



ENVIRONMENTAL LAW INSTITUTE®

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

THE TMDL PROGRAM IN TRANSITION

The NPS Problem: Designing TMDLs for Implementation

FINAL PROJECT REPORT & WORKSHOP PROCEEDINGS

OCTOBER 2009

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



Acknowledgments

The Environmental Law Institute (ELI) gratefully acknowledges the Watershed Branch of the U.S. Environmental Protection Agency, Office of Wetlands, Oceans & Watersheds, for its support of this important project, undertaken pursuant to Cooperative Agreement No. AW-83414701. Special thanks go to Branch Chief John Goodin and our excellent Program Officer, Menchu Martinez.

ELI is particularly indebted to the State members of our dedicated planning advisory group, whose generous investment of time, insights, and enthusiasm made this project a success: Helen Bresler, Kim Cenno, Mihir Mehta, Trinka Mount, Nicole Richmond, and Tom Stiles. Thank you!

The organizers also wish to thank everyone else who presented at the May 2009 workshop or who otherwise contributed knowledge and time to developing the event: Chris Bellucci, Corinne Billings, Allen Bonini, Joan Carlson, Glenn Carpenter, Rick Dunn, Katie Flahive, Gene Foster, Jim George, Curry Jones, Eric Livingston, Dean Maraldo, Nisha Mizel, Eric Monschein, Anne Peery, Andrew Pelloso, Dave Powers, Kathy Stecker, Jason Sutter, George Utting, Stephanie vonFeck, Dov Weitman, Aaron Wendt, Mike Wolf, and Sam Ziegler. Finally, a word of appreciation to Benita Best-Wong, Director of U.S. EPA's Assessment and Watershed Protection Division, for being an integral part of this workshop.

ELI staff contributing to this project are Bruce Myers, Sandra Nichols, Adam Schempp, and Annie Brock, as well as intern Philip Womble.

Except where expressly noted, the views expressed in this final report, and in the accompanying materials prepared and assembled by ELI, should not be attributed to U.S. EPA, or to other federal or State agencies, nor should any official endorsement be inferred. The information contained in these materials was gathered from many and varied sources, and ELI alone is responsible for errors or inaccuracies.

ELI maintains a companion website for this and related projects: our *State TMDL Program Resource Center*, at http://www.eli.org/Program_Areas/state_tmdl_center.cfm.

Contents

Executive Summary	4
I. Nonpoint TMDL Workshop: Themes	5
II. Nonpoint TMDL Workshop: Brief Session-by-Session Discussion	7
Welcome, Introductions, and Overview of Workshop	7
Sessions 1-2: Gaps and Barriers in Law and Policy	8
Sessions 3-4: Tricks of the Trade—Processes to Ensure NPS TMDLs Are Implemented.....	11
Day One Wrap-Up	14
Informal Evening Session: Effectively Leveraging and Prioritizing Existing Funds to Address Waters Impaired by NPS.....	15
Sessions 5-7: Best Practices in Developing and Implementing TMDLs that Reach NPS Pollution.....	16
Session 8: Opportunities for Public Outreach and Enhancing Engagement between State TMDL Programs and Stakeholders	19
Sessions 9-10: A Blueprint for Success: Directing Workshop Outputs	21
Workshop Wrap-Up	22
Appendix 1: Nonpoint TMDL Workshop Agenda.....	24
Appendix 2: Participant List.....	37
Appendix 3: A Nonpoint Source “Cookbook” for State TMDL Programs	43
Appendix 4: Summary of Policy Recommendations from Workshop Participants	56
Appendix 5: Summary of Nonpoint TMDL Workshop Participant Evaluations.....	60
Appendix 6: Workshop Web Portal—ELI’s <i>State TMDL Program Resource Center</i>	71

Executive Summary

In late May 2009, the Environmental Law Institute (ELI) convened a workshop on *The TMDL Program in Transition / The NPS Problem: Designing TMDLs for Implementation*. This event, supported through a cooperative agreement with the U.S. Environmental Protection Agency (EPA), brought together State TMDL Program officials from more than twenty States. The assembled participants focused on the pernicious problem of addressing nonpoint source (NPS) pollution—through the specific lens of the TMDL Program. They had an opportunity to share their unvarnished views with colleagues from other States, representatives of EPA Headquarters and multiple EPA Regions, the U.S. Forest Service, and the Natural Resources Conservation Service.

As with a similar event of national scope convened in June 2008, ELI and EPA intended for this Workshop to provide a fresh 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 planning process that would culminate in a State-driven workshop, ELI assembled a Planning Advisory Group (PAG) consisting primarily of State TMDL Program officials. For approximately six months, this group worked through a highly-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 event agenda and substantive panel presentations. The PAG also had a strong voice in deciding the nature and extent of federal participation in the event.

State participants (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. Key to this event, and to the 2008 precursor event, was having the right people in the room.

The two-day workshop, held in a retreat-type setting, was successful by the metrics of generating new ideas, building inter-State relationships created the year prior, and forging new ones. Again this year, distinct overall themes emerged from the gathering; these themes are identified in the two pages that follow. The balance of this report contains a detailed, session-by-session summary of event proceedings. Appendix 3 presents ELI's living "Cookbook" of practical State TMDL approaches suggested by Workshop participants, and Appendix 4 goes a step further, laying out a range of recommendations for policy change—and reform—that participants, based on their experience, proposed for improving the TMDL Program.

ELI continues to build on the momentum and enthusiasm generated by this and the prior year's events through an ELI-administered website for State TMDL Programs, and through a listserv dedicated to State professionals and 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, bring together a breadth and depth of existing and new information about specific State TMDL Programs, their innovations, and the challenges that they face—especially in the realm of waters impaired by nonpoint sources.

I. Nonpoint TMDL Workshop: Themes

From the perspective of ELI staff in attendance, the following important themes and sub-themes emerged from the two-day Workshop:

TMDL PROGRAM IS AT A CROSSROADS

- (1) The TMDL Program is in a period of transition, and its direction will be influenced by multiple factors: the emergence of many States from the burdens of consent decrees, the new priorities of an incoming Administration, and increased public awareness and scrutiny of the problem of nonpoint source pollution.

LEGAL AUTHORITY: THERE ARE GAPS & OPPORTUNITIES

- (2) The States' ability to effectively address waters impaired by nonpoint sources is constrained by the lack of legal authority at the federal level and (in most cases) at the State level to implement TMDLs or otherwise provide for their enforcement.
- (3) The States can, however, make more effective use of State legal authorities that are already on the books.

INSTITUTIONAL BARRIERS PERSIST

- (4) States should improve integration of TMDL Programs and NPS Programs, physically combining the two programs and/or better coordinating the respective procedures of each.
- (5) EPA should improve internal coordination between the TMDL Program and the NPS Program, more closely integrating their respective structures and outputs, including TMDLs and watershed management plans.
- (6) EPA should improve its external coordination with USDA (USFS and NRCS) by (A) identifying overlapping legal and institutional objectives, and (B) taking steps to insure that each agency, where appropriate and feasible, is carrying out its overlapping mandates so as to help advance the objectives of its sister agencies.
- (7) States should improve their own coordination with USFS and NRCS and capitalize on existing opportunities with these agencies.

