good, 3 = Satisfactory, 2 = Fair, 1 = Poor

The Workshop – Overall

Information Presented: **Avg: 4.6**. Excellent (23), Very Good (13)

Workshop Materials: **Avg: 4.6**. Excellent (25), Very Good (10), Satisfactory (1)

Workshop Organization: **Avg: 4.75**. Excellent (27), Very Good (9)

Group Interaction: **Avg: 4.8**. Excellent (28), Very Good (8)

Session Facilitation: **Avg: 4.6**. Excellent (23), Very Good (11), Satisfactory (2)

Conference Facility (NCTC): **Avg: 4.98**. Excellent (36), Very Good (1)

Goals and Outcomes; Topical Coverage

How effective was the workshop in satisfying the stated goals and intended session outcomes?

Avg: **4.5**. Excellent (17), Very Good (17)

How successfully did the workshop meet your own expectations?

Avg: **4.7**. Excellent (24), Very Good (10)

What I learned will be useful to me:

Avg: **4.4**. Immediately (19), In Short-term (11), In Future (4)

2. Participant Written Evaluations

The Workshop – Overall Comments

"John Goodin's commitment to attending this and Regional EPA-State meetings is to be commended. Helps States get their message to HQ and he can interact with TMDL managers and adjust direction of program – we hope! Thanks for HQ funding – couldn't have come without it."

"Great job."

"Great conference. Great to have so many States together. Useful conversations with EPA."

"Great facility, ELI did a great job coordinating. Should do this Every Year. EPA should budget this to ensure success. Invite EPA regional reps (maybe) but maintain States' control over agenda, discussion. This can help promote EPA Regional consistency! Congratulations to National EPA staff for significant attendance and letting the discussion and topics focus on what States were interested in."

"The workshop exceeded my expectations with regards to the information I gathered and was made available. The amount of information exchange during the sessions was amazing. There was, however, a bit too much of a good thing. Day 1 was too long, particularly with the evening session. Not enough time to explore this beautiful area and to just get away from TMDLs for a bit. Excellent job by ELI on logistics."

"Consistent high quality."

"Excellent – structure, format, timing, etc. The only negative comment is it would have been nice to have come in a day early to get settled, enjoy the very nice facility."

"Organization good but a little too "jam-packed." Need a little more time for discussion, reflection, learning."

"Super job!! Deeply appreciate meeting face-to-face counterparts from other States."

"This should happen every year!! I can't believe I hadn't met many of these folks the past 7 years. All EPA Regions should put this in their PPA with their States so the TMDL key person comes to this. The interaction with peers has been invaluable. I'm glad it's not driven by ASIWPCA, WEF, or consultants since their agenda can't necessarily clean water. Great facility; outstanding food! Excellent workshop!!"

"A meeting like this of all the State TMDL leaders was long overdue! We need this kind of opportunity to dialogue and share ideas/challenges more often so we can learn from each other, network, and help each other out. Great job and thanks for doing this! One

suggestion: the agenda was too tight – we needed more networking time to better pace the days."

"Well planned and executed – a little more face, personal time would be appreciated."

"Very good workshop – I thought it was especially beneficial to get so many State reps together at one time."

"I'm pretty tough on conference evaluations, but this workshop really was excellent! EPA might not see immediate benefits directly attributable to this workshop, but it was very valuable to hear about other States' programs outside our region. Next time, have 1 person from each EPA region."

"I think it was very beneficial to have all of the States in one room. One possibility would be to have break-out discussions for States within a region in addition to the other break out groups. Also, a representative from each EPA region would be good (mostly to listen and hear the ongoing discussions)."

"This was a great opportunity for different States to learn what issues face other States. Some of the sessions were very interesting, some were less but the talks were kept reasonably short and the notebook was good. The facility was great and the informal discussion over meals, breaks, walks, and evening gatherings were really good. Thank you for doing such a good job."

"Outstanding conference. Should be held once per year."

"More control over audience (Bruce was good). Thanks for hosting."

"Great place, wish I could have stayed longer. Conference was perfectly organized down to the minutest logistics."

"Excellent overall, very good facilitation of discussion topics. Friendly and enthusiastic ELI staff."

"Great workshop!! Well done!! Thanks!!"

"First day breakouts were clumsy. Might consider topical breakouts and have States choose where they go."

"I think this was a great idea and helped everyone to become more familiar with the program and its complexity and varying applicability to States."

"Well worth the time and effort. This should be an annual event."

"Amazing job by ELI and specials thanks to EPA folks for being so supportive and open minded. EPA and Department of Agriculture need a clear working relationship with roles

and responsibilities and if over lap, ok, but spell it out. Can't wait for populated web page and final report."

"A great and important first meeting. Need to continue. Thanks for your efforts (Bruce) – great job facilitating."

"This workshop was excellent and long overdue. I applaud EPA for holding this workshop and ELI for organizing it. Hopefully this can be an annual event."

"Formal program well planned and organized, combined with informal interactions between States has been invaluable in gaining perspective on own State's program and learning about new and different approaches to explore."

"Excellent location!"

What additional information, if any, that was not covered would have been useful to you and your colleagues in your State:

"Discussion session on writing stormwater TMDLs; measuring their success!"

"A bit more discussion on in-the-weeds implementation measures."

"More focus on changes to CWA would have been nice. States would love to help craft upgrades to CWA legislation."

"Learn more about effective strategies for developing and carrying out TMDL implementation plans."

"Would have liked more information on cases – how States are dealing with rules and designated uses, especially with respect to nutrients, pathogens, DO. How States are developing nutrient TMDLs - allocations in cost effective way changing designated uses to account for reality! How States list waters by segments? By waterbodies? And what length?"

"Can States collaborate on TMDLs to expedite the process."

"Case studies to develop TMDLs with stakeholder involvement. Changes in standards due to TMDL implementation practical considerations."

"Great information, location, and materials, thanks."

"Question on WQS – frequency, duration, uses. Question on monitoring – assessment. Question on modeling with stakeholders."

"Clean water needs survey as a tool to support TMDL implementation."

“Presenters all did a great job!”

Session #1: Innovations in TMDL Development (Part I): Sharing Examples of New Ideas and Approaches:

“Very interesting albeit perhaps not directly transferable to my State. Certainly opens some doors of opportunity.”

“Connecticut IC TMDL – very interesting.”

“Enjoyed hearing new approaches that other States are using.”

“Good presentations.”

“Didn’t really apply to our situation – we are a Midwest Ag State.”

“More time to discuss in small groups.”

“Great examples and great discussion.”

Session #2: Innovations in TMDL Development (Part II): More Innovations – Small Group Discussions:

“It was a good idea but maybe it got redundant. Maybe 2 small group meetings at a time, 2 or 3 different times but have more questions. This session along with the next got a little bit redundant.”

“Good to break out into small groups.”

“I learned quite a bit about other States’ challenges and ideas during these small group sessions – Great format.”

“Set-up in break out groups was challenging (2 in each room) – difficult to hear sometimes.” [Note: this problem was corrected by ELI staff for second-day breakout groups.]

“Liked small discussion format, but too rushed.”

“Great discussion.”

Session #3: Innovations in TMDL Development (Part III):

"Good. Didn't know most of this going on."
"While there was a lot of discussion, I don't think we focused on a topic enough get answers/resolution. In a group this size, you ask a question and one person answers, then another comments from a different angle, which reminds someone else of something different in their State…Anyway conversations move quicker than solutions settled in."

"Good summarization of information."

"Good dialogue session was very informative."

"Great discussion."

Session #4: Development of Non-TMDL Options for Addressing Impaired Waters:

"Needed to include a topic on watershed board plans in lieu of TMDLs."

"This topic definitely deserves more discussion, very valuable information, promotion of creativity and obtaining results."

"Interesting."

"Regional inconsistency in EPA demonstrates that this option is frowned upon in some sites (*i.e.* superfund, etc.)."

"Lots more to talk about here. Liked points made about when to do a TMDL and when to do something else. (TMDL is not always the best tool for WQ improvement)."

"Good ideas."

"Good presentations."

"4b is under-utilized because EPA has made the bar so high."

"Great discussion."

Session #5: Day One Wrap-Up

"Good."

"The free exchange of information was very enlightening during this session."

Optional Evening Session: Building Informal State Networks to Continue Dialogue:

"Great networking opportunity!"

"Good."

"Not particularly valuable. At NEAEB we have done a water quality trivia game, like they do in bars, fun group activity that encouraged social interaction and discussion – TMDL Trivia?"

"Good idea!"

"Good to communicate with other States."

"Appreciate the opportunity to forge/develop relationships with neighbors."

"Good!"

Session #6: Getting to TMDL Implementation (Part I): What's Working?

"Ideas were exciting, but I can only look upon them with envy. We do not have a legislative climate in our State that would support giving us a stick that we would need to get the kind of action we need with our NPS problems."

"Good presentations."

"Interesting to hear what works in other States."

"These were interesting and informative."

"Diverse presentations, good overview of different approaches."

Session #7: Getting to TMDL Implementation (Part II):

"Interesting discussion."

"Not enough time for a full and robust discussion."

Session #8: Building the Capacity of the State TMDL Programs:

"These were good."

"Excellent hearing from other States, including those with limited resources and those who have completed a consent decree."

"Tom's presentation was especially good. Liked Melissa's stages of TMDL grief. Standards (including UAA) and listings came up, but State TMDL people don't have control over those, BUT important for EPA to hear concerns."

"First 2 presentations were not very relevant to me. Last 2 had some value."

"EPA needs to get money back from Farm Bill and give to State WQ agencies."

"Post "stressor ID" guidance doc to workshop site."

Session #9: Evaluating Success: Measuring, Monitoring, and Tracking:

"Good to hear from EPA how expectations are changing, especially in a State that doesn't require implementation. Also, reinforces what is needed to implement."

"Would like to know more about social indicators. Recovery screening: great potential tool to predict implementation effectiveness."

"MN/R5 effort is exciting, but without their level of funding it would be difficult to replicate in our State. Doug's discussion of "blind spots" was right on target – it's encouraging that EPA is looking at effective ways to address these."

"Good session, expand this next time, maybe focus on this next time."

Session #10: Open Forum on the Future of the TMDL Program: Where We Are Going and Where We Should Be Going:

"This was fairly interesting and valuable."

"Should have gone to small groups for this one – everyone wanted to talk at same time. Definitely interest in this. Interesting discussion of law and regs. People are in this business because they want to make a difference, improve WQ. Maybe we could use some training in legal context…"

"Lots of thoughtful ideas and discussion!"

Session #11: Workshop Wrap-Up:

"Getting specific key points to EPA great idea. Also, having limited but specific EPA staff attend for more open discussions."

Other Comments or Suggestions:

"This was the first ever meeting of this type. We need to do it again next year. Important to pay for 1 person/State, if all States can't afford it. The networking was extremely beneficial. Next time start Monday afternoon and build in more time Tuesday afternoon to explore the grounds. (Have it here again!) Thank you!!!"

"Next meeting see if can devote significant time for some regional TMDL groupings/break outs to focus on some of the regional issues. Should not necessarily break out by EPA regions, but instead try more similar TMDL programs and issue types. For example, Idaho, Montana, New Mexico, Colorado may have more in common than some of these States have in common with other States in the same region that they are in."

"Turn off cell phones during sessions. Photographers very distracting! Could you send an email with all the instructions for what should be in State summaries? Also a deadline for final submit?"

"Instead of notebooks do CD-Rom or thumb drives."

"Again, great workshop and sorely needed. Just wish we had more time/breaks to allow for more networking. Some of the best conversations came out in small group discussion following up on some of the topics explored in the large group sessions, during lunches and other breaks. Let's do this again."

"Annual or biannual national TMDL workshop is needed – not a WEF or ASCE type but one like this that involves States and allows sharing of successes and failures. Great facility and would be happy to come back. Thanks to all who worked so hard to make this happen!"

"Good networking opportunities."

"Great meeting and all of the efforts were well done and appreciated. Good avenue for sharing knowledge and networking."

"It was very nice. Another day would have been ok but would need more subjects or activities. The ELI folks were very nice and generous and helpful. Thank you."

"ELI did a great job of making the workshop belong to the States. This helped to create a safe place for discussion, which made the workshop particularly valuable."

"Very useful and illuminating. Would like to see happen again in a couple of years."

"Need to make this an annual gathering. Great opportunities for networking and follow-ups."

“If this workshop were to develop into something more, having sessions on how States set up monitoring and assessment programs in relation to IR and TMDLs would be interesting. Also, methods TMDL staff have used successfully to communicate TMDLs and implementation importance to upper level management within own agency.”

“What’s the role of Army WOP? Some of their work seems duplicative—*e.g.* restoration plans, but without clear goals like States do with 319 watershed plans. Hearing what other States doing to develop and implement TMDLs helps to discern that what you’re working on as routine may actually be helpful or innovative to another State.”

“Please make the presentations from Hawaii, New Mexico, Maine, and Kansas available to participants. They are not included in the materials book given during the conference.”

“Thank you!”

“Have note-takers for each session submit written notes to facilitator (many verbal reports not well captured by facilitation, especially intern) or do notes on flip chart at the breakout group. Awesome facility—very environmentally rejuvenating.”

Appendix 5: Pre-Workshop Comments from the States

This Appendix contains a compilation of the comments of State participants in the National Workshop, received by ELI, in writing, as part of the registration process. These comments fall into three broad categories: (1) questions that the participants would like to have EPA answer; (2) points that the participants would like to convey to EPA; and (3) specific topics about which participants would like to learn more.

ELI staff relied on these comments in the design and development of the National Workshop. Each comment is reproduced here, essentially unfiltered, without reference to the State with which it is associated (as not all participants may have intended that they be publicly associated with these comments).

1. Questions for EPA

We need more science with respect to nutrient policy. For example, EPA wants nitrogen included in all TMDLs, regardless of whether or not it is the limiting nutrient. We would like to have a scientific basis for that decision.