NEED FOR CHANGES IN EPA POLICY

- (8) The States continue to be pressed with the need to balance concerns of TMDL "pace" against concerns of TMDL "rigor." EPA should provide guidance to the States on this issue, particularly as they emerge from consent decrees and face important questions of prioritization.

- (9) EPA should ensure that State success can be measured against interim metrics and that States are appropriately credited for their implementation activities.

NEED TO IMPROVE TMDL FOCUS, CONTENT, AND PACKAGING

- (10) The States should consider how a given TMDL will play to its audiences—both including and in addition to EPA—and shape the document accordingly.
- (A) A TMDL should contain sufficient information to allow for ease of implementation—by way of a watershed plan or otherwise (*e.g.*, identify key geographical areas or specific sources).
- (B) The TMDL should be easily understood by the various intended audiences/implementers (*e.g.*, an executive summary can be developed for watershed stakeholder groups and technical data shifted to an appendix).

NEED TO ENHANCE STAKEHOLDER ENGAGEMENT

- (11) State TMDL Programs should continue to expand and improve their relationships with stakeholders, particularly watershed groups, municipalities, and other local-level actors, since they often are key to successful implementation. Such engagement should take place early in the process by way of targeted TMDL development and continue through the implementation phase.

II. Nonpoint TMDL Workshop: Brief Session-by-Session Discussion

Welcome, Introductions, and Overview of Workshop

ELI staff opened the Workshop with a statement of welcome to the 45 assembled participants, consisting of individuals representing 23 State TMDL and NPS Programs; 14 EPA personnel, including 8 from EPA Headquarters and six from EPA Regions 3, 4, 5, 8, and 9; and one each from the Natural Resources Conservation Service (NRCS) and U.S. Forest Service (USFS).¹ (A complete list of Workshop participants and their contact information appears in Appendix 2 to this report.)

John Goodin, EPA Watershed Branch Chief within the Office of Wetlands, Oceans, and Watersheds, and Benita Best-Wong, Director of the Assessment and Watershed Protection Division, opened the event. Mr. Goodin provided the context for the workshop, noting that nonpoint source pollution was the principal problem in TMDL programmatic implementation cited by participants at ELI's 2008 National TMDL Workshop.

Ms. Best-Wong outlined the significance of the Workshop against a backdrop of growing nationwide awareness of the difficulties experienced by nonpoint source control programs. She pointed out that the TMDL Program in its entirety has demonstrated notable progress in the last decade, finishing nearly 38,000 TMDLs since 1998 and completing consent-decree litigation agreements in all but 11 States; however, further transition from water quality analysis to implementation is essential, and increased involvement of nonpoint polluters is needed. Nonpoint source controls are hampered by the overall lack of regulatory authority. Ms. Best-Wong emphasized the inability of the current point source permit system to effectively limit nonpoint source pollution and the importance of pursuing equitable allocation of rights among polluters. She also underlined the significance of the input EPA expected to receive throughout the Workshop, noting its relevance, for example, to the Nutrient Innovations Task Group proposals being developed with outside State and EPA representatives. Finally, Ms. Best-Wong highlighted the opportunities presented by new executive leadership and the possibility of playing a role in shaping the direction of future policy.

¹ Many of the Workshop participants first assembled the evening prior for a welcome reception convened at the National Conservation Training Center's Murie Lodge. This initial, informal gathering afforded ELI a public opportunity to thank each State member of the Planning Advisory Group, whose ideas, energy, and enthusiasm were critical to the success of this project.

Sessions 1-2: Gaps and Barriers in Law and Policy

Session 1: The Divide between State NPS and TMDL Programs and their Respective Water Quality Objectives

Some intended outcomes of the first session included:

- Participants will be familiar with the water quality objectives of some State NPS Programs and how those relate to (and are distinct from) the objectives of State TMDL Programs.
- Participants will be familiar with how integrated TMDL and NPS Programs are working, as compared to when those programs are not integrated.

Andrew Pelloso, Indiana: An Integrated Approach to Improving Water Quality—Indiana’s NPS/TMDL/IR Program²

Prior to 2005, TMDL and NPS efforts planned through IDEM (Indiana Department of Environmental Management) experienced a disconnect due to differing missions and little coordination between the two offices. After the 2005 physical reorganization of both offices under the IDEM watershed planning branch and integration of concurrent project goals, funding pursued through 319 and 205(j) grants by the NPS Program has been prioritized for watersheds with impaired waters, has identified stakeholder support, and has resulted in completed TMDLs. To date, IDEM has completed 698 TMDLs and has accomplished 32% of implementation through NPS pollution reduction measures.

Eric Livingston, Florida: The Continuing Evolution of Stormwater and Watershed Management in Florida

As in Indiana, efficiency of the TMDL creation and implementation process in Florida increased due to integration of the TMDL and NPS programs. Nearly all TMDLs developed in the State of Florida are focused on NPS pollution due to strong point source regulations introduced in the early 1980s that greatly reduced point source discharges. Additionally, Florida was the first State in the country to require all new development and redevelopment to treat its stormwater to a specified level of load reduction with the implementation of the State stormwater rule in 1982. In the late 1980s, emphasis was placed on preventing new sources and reducing existing sources of NPS loads. Florida’s economic reliance on clean water supplies garnered support for NPS involvement in watershed management approaches, leading to 2005 amendments to the Florida Watershed Restoration Act (FWRA), requiring enforceable agricultural BMP standards. Proposed 2010 stormwater rules would also require 85% nutrient reductions.

² Note that all Workshop participant presentations referenced in this report are available online at ELI’s *State TMDL Program Resource Center*. See Appendix 6 for the URL.

Nesha Mizel, Virginia: Nonpoint Source Pollution and TMDLs in Virginia

The Virginia Department of Conservation and Recreation (VDCR) is the primary agency responsible for TMDL implementation in the Commonwealth of Virginia, and it maintains a cooperative MOU with the agency responsible for TMDL creation, the Virginia Department of Environmental Quality (VDEQ). VDCR used spatial datasets as a method of identifying promising locations for potential BMP investments based on 303(d) listings and stakeholder interest and tracking past BMP installations and popularity. VDCR has also applied a number of agricultural BMPs through State cost-share programs, which provide between 50% and 100% of project funding. Active engagement with stakeholders has involved regional agricultural interests and provided helpful feedback on NPS implementation.

Session 1 Plenary Discussion

Identifying methods of engaging farmers in long-term adoption of water quality improvement practices is a key concern in NPS TMDL implementation. States such as Delaware and Florida have passed laws requiring agricultural involvement in nutrient management, while other agencies such as VDCR have focused on maximizing economic incentives to adopt BMPs through cost-sharing, positive publicity, and initiation of green marketing schemes. Strategically targeting agricultural community leaders who have water quality interests has also proven to be an important factor in driving beneficial changes in behavior. Public participation in both the establishment of realistic water quality standards and the development of TMDL implementation plans were identified as additional suggestions for expanding the public's interest in water quality goals.