EPA is not allowing States enough flexibility with respect to legacy pollutants.

We would like to see some clear guidance with respect to BAT nutrient requirements.

1) Why aren't more resources directed toward [State]? 2) When is EPA going to back off on the Category 4b pollution control measures, which are more stringent and difficult to achieve than a TMDL, and allow States more leeway in developing TMDL pollution control alternatives that may be more appropriate for the impairment being addressed than a TMDL?

Why is EPA HQ stuck on bean counts, TMDLs developed instead of environmental outcomes?

What actions does EPA take to ensure uniformity of TMDLs (*i.e.*, comprehensiveness, statistical adequacy or data, etc.) on a national level? Will there be new regulations proposed in the near future?

How can Hg TMDLs be implemented?

Why does Headquarters work in such a vacuum compared to the EPA Regions? Why is it that one Region seems to let States get a way with murder and from others you can't get an approval for something that's far more stringent than what other EPA regions are approving? Why doesn't EPA Headquarters appeal bad legal decisions like Pinto Creek or even the "is a TMDL a daily load or can it be expressed other ways?" type cases? I realize this has everything to do with politics and who is President and who the politically appointed director of EPA is at any given time. But it is maddening.

ATTAINS database not entirely accurate.

What measures do you expect from the States as far as tracking TMDL implementation, especially in watersheds that are dominated by NPS pollution?

When will US EPA bring other water programs into the measures for success? There is a huge disconnect b/w monitoring programs, TMDLs, 319, and permitting on the federal level.

How can we get EPA and its attorneys to be less sensitive to the fear of lawsuits when reviewing/approving TMDLs?

How can we get EPA to approve the 303(d) list and TMDLs within 30 days of their receipt?

Also, without adequate resources, it is unlikely that all TMDLs will be completed in the timeframe provided for by EPA (13 years) – what happens then? Will EPA respect States' desires to focus on developing TMDLs for priority water bodies regardless of when they are listed, as opposed to meeting some arbitrary 13-year deadline? Nonpoint sources need to be held more accountable for their contributions to impairments. Is there any effort to either work more closely with USDA, and in particular Farm Bill Programs, to achieve water quality improvement goals, or to push the regulation of nonpoint sources?

How do we account for the expected increase in nonpoint contributions due to the increased demand for corn production to support ethanol production goals? How do we take that into account in TMDL development? What is EPA's stance on ethanol and its impacts on water quality?

Should States be more concerned about addressing local water quality concerns or should they be trying to address Gulf Hypoxia?

Why does EPA continue to push for water quality trading between point and nonpoint sources? Practically, it's doubtful this will ever be workable unless nonpoint sources become regulated.

How does EPA define "success"?

EPA Region III has a strong cadre of staff that is responsive to "TMDL Development." It does not, however, have a similarly strong cadre of staff devoted to "TMDL implementation." Is this something EPA has considered addressing?

Why aren't there more Federal funds provided not only to develop TMDLs but also for monitoring and more importantly implementation? States and local government simply cannot afford many remedies dictated but this program.

There appears to be a conflict between EPA's position that BMPs are appropriate to address stormwater impacts but a TMDL that addresses stormwater must say what it takes to meet water quality standards. In the Northeast where in many cases we have large urban areas that form the headwaters of larger river systems BMPs are not likely to meet standards in many cases for specific pollutants. Has EPA considered developing national wet weather guidelines or standards that take into account that not all waters will meet standards 100% of the time and that some excursions may be acceptable?

What streamlining measures is EPA currently working on, either regulatory or otherwise, to help States produce TMDLs more efficiently or to defer TMDL development (e.g. 5M concept for mercury)?

Are WLAs only to be required for permitted point sources? Is it a legal requirement to do for abandoned mines that are not permitted?

More and more your guidance seems to be diverging from some of your late 90s documents such as the one written for sediment TMDLs. This early guidance acknowledges a wide range of methods and levels of detail. We understand the need to respond to court cases like the "daily load" case, but you seem to be evolving toward very resource–intensive TMDLs as your examples and basic guidance, whereas simple approaches are more desirable in simple watersheds with limited source variability and often no permitted point sources.

Please give guidance to States on listing criteria for legacy pollutants and pollutants that can be proven as impairing a water body due to natural geologic conditions so that these impairment may be removed off of 303(d)/sublist 5.

How is EPA reconciling ORD research with daily load guidance?

How will EPA prioritize funding for States with completed Consent Decrees?

Does the determination of background or natural components belong in the TMDL arena, WQS arena, or both? How does EPA handle this?

How do you reconcile your emphasis on pace of TMDL development with your goal to report actual water quality improvements? I don't think most States have the resources to do both well, and I would guess that most States would rather improve water quality than make calculations. Aren't the public and elected officials really counting on EPA and States to protect and restore water quality? Isn't that what's really important? (Please answer without saying, "Yes, but….")

Why is TMDL and supplemental 106 funding so restrictive? In most cases daily loads make no sense.

I think the long-term “big picture” answer is to work toward a truly integrated adaptive management watershed-focused structure; how to do this and how U.S. EPA could support this through their program milestones (not just TMDL programs, including permitting, incentive, all programs).

Ability to develop TMDLs that are reasonable, defensible, and implementable; EPA’s expectations of litigation-risk-free TMDLs are not practical.

More ways/methods to measure improvements under Stormwater program, as the loadings relate to TMDLs. Too much variation in SW numbers to show anything. Of specific and timely interest, see the article "Can Stormwater BMPs Remove Bacteria?" <http://www.stormh2o.com/sw_0805_can.html>.

And something to consider when discussing effluent limits for stormwater: http://cacoastkeeper.org/assets/pdf/StormWaterPanelReport_06.pdf.

How to interpret water quality standards with multiple values (*e.g.*, dissolved oxygen minimum, 7 day avg, 30 day avg) in determining TMDL targets?

How will EPA evaluate phased TMDLs?

Where is category 4b going?

2. Points to Be Conveyed to EPA

TMDL Program needs more resources. Relatively little data is tracked on the vast number of waters in Alaska, and relatively small amounts of funding are allocated to Alaska for such purposes. AK has a relatively shorter work season and large distances to cover—a challenge to Alaska with respect to data collection, assessments for determining impairment status, TMDL development with valid data and tracking TMDL implementation and recovery of polluted waters. Alaska includes over 365,000 miles of rivers and streams and has over 3000 rivers; has 3 MILLION lakes larger than 20 acres; has 44,226 miles of coastal shoreline. All of this means Alaska contains half of the nation’s surface waters. We need more resources to manage this tremendous resource and world-class fisheries. [Note: entire point here was State-specific, so identity of commenting State has been left in.]

Please increase the reporting cycle for the IR from 2 to 4 years; an interim report could be issued in the middle of the reporting period; “middle” is defined as the end of year 2 of a 4-year reporting period.