Session 2: The Divide between Federal NPS and State TMDL Programs and their Respective Water Quality Objectives

Some intended outcomes of the second session included:

- Participants will better understand the objectives of key federal programs relevant to nonpoint source pollution and how those differ from / are compatible with the objectives of State TMDL Programs.
- Participants will be familiar with the perspectives of some federal programs on how coordination with State TMDL Programs may be improved.
- Participants will have set the stage for continued discussion among State water quality agencies and federal agencies about how to strengthen coordination and relationships.

Dov Weitman, EPA Headquarters: NPS Program Perspectives

While adequate funding and regulatory authority are commonly not available for NPS pollution remediation, maximizing benefits associated with 319 funding and SRF are key to successful BMP implementation. Watershed-based plans highlighting quantified impairment sources and improvement options in 303(d) waters are necessary for identification of cost-effective BMP opportunities that can realistically reduce pollutant loads to established water quality standards. Improved integration of USDA-based funds and information into watershed-based plans also presents opportunities for enhancement of NPS efforts. While Farm Bill restrictions may prevent access to farm-specific NPS data, pursuing holistic, sub-watershed-level information when available can be very helpful in directing funds.

Glenn Carpenter, NRCS: NRCS Perspectives

The Natural Resources Conservation Service (NRCS), which receives substantial funding through USDA for NPS pollution reduction methods, provides financial assistance to introduce BMPs at the request of producers. Due to inadequate staffing, NRCS has encountered problems completing all Comprehensive Nutrient Management Plans (CNMP) and finding sources for all funding appropriated by Congress in recent years. As specified in the Farm Bill, NRCS is barred from providing farm-specific information to the public or other agencies and lacks the legal authority to ensure implementation of BMPs.

Joan Carlson, USFS: Water Quality Management on National Forest Lands

The U.S. Forest Service (USFS), whose lands represent the largest single source of water in the continental United States and provide approximately 20% of the nation's water supply, operates on a regional, decentralized basis. While this structure is established purposefully with the intent of providing flexibility with local environmental and political characteristics, it presents coordination challenges, specifically with consistency in monitoring, at the federal level. USFS principally concentrates on installation of BMPs and restoration of historically degrading land uses and is obligated to monitor BMP practices on USFS lands. The regional focus does allow USFS to work cooperatively with State water quality agencies, with which the agency has signed 25 agreements, and to prioritize BMP projects in impaired waters with high potential. Further integration of the existing USFS BMP tier system into State TMDL implementation plans can aid USFS in optimizing its overall restoration efforts.

Session 2 Plenary Discussion

A more effective targeting of NRCS funds and farmer outreach was identified as an area needing substantial improvement in the federal approach to NPS control. NRCS's mission as an agricultural partner and not a regulator currently precludes involvement beyond mere guidance on pollution control methods. Participants would like to see NRCS assume a more proactive approach to farmer engagement, including

presentation of 319 plans and increased collection of NPS pollution data at the 12-digit Hydrologic Unit Code (HUC) level. Participants also suggested that States engage USDA on a watershed scale during or after TMDL development to explore opportunities for dedicating NRCS technical assistance and FSA financial cost-sharing assistance to agricultural operations within the watershed that are known or expected to be contributing to loads identified in the TMDL. In addition, State leveraging of NRCS funds through compulsory agricultural BMP programs, such as those in Florida, can prioritize allocation of funds and promote increased farmer involvement. NRCS also suggested State participation in State Technical Advisory Committees as a means of directly impacting local NRCS project implementation.

EPA is currently soliciting State input through the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) and measuring the feasibility of various NPS control options, including increased regulation, as it awaits appointment of a new Assistant Administrator for Water.³

Workshop participants also underscored the importance of incorporating social and economic concerns into watershed-based planning and having resolute State commitment to the development of implementation plans for impaired waters following TMDL development.

Sessions 3-4: Tricks of the Trade—Processes to Ensure NPS TMDLs Are Implemented

Session 3: Among State Programs

Some intended outcomes of the third session included:

- Participants will learn how different States maximize resources for effective TMDL implementation by taking advantage of all water quality program—including water quality standards, monitoring, 303(d), NPDES, and 319.
- Participants will learn about States' institutional structures and strategies for developing and implementing NPS TMDLs, including
 - Collaboration
 - Cost-sharing
 - Optimal use of available regulatory authority
- Participants will learn how some State TMDL Programs are leveraging relationships with other State agencies to better implement TMDLs that reach NPS pollution.

³ Peter S. Silva was confirmed as Assistant Administrator for Water in July 2009.

Tom Stiles, Kansas: Implementing Kansas NPS-TMDLs: Tricks of the Trade

Kansas is yet another State with TMDLs dominated by NPS pollution, especially throughout the past decade. The majority of Kansas' 319 and State water plan resources are distributed through the Water Restoration and Protection Strategy (WRAPS) program, which is principally responsible for watershed plan implementation. While WRAPS and similar basin planning initiatives allocate funds to projects in basins with high-priority TMDLs, generally in critical 12-digit HUC watersheds, further specificity in project selection is needed to ensure that funds are actually targeting projects with the most promise for water quality improvements. Kansas encourages including a personal touch (*e.g.*, guest lecturers and advisors to watershed groups) to make TMDLs more accessible to the general public, along with setting interim water quality goals to chart progress in impaired watersheds. A broad interpretation of Kansas's State statutory authority could include NPS regulation and enforcement; however, until greater detail is included in the TMDL implementation process, use of "warning shots" has been deemed more effective than imposing fines.

Rick Dunn, Massachusetts: The Massachusetts Estuaries Project: A Collaborative Effort to Protect and Restore Southeastern Massachusetts Embayments

In Massachusetts, and especially in Cape Cod, communities are particularly receptive to pollution reduction measures due to the economic dependence on water quality for tourism. Massachusetts essentially has broad statutory authority to control nonpoint sources of pollution, but this has not coincided with political will to expand regulation. Maximizing external resources is central to Massachusetts TMDL development and implementation; funding from a number of actors such as local and federal governments, along with analysis from UMASS-Dartmouth and the Cape Cod Planning Commission, have provided a base for pursuing healthy waters. For instance, to identify towns truly interested in long-term adoption of water quality goals, Massachusetts Department of Environmental Protection (MassDEP) requires a three-year baseline data collection period funded by the towns prior to State involvement in TMDL implementation in the region. TMDL development has benefited substantially from expanded resources, including GIS determinations of nitrogen loadings at the parcel level, modeled growth projections and associated pollutant loads, and proposed build-out scenarios to identify land use options with better ecological results. MassDEP has refused to subdivide TMDLs by towns in an effort to propagate watershed awareness for water quality problems. Exploration of non-traditional, engineered options to enhancing water quality, such as improving estuarine flushing and enhancing natural attenuation, has also been suggested as a method of meeting water quality goals.

Jason Sutter, Arizona: The Southwestern Perspective

The dry nature of Arizona's climate leaves fewer waterbodies available for monitoring and subsequently fewer demonstrating impairment; only 70 Arizonan waters are currently identified on the 303(d) list. NPS implementation in Arizona has largely focused on the importance of collaborative programs—such as those involving

education and planning—due to State statutes restricting all NPS action to voluntary achievement. Examples of uses of State and federal 319 funding are evident in Arizona’s Nonpoint Education for Municipal Officials (NEMO) program, which includes a GIS component identifying potential water quality projects, and expanded NPS education efforts at local universities.

Session 3 Plenary Discussion

Participants noted that improvements in TMDL accessibility to public watershed audiences present opportunities to enhance and expand current NPS controls. States such as Iowa now present TMDLs in more comprehensible formats, beginning with executive summaries and fact sheets and include all scientific data required by EPA in an appendix. Other States emphasized the importance of regular contact between State 319 and TMDL Programs, along with local government agencies, in the TMDL translation process. Expanded use of university expertise was also identified as a potentially overlooked resource, though difficulties with proprietary management of data were acknowledged.

Session 4: State-Federal Relationship

Some intended outcomes of the fourth session included:

- Participants will learn how some State TMDL Programs are using relationships with federal agencies to improve the development and implementation of TMDLs that reach NPS pollution.
- Participants will be familiar with how State and federal agencies, including EPA, see the future of NPS pollution and the potential role of State TMDL Programs.

Dean Maraldo, EPA Region 5: TMDLs, Implementation, and Gatorade®: The Benefits of Knowing Your Customer

Increasing the accessibility of TMDLs to their intended audiences is a necessity when it comes to engaging NPS pollution sources in remediation under the current legal framework. It was noted that TMDLs serve little practical purpose without implementation, making communication with program stakeholders and local watershed groups of high importance. Establishing local ownership of water quality restoration objectives and identifying measurable progress are essential to maintaining long-term community motivation. Central to this goal is an increased emphasis on small-scale planning and policy suggestions at local levels. Early and continued involvement of stakeholders throughout the implementation planning process will also help to ensure efficient use of funds and placement of projects.

Allen Bonini, Iowa: Implementing NPS TMDLs: Iowa’s New Strategy for Success

Iowa’s TMDL program is funded almost entirely through federal 319 grants, making investments in cost-effective water quality improvements of high importance. Directing agricultural funding towards projects based on the premise of “precision

conservation” instead of “random acts of conservation” has been particularly challenging. Aligning efforts with dedicated supporters of NPS-based water quality improvement measures and continuous stakeholder involvement in the planning process is also extremely important in ensuring efficient fund allocation. Iowa’s Department of Natural Resources (DNR) also preferentially focuses resources in small watersheds, stream segments draining less than 30,000 acres, and significant lakes to promote visible, measurable progress that is more likely to delist waters from 303(d) and increase public support. Finally, in efforts to further target NPS-based projects, DNR has employed aerial photography and LiDAR readings as a method of discovering information about agriculture.

Aaron Wendt, Texas: The Texas Perspective

In Texas, the TMDL process and federal 319 funding is split between two State agencies: the Texas Council on Environmental Quality (TCEQ) and the Texas State Soil and Water Conservation Board (TSSWCB). The TSSWCB, which solely manages TMDLs dealing with waters impaired by agricultural or silvicultural land uses, has placed emphasis on distancing implementation plans from the regulatory connotations associated with most TMDL and 319 efforts in Texas. The agency issues Water Quality Management Plans (WQMP), which function much like voluntary NPS permits, as a means of promoting installation of cost-shared BMPs. The Aquilla Reservoir in Texas is representative of a success story on 303(d) delisting, and key elements of the removal of atrazine pollution included phased approaches to implementation and the threat of eventual enforcement from the Texas Department of Agriculture (TDA).

Session 4 Plenary Discussion

An important topic raised by participants during the plenary session was the issue of establishing and meeting the pace set for TMDL completion in States with consent-decree agreements. Some State and federal officials justified the importance of completing thorough, high-quality TMDLs if doing so will result in well-implemented plans and apparent improvements. Risks of further lawsuits could also be managed by focusing early remediation efforts in watersheds with active constituencies. Emphasis was placed on setting high standards for watershed plans so that water quality enhancement measures are more likely to succeed. However, this approach might not be quite as plausible in States with more active environmental advocacy groups. Complications between stakeholders and State government are evident in debates surrounding established water quality standards, and it has been helpful for agencies to translate local goals into scientific objectives.

Day One Wrap-Up

John Goodin reviewed the first day’s discussions and presentations by referencing a number of optimistic developments in nonpoint source control methods. The proactive approach demonstrated through the emergence of State and local

regulation and dedicated funding sources was especially encouraging. Mr. Goodin also recalled multiple programs identifying opportunities for reorganization, whether administrative or physical, that have increased efficiency by better aligning State 319 and TMDL Program goals. Some State agencies also established nonpoint source monitoring programs in preparation for later BMP modeling and have taken novel approaches to obtaining agricultural information through the use of aerial photography and satellite imagery. Increased efforts toward targeting influential local leaders to implement nonpoint source controls are another example of progress in the TMDL implementation process. Mr. Goodin concluded his comments by noting his interest in the following day's presentations and asking whether all available avenues for controlling nonpoint sources have been exhausted.

Informal Evening Session: Effectively Leveraging and Prioritizing Existing Funds to Address Waters Impaired by NPS

Intended outcome of the evening session:

- Participants will have learned about strategies for leveraging existing funds from federal programs and other sources. Specific focus will be placed on obstacles to and opportunities for targeting resources.

Benita Best-Wong, EPA Headquarters
Stephanie vonFeck, EPA Headquarters

Much of the informal evening session was dedicated to effective use of State Revolving Fund (SRF) loans, which received an extra \$4 billion in funding this year for NPS control projects under the American Recovery and Reinvestment Act (ARRA). SRF loans are potentially available for implementation of centralized wastewater collection and treatment projects, installation of stormwater infrastructure, and for developed 319 and 320 project plans. Twenty percent of the new funding must be applied to projects deemed to contribute to expansion of green infrastructure; these funds may be directed toward stormwater, efficient irrigation, green energy and efficiency, and innovative projects. Non-permitted stormwater projects have traditionally been easier to fund with SRF loans because they can be obtained through the less-competitive 319 program. The \$4 billion dedicated to SRF loans from the stimulus package may not be used to purchase wetlands properties, but restoration on previously owned wetlands may qualify for funding. Also, unless expressly exempted, all projects receiving SRF loans must use American-made equipment.

Participants suggested various options to help States both in maximizing the funds they receive and in obtaining more total loans for NPS projects. States were encouraged to involve private investors interested in assisting with water quality improvements as an alternative to expanded regulation and also to strongly consider removing any existing State barriers to receiving State funding. Consistent work with county governments, banks, and State departments of agriculture has also proven

successful in many instances, providing additional administrative support and local contacts for NPS projects in need of funding. Effective engagement of the public and communication of the importance of utilizing SRF has helped garner support for green projects in States where constituents are less accepting of loans. It was noted that commitment from politicians, especially governors, and publicity surrounding these projects has often increased public acceptance of SRF.

Sessions 5-7: Best Practices in Developing and Implementing TMDLs that Reach NPS Pollution

Session 5: Best Practices (Part I)

Some intended outcomes of the fifth through seventh sessions included:

- Participants will be familiar with the foundation of various States' NPS implementation authority and how that authority has evolved.
- Participants will be familiar with how States have implemented NPS TMDLs, including the use of any available enforcement authorities and approaches.