I believe that EPA Region 9 appreciates what [State] has done in the area of TMDLs. They have been supportive and partnered with us in moving the State’s TMDL Program forward. With our 2006 303(d) list, [State] at current funding levels has another decade of development work on the books. Addressing [State’s] impaired waters using TMDLs

and other mechanisms is a long-term effort that will require a sustain effort spanning decades.

Appreciate efforts to collaborate with regional EPA staff.

When you have nutrient TMDLs for almost all of your watersheds, it would be counterproductive to adopt nutrient criteria.

Although 40 CFR requires TMDLs be developed, there is no authority to implement them. Guidance documents regarding the success of watershed improvement plans and BMPs would be helpful in the implementation phase.

Would like greater direct assistance from EPA with our military partners.

Recognition of a continuous cycle, taken 2 years at a time; unlikely success of achieving WQSs at very high flows.

Working with EPA's contractors to prepare TMDLs has really helped us increase our annual output; we hope to continue this practice in the future.

Although EPA Region 2 has provided [State] some money in the past couple of years to develop TMDLs (46 Coastal Pathogen TMDLs and 75 Pathogen Lake TMDLs) they do not provide money for monitoring. [State] has recently begun to spend a lot of time and its own money developing sampling plans for nutrient monitoring to confirm if narrative portion of its phosphorus criteria is being exceeded even though it is listed based on its numeric criteria AND to collect extensive data needed to calculate LA and WLAs for impaired waterbodies with major dischargers.

As 104(b)(3) grant monies have disappeared, our State program is in need of funding.

We have low TMDL development numbers, but we have lots of resources devoted to improving and protecting water quality. With the growth our State is experiencing and future growth projections, we can't rely on the TMDL program to attain water quality standards. Could you please look beyond the pace and recognize that our accomplishments are at least as effective as developing TMDLs?

We are a small State program with limited resources.

We are doing the same projects over and over again; what can we do to address broad-scale problems on a larger scale (by sector), rather than watershed by watershed. Need leadership from national level because the economic pressure within the State is not aligned with the goals of the Clean Water Act.

Linear pace count is unrealistic. Implementation and TMDL development of ag nps is a mess.

Dire need to update our water quality standards and assessment methods to better identify waters that are actually impaired and can be restored through TMDL implementation.

We want to be known as a “get to clean water program,” not just a TMDL program.

3. (Specific) Topics We Want to Learn More About

Mercury TMDL development.

Assessment tools for sediment impairments.

Impervious surface TMDLs.

Mostly interested in IMPLEMENTATION/OTHER OPTIONS/MEASURING PROGRAM SUCCESS. TMDL implementation plans are not required in [State] and TMDLs do not appear in [State] Statute. If a TMDL water does not have NPDES permitted activities on it, how do we effectively implement and enforce the TMDL load and wasteload allocations for nonpoint sources of pollution?

Development/Implementation/Other Options.

Implementation approaches / measuring program success /mechanisms for funding the program or implementation.

TMDLs for Nutrients based on Land Use Export Coefficients and Best Attainable Conditions.

Developing approaches for implementing Impervious Cover based TMDLs in conjunction with stormwater management programs.

Working to improve coordination within State programs to allow other programs (e.g. remediation programs) to address impaired waters issues at certain sites.

Working with a grant from EPA region to improve tracking database including better interface with software for developing impaired waters list.

Developing scientifically defensible TMDL targets without the use of costly computer models.

As a number of our TMDLs (*e.g.*, for mercury, nitrogen, and phosphorus) have a significant allocation to atmospheric sources, we would like to learn how other States or EPA have been able to get reduction of atmospheric pollutants.

Have any States had success in getting EPA to approve Reasonable Assurance proposals that DON'T involve point sources? Are their certain classes of pollutants that are more approvable? If so, why?

Monitoring and assessing State waters – structuring decision units, sampling plans, and data analyses for TMDL Program success.

Leveraging permittees and nonpoint polluters to engage in all-party TMDL development, and how to facilitate that process to successful conclusions.

Hydraulic TMDLs that address the drainage flow regimes necessary for achieving water quality standards in receiving waters.

Writing NPDES permit conditions (BMPs, WQBELs, monitoring requirements) for phased TMDLs; supporting TMDL development with NPDES monitoring requirements.

Category 4 approaches for addressing degraded habitat and dewatered streams.

Statewide Mercury TMDL.

How to get stuff on the ground faster; how to get other agency buy-in (In [State] it is Designated Management Agencies who write and implement the implementation plans, NOT DEQ.

Why are UAA's so cumbersome? Why is 4b more work than a TMDL, and since it is, why even bother to document?

What is success? Is it a bean count? Is it going off the 303(d) list or showing full support? Is it a trend improvement? Does it matter?

TMDL implementation, particularly the tracking of NPS practices.

TMDL implementation strategies, ways to measure TMDL program success and methods for addressing PCBs and mercury.

I would like to learn more about how other States are effectively implementing TMDLs through the development and implementation of watershed plans. I would also like to learn about any innovative tools and/or measures States are using to track their TMDL program's success.

Implementation: efforts that have successfully installed enough BMPs over a watershed that WQ has improved.

Measuring program success: demonstrating real gains in WQ on streams and lakes—interim milestones.

[State] is interested in learning about any new or innovative approaches that could be utilized in any of the areas above!! We are particularly interested in learning more about innovative approaches to monitoring and developing TMDLs within karst and wetland/swamp areas particularly measuring flow in wetland/swamp areas and modeling approaches in karst areas.

Non-tidal nutrients criteria and TMDL development.

Full accounting and offsetting of pollutant loads from new development.

Addressing the role of construction NPDES permits in the context of prohibitions on new or increased discharges to an impaired waterbody for which a TMDL has not yet been developed.

How do other States ensure that NPS reduction goals are feasible before issuing permits for increased point source discharges?

How do other States use the State Water Quality Management Plans?

How have other States been able to get multiple State agencies to focus their resources on TMDL implementation?

We are interested in any TMDL methodology (or alternative) that can help us speed the pace of TMDL development so we can spend our limited resources on implementation rather than number crunching. Implementation will be slow mostly because of lack of funding to address the causes of impairment.

Watershed approaches to development; ag and stormwater approaches to implementation; measurement frameworks for measuring TMDL success; single watershed approaches for integrating TMDL and protection programs.

Processes for source assessment, given our current court order situation and given the fact that the person filling this out is responsible for TMDL development.

How to conduct TMDLs in rivers/streams impaired for dissolved oxygen from nonpoint sources without extensive modeling?

How to conduct TMDLs to address PCB or dioxins causing fish consumption advisories in tidal waters?

What have States found to be most important for successful implementation?

How are other States organized to address TMDL implementation?

How many staff are other States devoting to implementation?

How are States measuring success (monitoring for compliance with water quality standards, estimates of pollutant load reductions, other)?

How are States keeping track of success (EPA Assessment Database, other?) .

What resources are States devoting to track success (staff, funding, time)?

Do other States assign the responsibility to track TMDL success to the TMDL program? If not, where is it assigned?

4b approaches.

Statewide and regional approaches to mercury TMDL development that don't include requirements for actually obtaining air emission reductions, which are not part of the CWA.