Corrine Billings, Wisconsin: The Wisconsin Perspective

Wisconsin is one of a limited number of States with existing enforcement authority over NPS pollution. The program originally started as a largely voluntary approach under the Priority Watershed Program, which created NPS control plans and provided cost-sharing and local support funds to reduce loadings from point and nonpoint sources. However, after State officials deemed voluntary efforts ineffective, the State legislature expanded NPS authority. The program evolved to include regulatory authority in designated critical water quality sites, and, in 1997, new statutes introduced statewide NPS performance standards for both agriculture and non-agriculture. These enforceable performance standards concentrate on cropland stewardship practices and manure management, with the State typically providing cost-share funding to aid implementation. However, if a farm becomes compliant and then falls back out of compliance, the State has no obligation to resume cost-sharing. A new proposal would also further integrate TMDL design and implementation plans, requiring implementation of BMPs designed to meet the load allocation of an approved TMDL.

Helen Bresler, Washington: It Takes More than a Good TMDL to Get to Implementation

Washington possesses enforcement authority with respect to NPS pollution, with State statutes giving the Department of Ecology broad jurisdiction over unlawful discharges and requiring BMP installation to mitigate pollution. However, significant organizational changes have been necessary within the Department of Ecology to integrate NPS, TMDL, and grant program objectives. A specific focus on improving the content of TMDLs has resulted in inclusion of the nine elements of 319 watershed plans

and specific BMPs to better target funding, wasteload allocations that can be translated into actual effluent limitations for implementation, and consulting local planners as advisors. In an effort to promote the development of thorough TMDLs, Washington is pursuing renegotiation of the pace set in its consent-decree settlements. The Department of Ecology is also currently developing a BMP manual, for particular land uses, that can be directly inserted into TMDL implementation plans. Finally, Washington has increased assertion of its enforcement authority by levying heavy fines on consistent violators.

Sam Ziegler, EPA Region 9: NPS Regulation in California: Looking for the “Third Wave”

California’s broad enforcement authority over NPS pollution covers all waste discharges to land, surfaces, and groundwater. Limits on waivers of waste discharge requirements in the State eventually pushed agricultural interests to accept responsibility for their contributions to waterbody impairments. Even with this regulatory authority, significant barriers to effective TMDL implementation have surfaced. The TMDL development process is backlogged due to administrative and monitoring burdens, and enforcement actions have been limited due to agricultural confidentiality. Successful implementation of TMDLs has been apparent when the TMDLs are developed concurrently with river basin plans. However, the key step to effective water quality remediation lies in identifying effective compliance tools. Establishing methods to enforce performance-based standards with cooperation from both water quality boards and farmers will help determine the future success of California’s TMDL Program. Mr. Ziegler also envisions a “third wave” of combined, proven regulatory and non-regulatory approaches defining the future of NPS pollution controls at both the State and federal levels.

Session 5 Plenary Discussion

Presenters from States with enforcement authorities clarified a few technical points regarding how other States might approach these types of regulatory authorities. Wisconsin has broad manure management authority, which extends to all surface waters in the State, and has also found that the mere threat of regulatory pressure has generally been enough to convince NPS actors to adopt BMPs. Washington also has promoted pollution reductions through publication of a technical document setting forth a suite of BMPs available to help NPS polluters meet regulations; these BMPs are typically pursued through a prescriptive land-use approach, with little focus on quantifying load allocation reductions. However, Washington also allows NPS polluters to apply a demonstrative, performance-based approach if they can identify more effective or desirable methods to meet the required standards.

Session 6: Best Practices (Part II)

Michael Wolf, Oregon: TMDL Implementation in Oregon: Leveraging Resources to Meet Enforceable Requirements

Success in TMDL implementation in Oregon has followed introduction of requirements for watershed-based TMDLs, identifying responsible parties and enforcing actions, and top-down government leadership on water quality initiatives. TMDLs, which under Oregon law are required to contain implementation plans and specified content, are issued as an order to all responsible PS and NPS polluters in identified watersheds and focus on performance-based, non-prescriptive methods of attaining water quality goals. These outcome-based standards have effectively leveraged and targeted funds from public and private sources, and enforceable requirements for all NPS land uses have been critical to noted water quality improvements.

Jim George, Maryland: TMDL NPS Implementation in Maryland

In Maryland, combination of the 319 and TMDL implementation programs has helped harmonize goals and more effectively allocate funding. The State also directed resources from the 319 program towards funding seven additional agricultural technicians to ensure that all agricultural NPS funding is spent. The Maryland Department of the Environment (MDE) has encountered problems with local permitting decisions contradicting State TMDL intent; they have counteracted this tendency through the issuance of implementation guidance to local governments and a 2006 requirement that TMDLs be considered in local land use planning. With reference to Maryland's Chesapeake Bay contributions, Dr. George encouraged increased EPA involvement in ensuring compliance with pollution limits. Also, in instances where PS or MS4 stormwater permittees cannot immediately meet effluent concentration limitations, MDE has suggested use of agricultural NPS offsets to allow prompt reductions in impairments.

Kathy Stecker, North Carolina: Regulating (Or Not) NPS in North Carolina

While North Carolina has established statutory authority to control NPS pollution, in most cases, voluntary approaches are implemented in place of enforcement. In response to harmful algal blooms and fish kills, waters designated as nutrient-sensitive in North Carolina mandate development of nutrient-based TMDLs and load reductions from agricultural, stormwater, and PS pollution. The TMDL development process in North Carolina has been cumbersome at times, with some plans requiring up to ten years for completion and resulting in oversized implementation plans. In instances where local stakeholders have shown consistent interest in water quality improvements, voluntary implementation has proven to be more feasible and timely. North Carolina prefers to pursue collaborative, non-TMDL approaches to controlling NPS pollution in these situations. In cases where local interest is lacking, simply the threat of performing a TMDL on a waterbody may motivate pollution controls. The State also has integrated

a pace credit alternative pilot program to receive EPA credit for completing projects in lieu of TMDLs.

Session 7: Plenary Discussion

The first extended discussion in this plenary session focused on charting the effectiveness of compulsory NPS control programs and methods for convincing stakeholders and legislators that NPS regulatory tools are a necessary component of achieving water quality standards. Much of the discussion centered on effective communication of the economic benefits of clean water through ecosystem services, public health, and tourism. Land-locked States with lower overall public interest in water have had an especially hard time portraying the benefits of clean water, making information distribution of high importance. Participants acknowledged the classic “tragedy of the commons” problem represented by the failure of agriculture to internalize the costs of its pollution. Due to political practicality, some States have resorted to cost-share programs to promote farmer acceptance of regulation. Other States noted that in cases where there is a general willingness among the population to pay for clean water, economic arguments become necessary, and economics may not always favor TMDL implementation. In other instances, agricultural-sector fear of outside regulation has prompted acceptance of State-level enforcement authorities. Downstream responsibility, particularly within the Mississippi River Basin, was touted as a political tool that may advocate stricter NPS controls.

While most participants see increased regulatory authority as desirable, States with statutory authority over NPS pollution noted the necessity of associated demonstrable progress in achieving water quality. Some States with regulatory authority, like Washington and Wisconsin, have achieved notable de-listings and deterred future pollution. Limited monitoring resources in other States have made it difficult to demonstrate success. Participants also acknowledged the extensive residence times of some pollutants and the need for realistic, incremental water quality goals and continuous monitoring to chart improvements.

Session 8: Opportunities for Public Outreach and Enhancing Engagement between State TMDL Programs and Stakeholders

Some intended outcomes of the eighth session included:

- Participants will be familiar with a range of approaches employed by other States to improve public education and outreach—and better understand what is working, what is not, and what is still needed.
- Participants will have a sense of the pros and cons of employing these approaches in their States and an understanding of likely obstacles—and changes that will be needed to make approaches work.
- Participants will be familiar with how some States have improved their relationships with local governments and other key stakeholders in the process of

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

Anne Peery, Missouri: Missouri's Approach to Public Participation: Making Opportunities

In the absence of State regulation of NPS discharges, the Missouri Department of Natural Resources (DNR) goes into each watershed where there is a nonpoint source TMDL and helps the community organize a watershed group to address the problem and effect implementation. A principal challenge in watershed group establishment is the availability of dynamic local individuals who have a real, long-term passion for advancing clean water goals. An extremely popular program for educating and involving the public on nonpoint source water quality issues is Missouri Stream Teams. This program commenced in 1989 and has grown substantially to include nearly 4,000 stream teams involving over 60,000 individuals throughout the State. Stream teams are involved in a variety of actions including education, litter pick-ups, monitoring and conservation measures. Data obtained by Stream Teams are forwarded to DNR and evaluated to identify waters needing subsequent State inspection.

Kim Cenzo, New Jersey: Implementing a TMDL through Stakeholder Involvement in Lake Hopatcong, New Jersey

Public participation in two New Jersey lake case studies proved to be an effective method of TMDL implementation on a watershed scale. Stakeholder and municipal involvement surrounding Lakes Hopatcong and Shawnee was especially accentuated in these cases because of a recognizable connection to water quality; this connection was enhanced by a study noting the economic impacts of clean water on surrounding property values. After a phosphorus TMDL was developed in 2003, grants totaling \$800,000 and \$735,000 were used to install and quantitatively monitor BMPs selected by the public. A refined TMDL subdivided the phosphorus loadings to Lake Hopatcong by municipality and identified pollution "hot spots," which led to healthy competition between towns—and to four municipal bans of phosphorus-based fertilizers.

Session 8 Plenary Discussion

In the plenary session, participants discussed methods of incorporating voluntarily-monitored data into State water quality efforts. In Missouri, Stream Team volunteers are not restricted to monitoring impaired waterbodies; data collection is permitted at any desired location. In Massachusetts, trained volunteers can collect data that will be incorporated into State datasets for purposes of 303(d) listings. Participants also concentrated on the effect of State regulation of the phosphorus composition of fertilizers. Individual State laws on phosphorus content have forced early adoption of phosphorus-free fertilizers for lawns nationwide. Use of 319 funding and focus on promoting solutions can help deter public discouragement over rigorous water quality

standards. As shown in the New Jersey case studies, encouraging municipal involvement can spur BMP installation and increase local authority over NPS.

Sessions 9-10: A Blueprint for Success: Directing Workshop Outputs

Session 9: Directing Workshop Output No. 1

After discussing a number of successful regulatory and non-regulatory strategies for addressing NPS pollution at local, State, and federal levels, the objective of the ninth session was to compile information for a “cookbook” of strategies for effectively addressing nonpoint source impairments through the TMDL Program. The initial iteration of a living “Nonpoint Source ‘Cookbook’ for State TMDL Programs” can be found in Appendix 3.

Participants identified many tools and approaches mentioned during the course of the Workshop for managing NPS pollution in States with regulatory authority over NPS—and those without. A number of suggestions were made regarding State-issued implementation guidance and prescriptive BMP lists as means of affecting local government decision-making processes. State agencies also identified inclusion of local planners in the TMDL implementation process as a possibility for intervention. As noted, some States have had success with administratively—and physically—reorganizing their TMDL and 319 programs so as to help prioritize funding of the most cost-effective, feasible projects. Also, maintaining the long-term interest and enthusiasm of stakeholders is of high importance; as are identifying innovative methods of escaping the binary 303(d) listing process and demonstrating incremental improvement, along with strategic monitoring strategies to reveal real progress. Participants revisited the topic of packaging TMDLs in a manner to ensure accessibility by the public.

Pursuing relationships with NRCS at the State and local level, as in Texas, and potentially joining an NRCS State Technical Advisory Committee, can improve the results of USDA funding used for water-quality-related purposes. As emphasized throughout the Workshop, participants agreed that specific TMDL implementation plans at a watershed scale are necessary for effective responses in impaired waters. Finally, one attendee noted the importance of not overlooking opportunities for using private market-based incentives, such as green marketing schemes and certifications, to encourage adoption of sustainable practices.

Session 10: Directing Workshop Output No. 2

Shifting the conversation from the purely descriptive to the normative, the tenth and final substantive session of the Workshop focused on capturing specific policy proposals for improving efforts to address NPS pollution through the lens of the TMDL Program. The compiled recommendations resulting from this session appear in Appendix 4.

A popular suggestion for policy reform was to remove or limit the farm confidentiality requirements that bind NRCS. The participants also advised modifications to 319 and Farm Bill funding for BMPs, asking that approximately 75% of resources be directed only to impaired waters. Others urged allowing investment of a limited amount of 319 funds outside of identified priority 8-digit Hydrologic Unit Code (HUC) watersheds to support promising projects. Reevaluation of existing water quality standards to accurately reflect desired objectives was also proposed. An important suggestion voiced by multiple participants was the adoption of new metrics for pace, to encourage completion of thorough TMDLs and genuine implementation instead of hastily-created documents. Federal guidance on magnitude, duration, and frequency standards was also deemed desirable.

A recommendation reminiscent of the accountability measures contained in the American Recovery and Reinvestment Act (ARRA) would condition the grant of 319 funds on development of a realistic TMDL implementation plan. It was acknowledged that such a measure could severely limit many existing State programs that depend heavily on federal funds. However, it could also promote more optimal allocations of NPS resources.

Participants agreed that the Clean Water Act is not structured appropriately to achieve current water quality goals, especially in the realm of NPS pollution; some participants suggested expanding regulatory authority to include NPS while leaving State agencies enough flexibility to tailor their programs to local and regional characteristics. Another important thought carried over from Mr. Ziegler's earlier presentation was the use of a national NPS demonstration regulatory project to identify and report on regulatory and non-regulatory approaches that have worked at the State and regional level—*prior* to seeking an expansion of federal authority.

Workshop Wrap-Up

John Goodin provided concluding remarks, including an overview of noteworthy actions that both State and federal agencies can take to help ensure successful implementation of NPS controls. Mr. Goodin highlighted the enthusiasm of the attendees at the Workshop, commenting: "I love the passion in this room." He emphasized the importance of leveraging this passion to explore the diverse tools presented during the Workshop that are immediately available for NPS implementation. He also encouraged State agencies to maintain focus on water quality objectives and outcomes.