New approaches to nonpoint source pollutant tracking (identifying the location of the actual nonpoint sources that need to be reduced), to more efficiently implement load allocations.

How to convince local governments to handle impairments through local ordinances, etc., without waiting for a TMDL?

How to reconcile EPA's emphasis on pace of TMDL development with the demand that we report actual water quality improvements?

Process for collaborating more with other agencies that also do water quality restoration and protection work (not just better communication, but actually working with them to achieve common goals, all benefiting from the synergy).

Development of sediment TMDLs; linking pollutants to biological impairments; addressing natural sources measuring watershed implementation success.

Implementation; other options; measuring program success.

Simpler approaches for TMDL development; use of watershed plans in lieu of TMDLs for NPS impaired watersheds.

TMDL development, esp. nutrient TMDLs in estuarine waters.

Getting stakeholder buy-in during development. Selling uncertainty in science to public.

How do other States get people to implement NP TMDLs?

What alternatives to TMDLs are other States using?

Biological impairment related to ionic stress (high sulfate, conductivity, TDS).

Do other States have their TMDL process codified? Any other parts of a TMDL in State administrative codes or rules?

How are States and the feds integrating all their programs under the TMDL ‘hub?”

Do other States have guidance for implementation? (For example translating WLA into effluent limits in NPDES permits)?

Appendix 6: Compilation of State-Identified Barriers to TMDL Development and Implementation

Participants in the National Workshop were asked, in their pre-event registration forms, to identify barriers to TMDL development and implementation faced by their respective States. State-specific responses appear in each State's "snapshot" page, all of which are compiled on ELI's website (see Appendix 9 for details) and in Appendix 10.

This Appendix provides an overview of the States' comments with respect to barriers.

1. Barriers to Development of TMDLs

Resource Limitations

While several respondents simply listed that insufficient resources or resources and funding pose a barrier to TMDL development, others elaborated. One person described the need to find the right balance between the quantity of TMDLs developed, their quality, and stakeholder involvement. For many State programs, lack of resources means insufficient numbers of staff. Others elaborated that the lack of resources translates to lack of equipment, insufficient monitoring (or the inability to meet the standards some argue are necessary), data, and modeling. In a few cases, specifically, the lack of or insufficiency of State funding was blamed, as well as the lack of policies for TMDL program support.

Some respondents reported specific staffing limitations, such as insufficient technical expertise on specific topics, including certain kinds of TMDLs, modeling (including stormwater in the urban context), and the TMDL Program itself and how it relates to other programs; the lack of staff to develop policy and guidance and to write reports; and staff turnover.

One respondent analyzed the issue in a different way, stating that in light of the lack of resources, there is a need for an economy of scale that would occur if there were consistency in the analytical approaches, monitoring methods, and regulatory requirements for development of each TMDL. Another stated that too many TMDLs are required, given the capacity of the staff.

Technical Impediments

While many of the challenges mentioned were related to the lack of sufficient resources, some respondents also described technical or informational challenges. Some simply listed insufficient data or certain types of monitoring data such as that needed to determine natural conditions, set loading capacity, and make realistic requirements. One person elaborated that the lack of data is due to inefficiencies, and to lack of coordination in data-collection and information-sharing (cross-program, inter-departmental, interagency, and global).

Others specified certain types of data they lack, such as high-flow water quality data to calibrate models; intra-watershed monitoring data; evidence of linkage between nutrients and impairments; physiochemical monitoring data; and source assessment methods and other tools for specific landscapes. Also, it was noted that water quality criteria for some pollutants (Al, Fe, Cd, and fecal coliform) may be overly conservative.

Finally, others described challenges that result from the insufficient technical information, such as inadequate standards to address nonpoint source problems; lack of numeric water quality standards for sedimentation, emerging pollutants such as pharmaceuticals, personal care products, and pesticides, and ionic stress to biological communities; lack of defensible beneficial use designations, water quality criteria/standards, and assessment methods; and the need for an effective—both technically and financially—analytical tool to determine nutrient thresholds in estuarine waters. One respondent mentioned that there is no sufficient foundation for water quality standards and monitoring and assessment decisions, including the lack of explicit biological and hydraulic endpoints. Another described that because her State is very different from the rest of the country, she has to use either very simplistic models or create new methodology, often relying on significant assumptions.

Administrative Challenges

Many participants described administrative requirements as barriers to development of TMDLs. In some cases, they specified that the barriers are imposed by EPA or the State, but in others they did not specify.

Some of the general administrative challenges respondents described include bureaucratic interference during the procurement process; a lack of political will or TMDL primacy; changing standards and the expectation for zero-risk TMDLs; and the lack of integration and internal cooperation among programs and consequent infighting and turf battles. One respondent mentioned a perceived problem that the government is trying to regulate nonpoint sources and fix water quality problems that the public doesn't want fixed.

Federal Administrative Barriers

While most of the comments in this category relate to national EPA requirements, there were a few comments about the challenge posed by the inconsistencies among EPA Regions. Respondents mentioned that shifting standards from EPA slow down the approval process, and that timelines pose a challenge. One person also argued that requiring TMDLs for all 303(d)-listed waters is an obstacle to improvement of water quality, especially when exceedances are due to natural conditions or legacy pollutants, and that delisting is not a viable alternative because of the staff time required.

There were several comments about the structure and basic requirements of the TMDL Program. One person took issue with the nature of the water quality program overall, explaining that there is a need for a watershed approach to clean water that would integrate monitoring, development, implementation, and protection programs. Two participants expressed concern that TMDLs are often not the best path towards

attainment of water quality standards. Another said that there are nonpoint sources that should not or cannot be expressed in terms of a daily load.

State Administrative Barriers

Only three respondents mentioned State-specific challenges, including the California Environmental Quality Act, a lack of expertise at the State level, and a lengthy procurement process to secure outside TMDL expertise.

Legal/Regulatory

Respondents listed a set of challenges that relate to problems with regulations and application of the law. Respondents reported that regulations often pose obstacles to the development of TMDLs. One example was that of water quality standards and water body classification. Another was the lack of secondary-contact recreation standards for waters that are perennial.

Participants described the challenges posed by lawsuits, particularly third-party law suits such as the one resulting in the “daily loads” rule. Consent decrees were listed several times as causing the burden of insufficient time because of the high numbers of TMDLs required and lack of flexibility, causing, for example, the need to develop TMDLs before necessary criteria could be developed. Finally, one participant described that experience shows that anything NPDES-related will end in litigation.

External Obstacles

There are key players in the system that are not part of the TMDL Program at either the federal or State level. Participants identified these other stakeholders as posing obstacles to TMDL development generally, due to their lack of support for the TMDL process. They specified certain entities that create obstacles including unregulated nonpoint source entities, point-source entities making an effort to get out from under TMDLs and their allocations, agricultural interests, and stormwater permittees

Biological

A few respondents mentioned natural phenomena that pose challenges to the development of TMDLs. These include: the lack of flowing water; the timing of precipitation events; the difficulty of characterizing nonpoint sources; and the lack of clear-cut nutrient end points.

2. Barriers to Implementation of TMDLs

Resources Limitations

Again, respondents mentioned lack of resources generally, and in some cases specified which resources are lacking—or the consequences of the lack of resources. Many identified insufficient funds—naming both federal and State sources—and insufficient staff as a key barrier. One respondent named insufficient funding for abandoned mine land restoration and sewage treatment.

A common result of the lack of resources, participants reported, is a consequent lack of the ability to accomplish various tasks. Many respondents noted that the lack of resources prevents them from accomplishing goals related to nonpoint sources, including implementing BMPs, controls, and abatement. They also mentioned insufficient funds for designating agencies to meet TMDL load allocations. Several listed the inability to carry out watershed planning; many also mentioned that insufficient funding—both through the State programs and from local sources—affects implementation planning, guidance, and activities, both by State programs and local partners.

One person specified that because the limited funding is not distributed in a targeted way within a given watershed, efforts are ineffective. Another person mentioned that insufficient personnel and budgets mean that there is a lack of robust TMDLs with large datasets and modeling to provide effective sub-watershed targets for implementing solutions. Others mentioned the inability to upgrade point sources, identify sources of impairment in order to address them, to develop alternatives to surface water discharge, and to carry out coordination, follow-up monitoring and assessment, and a need for technical assistance.

One person indicated that the lack of funds means lack of infrastructure necessary to remediate pollution sources: MS4s, CSO's, WWTP's. Others said that insufficient funds prevents their department from getting more support through cost-share arrangements, such as through programs to assist landowners to enforce nonpoint performance standards.

Technical Impediments

While a lack of data can be attributable to a lack of resources or other challenges, the barriers respondents listed related to data were very specific and may merit particular attention. One person explained that they are challenged by not having sufficient data to do adequate site planning, so that BMPs that are selected to mitigate sources of pollution are sited and designed correctly. Another described the challenge of figuring out which nonpoint sources are contributing, and which reductions would lead to attainment of standards.

In contrast to data challenges related to insufficient resources, others listed technical data challenges. One person described difficulty in determining natural conditions and natural contributions that make it hard to determine and distinguish from human actions in assessing water quality. Another described the inability to link water quality impacts to sources or causes due to a lack of data, information, and understanding of pollutant fate and transport, especially nutrient dynamics, within individual water bodies. Another mentioned the need to develop technology for implementing low-level targets. Another mentioned technical inability of watershed groups to measure load reductions as an obstacle.

Others simply listed data that they do not have which prevents them from accomplishing a goal. Several mentioned not having scientific data on the pollutant

removal performance of BMPs for nonpoint sources, particularly for agricultural BMPs. Similarly, others found a challenge in not knowing the outcomes of BMPs and how many BMPs are necessary over a watershed to effectively impact WQ. Another mentioned State inability to provide guidance and technical assistance to meet EPA requirements for effectiveness monitoring. Another elaborated that the scale of water quality problems is insurmountable with current tools, stating that the overwhelming scale and scope of hydraulic modification and habitat degradation cannot be tackled due to a cross-sectoral lack of engineering, regulatory, and financial sophistication.

Legal / Regulatory

Several respondents listed problems with regulatory authority including lack of clarity in targets and standards, and insufficient and inconsistent authority, particularly as regards nonpoint sources, load allocations, and BMPs, including monitoring effectiveness of measures. One person simply highlighted the fact that implementation is not required under the TMDL Program and another mentioned the administrative burdens of the Section 319 program. Others noted that litigation poses burdens, particularly with respect to cases brought by regulated point sources. Another mentioned the need for Good Samaritan legislation.

Others described environmental issues that are not sufficiently addressed by the program. In one respondent State, for example, TMDL implementation is mostly voluntary, and most TMDLs do not have competing waste load allocations. In another, abandoned mines with no responsible party for cleanup pose challenges.

Political Will

In addition to institutional and resources barriers, some barriers respondents listed are attributable to the support of the various stakeholders in the process. Respondents listed the impediments caused by stakeholders' (particularly local authorities and landowners responsible for implementation) lack of knowledge/education, acceptance, and support of the program. This translates into a reluctance to participate in identification of load sources and to accept models or anything less than complete, definitive monitoring data to determine sources and load reductions. Others added that public perception of problems, costs, and benefits results in a lack of implementation champions and examples of large-scale implementation success.

This lack of political will translates to concrete gaps in infrastructure, such as stormwater retrofits. It also translates to lack of will for enforcement, particularly in the case of nonpoint sources. And, insufficient value is placed on clean water resources, both in funding decisions and in creating tomorrow's problems (future TMDLs) by not making wise decisions today.

Program Structure

Multiple comments mentioned the structure of the TMDL program itself as posing problems. Respondents listed failings such as lack of coordination, lack of centralized chain of command, conflicting State priorities, and lack of an overall system for

watershed management within agency programs and among agency partners. Another person listed the lack of sustainable entities to carry through with implementation efforts.

One respondent listed the disjunction between the priorities and funding of EPA Headquarters and Regional offices as resulting in funds being wasted.

Appendix 7: TMDLs Highlighted by States

The TMDLs that follow were highlighted by National Workshop participants in either the pre-event registration forms or later communications with ELI as representing a particular achievement or as otherwise meriting attention.

Alabama

Cahaba River nutrient TMDL
One of first in the nation for a free-flowing river system.
http://www.adem.state.al.us/WaterDivision/WQuality/TMDL/FinalCahabaRiverNutrientTMDL.pdf

Coosa River nutrient TMDLs
A multi-State, multiple reservoir system requiring nutrient reductions employing EFDC and WASP (still in progress).

Alaska

Ward Cove
A TMDL that dealt with impairment from wood residue from log transfer facility.

Arizona

--implementing improvements prior to completing the TMDL where sources are easily identified, in coordination with 319(h) grants unit

--watershed scale and regional TMDLs (in-state, several watersheds)

Links to AZ TMDLs:
www.azdeq.gov/environ/water/assessment/status.html

California

LA Region/Santa Monica Bay Bacteria
--uses reference beach/ exceedance day approach; LA River Trash: uses target of zero trash
http://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/tmdl_list.shtml

Central Valley Region/Diazinon and Chlorpyrifos TMDLs
-- accounts for synergistic effects of multiple pesticides that have the same mode of action
http://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/index.shtml

North Coast Region/Shasta River TMDL
--includes a flow component
http://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/shasta_river/

Colorado

Kerber Creek TMDL
http://www.cdphe.state.co.us/wq/assessment/TMDL/tmdls.pdf/Kerber_Creek_TMDL_draft_With_EPA_comments_Ver_2.pdf

Silver Creek TMDL
http://www.cdphe.state.co.us/wq/assessment/TMDL/tmdls.pdf/Silver_Creek_TMDL_final.pdf

Connecticut

Eagleville Brook
-- impervious cover as surrogate for stormwater
http://www.ct.gov./dep/lib/dep/water/tmdl/tmdl_final/eaglevillefinal.pdf