Mr. Goodin reminded participants that many of the policy proposals suggested in the final sessions of the conference lay outside of the scope of authority of the Executive Branch or EPA. But State and federal officials should ensure that legislators understand the current CWA predicament.

From an EPA perspective, Mr. Goodin noted the importance of State input for EPA to ensure that federal decisions support State water quality initiatives. He indicated that there may be an opportunity for State staff to meet with the new Administration's team about data collection and sharing between USDA and EPA. There are likely to be discussions exploring how to address the "pace-versus-rigor" issue, realigning TMDL and NPS offices in appropriate situations, and addressing downstream responsibilities for States through examples like the Gulf of Mexico hypoxic zone—with States playing an important role. Mr. Goodin also mentioned the importance of continuing to compile examples of what works for addressing NPS impairment through TMDL program, utilizing the listserv maintained by ELI, employing and expanding upon the compilation of suggestions from this Workshop, and creating an updated resource of State NPS authorities.

**Appendix 1:
Nonpoint TMDL Workshop Agenda**



ENVIRONMENTAL LAW INSTITUTE®

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

THE TMDL PROGRAM IN TRANSITION

The NPS Problem: Designing TMDLs for Implementation

National Conservation Training Center
Shepherdstown, West Virginia
May 27-28, 2009

WORKSHOP AGENDA (WITH VISION, GOALS, & OUTPUTS)

**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 learn about—and to discuss with one another and with State and federal counterparts—specific, concrete opportunities for improving all aspects of how State TMDL Programs address impairments resulting at least in part from nonpoint sources.

GOALS

- Identify current best practices in the **development and implementation of “value-added” TMDLs** that effectively address impairments resulting from nonpoint sources of pollution due to agriculture, forestry, and urban runoff.
- Identify and propose solutions with respect to **gaps and barriers in legal and policy authorities** that hinder the ability of State TMDL Programs to effectively address impairments resulting from nonpoint sources.
- Identify **opportunities and obstacles with respect to communication and coordination** among State agencies, and between State and federal agencies, exercising authority over issues pertaining to nonpoint source pollution.
- Identify **opportunities for improving public education** on impairments resulting from nonpoint sources and for **enhancing engagement between State TMDL Programs and stakeholders**.
- Identify approaches for **effectively leveraging and prioritizing existing funds** for the purpose of addressing waters impaired by nonpoint sources.

OUTPUTS

No. 1: A “cookbook” of NPS strategies available to State TMDL Programs—a compilation of tools (including, where available, steps and stages) that States have used to more effectively implement their TMDL Programs with respect to nonpoint sources.

No. 2: A document that captures specific ideas from participants (including consensus language, if any) for changes in TMDL Program policy aimed at improving efforts to address nonpoint source pollution.

AGENDA

Tuesday, May 26

Arrival, Check-In, & Registration

- | | |
|-------------------|--|
| 3:00 pm – 8:00 pm | NCTC Check-In and Workshop Registration
Main Lobby
Murie Lodge |
| 5:30 pm – 7:00 pm | Dinner (Open)
Commons Dining Room |
| 8:00 pm – 9:00 pm | Informal Welcome Reception
Murie Lodge Lounge Area |

Wednesday, May 27

***TMDL Program in Transition: The NPS Problem
Day 1***

6:30 am – 8:00 am

Breakfast (Open)
Commons Dining Room

8:00 am – 8:30 am

Welcome, Introductions, and Workshop Overview
Room 151, Instructional West Building

Greeting and Introductions

Bruce Myers, ELI

Opening Remarks

Benita Best-Wong, EPA

Workshop Overview

Adam Schempp & Sandra Nichols, ELI

8:30 am – 10:00 am

Session #1

**Gaps and Barriers in Law and Policy (Part I): The Divide between
State NPS and TMDL Programs and their Respective Water
Quality Objectives**

Room 151, Instructional West Building

Facilitator

Adam Schempp, ELI

Session Coordinator

Helen Bresler, WA

Panel Presentations and Q&A

**(1) An Integrated Approach to Improving Water Quality—
Indiana’s NPS/TMDL/IR Program**

Andrew Pelloso, IN

**(2) The Continuing Evolution of Stormwater and Watershed
Management in Florida**

Eric Livingston, FL

(3) Nonpoint Source Pollution and TMDLs in Virginia

Nesha Mizel, VA

Session #1 Outcomes:

- *Participants will be familiar with the water quality objectives of some State NPS Programs and how those relate to and are distinct from the objectives of State TMDL Programs.*
- *Participants will be familiar with how integrated TMDL and NPS Programs are working, as compared to when those programs are not integrated.*

Discussion Questions: Are NPS programs seeing the TMDL program as a way of implementing water quality objectives? Are TMDL programs seeing the NPS program as a way of implementing water quality objectives? If not, why not? Do NPS programs work to implement their programs through the TMDL program? Do TMDL programs work to implement their programs through the NPS program? What can TMDL programs do to better coordinate with NPS programs? Are gaps and barriers statutory or legal? At a guidance level? Institutional (*e.g.*, are they a matter of organizational structure or culture)?

10:00 am – 10:30 am

Morning Break
Refreshments Available in Instructional West Building

10:30 am – 12:00 pm

Session #2
Gaps and Barriers in Law and Policy (Part II): The Divide between Federal NPS and State TMDL Programs and their Respective Water Quality Objectives
Room 151, Instructional West Building

Facilitator
Sandra Nichols, ELI

Session Coordinator
Kathy Stecker, NC

Panel Presentations and Q&A

(1) NPS Program Perspectives

Dov Weitman, EPA

(2) NRCS Perspectives

Glenn Carpenter, NRCS

(3) Water Quality Management on National Forest System Lands

Joan Carlson, USFS

Session #2 Outcomes:

- *Participants will better understand the objectives of key federal programs relevant to nonpoint source pollution and how those differ from / are compatible with the objectives of State TMDL Programs.*
- *Participants will be familiar with the perspectives of some federal programs on how coordination with State TMDL Programs may be improved.*
- *Participants will have set the stage for continued discussion among State water quality agencies and federal agencies about how to strengthen coordination and relationships.*

Discussion Questions: How do federal agencies define success (of their respective missions/programs)? How do federal programs with NPS responsibility see their role in addressing water quality problems? Do they believe that they have a responsibility to meet water quality standards? If so, how are they monitoring or evaluating progress? How do they coordinate with States and State TMDL programs? If they do not look to TMDLs, what tools are they using? What will it take to make TMDL implementation a priority for a particular federal agency or program?

What mechanisms could be developed to improve coordination between State water quality agencies and NRCS? Between State agencies and USFS?

How do State TMDL programs work with these federal agencies? What is working well? What is the States' interest level in examining the status of the MOUs between the States and USFS, and in some instances updating them?