Long Island Sound
-- nitrogen trading program implementation
www.ct.gov/dep/lib/dep/water/lis_water_quality/nitrogen_control_program/tmdl.pdf

Naugatuck River Whole Effluent Toxicity TMDL
www.ct.gov/dep/lib/dep/water/tmdl/tmdl_final/naugtmdl.pdf

Delaware

Proud of all TMDLs for technical accuracy and the fact that they have been adopted as regulations; some stand out due to their onerousness (elimination of all PSs), others due to their multi-state applicability

Link to DE TMDL's:
http://www.dnrec.state.de.us/water2000/Sections/Watershed/TMDL/tmdlinfo.htm#co

District of Columbia

Tidal Potomac and Anacostia PCB TMDL
http://ddoe.dc.gov/ddoe/cwp/view,a,1209,q,497444.asp

Florida

Lower St. Johns River TMDL
-- dissolved oxygen and nutrients
http://www.dep.state.fl.us/northeast/stjohns/TMDL/tmdl.htm

Nutrient TMDLs for the Wekiva River (WBIDs 2956, 2956A, and 2956C) and Rock Springs Run (WBID 2967)
-- First nutrient TMDLs done for springs systems
http://www.dep.state.fl.us/water/tmdl/docs/tmdls/final/gp2/Wekiva_MainStem04182008.pdf

Georgia
Little River
-- chlorophyll

Coosa River
-- dissolved oxygen

Links to GA TMDLs by major river basin:
http://www.gaepd.org/Documents/TMDL_page.html#Coosa

Hawaii
Kawa Stream, Oahu, and Kapaa Stream, Oahu
-- small watersheds dominated by waste load allocations to MS4s

Hanalei Watershed, Kauai
-- is a larger area dominated by NPS load allocations to subtropical forest, endangered waterbird habitat, and traditional irrigated agriculture

Links to HI TMDLs: hawaii.gov/health/environmental/env-planning/wqm/wqm.html

Idaho
Lower Clark Fork River
http://www.deq.idaho.gov/water/data_reports/surface_water/tmdls/clark_fork_lower/clark_fork_lower.cfm

South Fork Clearwater River
http://www.deq.idaho.gov/water/data_reports/surface_water/tmdls/clearwater_river_sf/clearwater_river_sf.cfm

Snake River-Hells Canyon
http://www.deq.idaho.gov/water/data_reports/surface_water/tmdls/snake_river_hells_canyon/snake_river_hells_canyon.cfm

Links to Idaho TMDLs:
www.deq.idaho.gov/water/data_reports/surface_water/tmdls/sba_tmdl_master_list.cfm

Illinois
Governor Bond Lake
-- one of the first TMDLs done in Illinois; example of a local watershed forming in response to a TMDL
www.epa.state.il.us/water/tmdl/report/governor-bond/governor-bond.pdf (final TMDL)
http://www.epa.state.il.us/water/tmdl/implementation/index.html (implementation info)

Indiana
Lake Michigan

Wabash River

Links to IN TMDLs: http://www.in.gov/idem/4685.htm

Kansas
--Spring River (metals)
http://www.kdheks.gov/tmdl/download/spring_metals.pdf

--Arkansas River (chlorides)
www.kdheks.gov/tmdl/la/2006_Ark_Hutch_to_MaizeCl.pdf

Maryland
Baltimore Harbor Nutrients TMDL

Anacostia River Fecal Bacteria TMDL

Anacostia River Sediments TMDL

Anacostia River Nutrients TMDL

Potomac River Tidal PCBs TMDL

Loch Raven/Prettyboy TP and Sediments TMDLs

List of Maryland's Approved Final TMDLs:
http://www.mde.state.md.us/Programs/WaterPrograms/TMDL/ApprovedFinalTMDL/index.asp

Massachusetts
Regional Mercury TMDL

Massachusetts Estuaries Project

Assabet River Nutrient TMDL

Links to MA TMDLs: http://mass.gov/dep/water/resources/tmdls.htm

Michigan
Lake Allegan phosphorus TMDL
—implementation of this TMDL has been very successful in terms of cooperation among stakeholders and reductions in phosphorus levels to date
http://www.deq.state.mi.us/documents/deq-swq-gleas-tmdlallegan.pdf

Minnesota
Statewide Mercury TMDL (approx. 1000 impairments to date)
http://www.pca.state.mn.us/water/tmdl/tmdl-mercuryplan.html
West Fork Des Moines River Watershed TMDL
-- Major watershed TMDL (8 digit HUC) for the Des Moines watershed covering all pollutant parameters
http://www.pca.state.mn.us/water/tmdl/project-westforkdesmoines.html

Shingle Creek Chloride TMDL
-- strong example of MS4 cooperation for TMDL development and implementation.
http://www.pca.state.mn.us/water/tmdl/project-shinglecreek-chloride.html

Lake Pepin Nutrient and Turbidity watershed TMDL
– covers half the State, western Wisconsin; pilot for stakeholder involvement
http://www.pca.state.mn.us/water/tmdl/tmdl-lakepepin.html

Minnesota River Dissolved Oxygen TMDL
-- catalyst to a basin permit and trading effort for 40 existing facilities and future new/expanding facilities
http://www.pca.state.mn.us/water/basins/mnriver/mnriver-phosphoruspermit.html

Mississippi
Tombigbee River Basin TMDL
http://www.deq.state.ms.us/MDEQ.nsf/page/TWB_tombigbeestatrep?OpenDocument

Missouri
Gabriel Creek
http://www.dnr.mo.gov/env/wpp/tmdl/pil-stoverlagoonsfinal.pdf

Bynum Creek
http://www.dnr.mo.gov/env/wpp/tmdl/bynum-pilo-appr-subm.pdf

Montana
Grave Creek Sediment TMDL

Ruby River TMDL document

Flathead Lake Nutrient TMDL (Phase 1)

Links to MT TMDLs: http://www.deq.state.mt.us/wqinfo/TMDL/index.asp

New Hampshire
Chloride TMDLs (expecting approval in 2008)

Beach bacteria TMDLs
-- detailed implementation plans that qualified for 319 funding

Northeast Region Mercury TMDL
-- prepared by the New England States, New York, and NEIWPCC)—this TMDL addressed all fresh surface waters in NH that are listed as impaired due to a Statewide fish consumption advisory that was issued because of elevated levels of mercury in fish tissue

Links to NH TMDLs: http://www.des.nh.gov/wmb/tmdl/nhstatus.htm.

New Jersey
TMDL Report for the Non-Tidal Passaic River Basin Addressing Phosphorus Impairments
--comprehensive TMDL based on a 14-year, multi-partnership effort
www.state.nj.us/dep/watershedmgt/tmdl.htm

New Mexico
Rio Hondo TMDL
-- Nitrogen and phosphorus
http://www.nmenv.state.nm.us/SWQB/Projects/RioHondo/index.html

Lowe Rio Grande TMDL
-- bacteria
http://www.nmenv.state.nm.us/SWQB/LowerRioGrande/

Ohio
Middle Cuyahoga
Two dam removals/ modifications; wonderful story of local action after a TMDL; funding put together from various sources: “win/win.” Clearly the TMDL was the catalyst; would not have happened w/o TMDL. Good source material available: city website, video, printed materials, 319 success story on web.

Sugar Creek
- farmer’s learning circles and monitoring program
- social aspects; “agroecology”
- trading program w/ SWCD personnel acting as inspectors
- monitoring done for TMDL revealed problem that was addressed immediately via permit, before TMDL completed
- involvement of university research/extension facility that has put together extensive grants (NSF, etc.)

Bokes Creek
- channel restoration completed to help stream process excessive nutrients from over-application of manure from egg farm
- collaboration among city (water supply), industry, State, contractor

Upper Sandusky
- monitoring done for TMDL revealed problem that was addressed immediately via permit, before TMDL completed
- involvement of university for monitoring grants, follow-up projects

Euclid Creek
- "opportunity" project: TMDL project added when watershed coordinator expressed interest in collaboration. TMDL and WAP developed in tandem
- urban watershed (rain barrel program, etc.)

Big Darby
- focus on protecting watershed under development pressure
- TMDL as one component of intense local planning effort
- construction storm water permit to address maintaining pre-development conditions (*e.g.*, recharge)

Link to OH TMDLs: http://www.epa.state.oh.us/dsw/tmdl/index.html

Oklahoma
Fort Cobb Lake
www.deq.state.ok.us/wqdnew/tmdl/fort_cobb/fort_cobb_final_tmdl_report_jun_2006.pdf

Oregon
Willamette TMDL
Represents a huge volume of work that is our current thinking on how to develop TMDLs. www.deq.state.or.us/wq/TMDLs/willamette.htm

Sandy TMDL
Highlights of this TMDL include its handling of the dams and use of the Little Sandy as a surrogate for the Bull Run River; also, given the removal of the PGE dams, restructuring of how the City of Portland (COP) withdraws water for water supply v. downstream release (to meet CWA and ESA objectives), and active work by a variety of parties (BLM, River Conservancy, METRO…) to buy and restore/protect riparian areas, it will likely be one of the first basins to come in compliance with the temperature standard (or come awfully close—we need to see how close when COP completes its work around 2012); also, this TMDL received some funding from COP, USFS, and BLM to accelerate its development and was completed ahead of time.
www.deq.state.or.us/wq/TMDLs/sandy.htm

Tualatin TMDL
The Tualatin Phosphate TMDLs (version I and II) have stood up well over the years and (because they were implemented) have resulted in substantial improvement in water quality.
www.deq.state.or.us/wq/TMDLs/willamette.htm

South Carolina
Rocky River Fecal Coliform TMDL
Successful implementation project as well
http://www.scdhec.gov/ENVIRONMENT/WATER/TMDL/docs/tmdl_rockywilson_fc.pdf

Links to SC TMDLs:
www.scdhec.gov/environment/water/tmdl/tmdlsc.htm

Utah
Deer Creek Reservoir
Spring Creek
Fremont River
Links to UT TMDLs:
www.waterquality.utah.gov/TMDL

Virginia
TMDLs addressing TDS as a pollutant

Tidal TMDLs with an integrated No Discharge Zones designations as an implementation tool

Links to VA TMDLs: www.deq.virginia.gov/tmdl/

Washington
Spokane River Dissolved Oxygen Water Quality Improvement Project
A TMDL complicated by the combination of PS and NPS pollution, permits issued for Idaho affecting Washington waters (still in progress); resulted in a phosphorus ban for the State.
http://www.ecy.wa.gov/programs/wq/tmdl/spokaneriver/dissolved_oxygen/index.html

Washington, DC
Tidal Potomac and Anacostia PCB TMDL
http://ddoe.dc.gov/ddoe/cwp/view,a,1209,q,497444.asp

Wisconsin
Lower Fox River TMDL (currently in development)
http://dnr.wi.gov/org/water/wm/wqs/303d/FoxRiverTMDL/

Appendix 8: List of State Contacts for Particular Issues/Innovations

Development of Certain Types of TMDLs

- Aluminum
    - Dave Montali, WV
      dmontali@wv.dep.org
- Bacteria
    - Dinorah Dalmasy, MD
      ddalmasy@mde.state.md.us
- "Implementable" TMDLs
    - Allen Bonini
      allen.bonini@dnr.iowa.gov
- Iron
    - Dave Montali, WV
    - dmontali@wv.dep.org
- Mercury
    - Marti Bridges
      Marti.Bridges@deq.idaho.gov
- Non (÷) daily loads
    - Dinorah Dalmasy, MD
      ddalmasy@mde.state.md.us
- Nutrients in tidal waters
    - Dinorah Dalmasy, MD
      ddalmasy@mde.state.md.us
- PCBs
    - Charles Martin
      chmartin@deq.state.va.us
- Phosphorus
    - Dave Montali, WV
      dmontali@wv.dep.org
- Regional TMDLs – mercury TMDL
    - Susannah King, NEIWPPC
      Sking@neiwpcc.org
- Sediments in non-tidal waters
    - Dinorah Dalmasy, MD
      ddalmasy@mde.state.md.us
- Septic tanks -- Source tracking, specifically leaking septic tanks (linked to summary of approach)
    - James Summers, WV
      JSUMMERS@wvdep.org
- Stormwater – impervious cover as a surrogate
    - Chris Bellucci, CT
      Christopher.bellucci@ct.gov

Alternatives to TMDLs

- 4b Approach
    - Eric Livingston
      Eric.Livingston@dep.state.fl.us
    - Marti Bridges
      Marti.Bridges@deq.idaho.gov
- Environmental Accountability Projects
    - Nicole Richmond, WI
      Nicole.richmond@wisconsin.gov

Implementation

- Ag Implementation
    - Carl Adams
      carladams@utah.gov
- Straight to Implementation
    - Helen Bresler, WA
      Hbre461@ecy.wa.gov

Cross-Cutting Themes

- Ag -sources
    - Eric Livingston, FL
      Eric.Livingston@dep.state.fl.us
- Interstate TMDLs
    - Dinorah Dalmasy, MD
      ddalmasy@mde.state.md.us
- Monitoring
    - Marti Bridges
      Marti.Bridges@deq.idaho.gov
- Urban Stormwater TMDLs and BMPs
    - Eric Livingston, FL
      Eric.Livingston@dep.state.fl.us
- Watershed approach
    - Dave Montali, WV
      dmontali@wv.dep.org
    - James Summers, WV
      JSUMMERS@wvdep.org
    - Carl Adams
      carladams@utah.gov

Appendix 9: ELI's Web Portal to the 2008 National Workshop and Related State TMDL Program Resources

In the wake of the June 2008 National Workshop, ELI staff have substantially updated our companion website for the project—which ELI will continue to maintain and make available after the close date for the project. All event materials, as well as other resources that may be of interest to State TMDL Programs, are available at:

http://www.eli.org/Program_Areas/Events/state_tmdl_06.24.08.cfm