12:00 pm – 1:00 pm

Lunch
Commons Dining Room

1:00 pm – 2:30 pm

Session #3
Tricks of the Trade—Processes to Ensure NPS TMDLs Are Implemented (Part I): Among State Programs
Room 151, Instructional West Building

Facilitator
Bruce Myers, ELI

Session Coordinator
Chris Bellucci, CT

Panel Presentations and Q&A

(1) Implementing Kansas NPS-TMDLs: Tricks of the Trade

Tom Stiles, KS

(2) The Massachusetts Estuaries Project: A Collaborative Effort to Protect and Restore Southeastern Massachusetts Embayments

Rick Dunn, MA

(3) The Southwestern Perspective

Jason Sutter, AZ

Session #3 Outcomes:

- *Participants will learn how different States maximize resources for effective TMDL implementation by taking advantage of all water quality programs— including water quality standards, monitoring, 303(d), NPDES, and 319.*
- *Participants will learn about States' institutional structures and strategies for developing and implementing NPS TMDLs, including
 - * *Collaboration*
 - * *Cost-sharing*
 - * *Optimal use of available regulatory authority**
- *Participants will learn how some State TMDL Programs are using relationships with other State agencies to better implement TMDLs that reach NPS pollution.*

Discussion Questions: How can TMDLs be written for ease of translation into 319 watershed plans (or other implementation mechanisms, such as through agricultural programs)? Would one of the features of a good TMDL be that it would include enough detailed information to allow enforcement (under existing authority)? For implementation efforts, to what extent do NPS programs rely on available TMDLs? Are TMDL programs partnering with local governments for implementation purposes? How common is water quality trading, and with what success? Are TMDL programs able to focus resources on geographic areas known to contribute to loading problems?

2:30 pm – 3:00 pm

Afternoon Break

Refreshments Available in Instructional West Building

3:00 pm – 4:30 pm

Session #4

Tricks of the Trade—Processes to Ensure NPS TMDLs Are Implemented (Part II): State-Federal Relationship

Room 151, Instructional West Building

Facilitator
Adam Schempp, ELI

Coordinator
Gene Foster, OR

Panel Presentations and Q&A

(1) TMDLs, Implementation, and Gatorade®: The Benefits of Knowing Your Customer

Dean Maraldo, EPA R5

(2) Implementing NPS TMDLs—Iowa’s New Strategy for Success

Allen Bonini, IA

(3) The Texas Perspective

Aaron Wendt, TX

Session #4 Outcomes:

- *Participants will learn how some State TMDL Programs are using relationships with federal agencies to improve the development and implementation of TMDLs that reach NPS pollution.*
- *Participants will be familiar with how State and federal agencies, including EPA, see the future of NPS pollution and the potential role of State TMDL Programs.*

Discussion Questions: What processes are used to guide implementation? For implementation efforts, do federal programs rely on available TMDLs? For implementation efforts, what agencies or funding mechanisms do you rely on? What actions can be taken at the State and federal levels to develop TMDLs and watershed plans that better support implementation?

4:30 pm – 5:00 pm

Day 1 Wrap-Up

Room 151, Instructional West Building

Facilitator
Sandra Nichols, ELI

EPA Remarks

John Goodin, EPA

5:00 pm – 6:00 pm

Open

6:00 pm – 7:00 pm

Dinner
Commons Dining Room

7:00 pm – 8:00 pm

Informal Evening Session
Effectively Leveraging and Prioritizing Existing Funds to Address
Waters Impaired by Nonpoint Sources of Pollution
Guest Lodge Lounge Area

Facilitator
Bruce Myers, ELI

Resource Persons
Benita Best-Wong, EPA
Stephanie vonFeck, EPA

Evening Session Outcome:

Participants will have learned about strategies for leveraging existing funds from federal programs and other sources. Specific focus will be placed on obstacles to and opportunities for targeting resources.

Thursday, May 28	<i>TMDL Program in Transition: The NPS Problem Day 2</i>
-------------------------	---

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

8:00 am – 9:00 am **Session #5**
**Best Practices in Developing and Implementing TMDLs that
Reach NPS Pollution (Part I)**
Room 151, Instructional West Building

Facilitator
Adam Schempp, ELI

Session Coordinator
Nicole Richmond, WI

Panel Presentations and Q&A

(1) The Wisconsin Perspective
Corinne Billings, WI

(2) It Takes More than a Good TMDL to Get to Implementation
Helen Bresler, WA

(3) NPS Regulation in California: Looking for the “Third Wave”
Sam Ziegler, EPA R9

9:00 am – 10:00 am **Session #6**
**Best Practices in Developing and Implementing TMDLs that
Reach NPS Pollution (Part II)**
Room 151, Instructional West Building

Facilitator
Sandra Nichols, ELI

Session Coordinator
Jason Sutter, AZ

Panel Presentations and Q&A

**(1) TMDL Implementation in Oregon: Leveraging Resources to
Meet Enforceable Requirements**
Mike Wolf, OR

(2) TMDL NPS Implementation in Maryland
Jim George, MD

(3) Regulating (Or Not) NPS in North Carolina
Kathy Stecker, NC

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

10:30 am – 11:00 am **Session #7**
Best Practices in Developing and Implementing TMDLs that Reach NPS Pollution (Part III): Plenary Discussion
Room 151, Instructional West Building

Facilitator
Sandra Nichols, ELI

Session #s 5-7 Outcomes:

- *Participants will be familiar with the foundation of various States' NPS implementation authority and how that authority has evolved.*
- *Participants will be familiar with how States have implemented NPS TMDLs, including the use of any available enforcement authorities and approaches.*

Discussion Questions: How have States developed their most successful approaches with respect to implementation and enforcement authority? What stumbling blocks were encountered, and how were they overcome (if they were)? How have proponents of strong implementation authority lined up the necessary support—and overcome political opposition? Do implementation requirements allow us to achieve water quality goals vis-à-vis NPS pollution? Can we accomplish water quality goals vis-à-vis NPS pollution without implementation requirements? For implementation efforts, do States rely on available TMDLs? How can TMDLs be written for ease of translation into 319 watershed plans (or other implementation mechanisms, such as through agricultural programs)?

11:00 am – 12:00 pm **Session #8**
Opportunities for Public Outreach and Enhancing Engagement between State TMDL Programs and Stakeholders
Room 151, Instructional West Building

Facilitator
Bruce Myers, ELI

Session Coordinator
Trinka Mount, OH

Panel Presentations and Q&A

(1) Missouri's Approach to Public Participation: Making Opportunities

Anne Peery, MO

(2) Implementing a TMDL through Stakeholder Involvement in Lake Hopatcong, New Jersey

Kim Cenzo, NJ

Session #8 Outcomes:

- *Participants will be familiar with a range of approaches employed by other States to improve public education and outreach—and better understand what is working, what is not, and what is still needed.*
- *Participants will have a sense of the pros and cons of employing these approaches in their States and an understanding of likely obstacles—and changes that will be needed to make the approaches work.*
- *Participants will be familiar with how some States have improved their relationships with local governments and other key stakeholders in the process of implementing TMDLs designed to address waters impaired by nonpoint sources of pollution.*
- *Participants will know which States (and State representatives) can serve as resources with respect to specific approaches.*

Discussion Questions: At what stage in the process are successful States and programs reaching out to stakeholders? How? With what approach, and to whom, exactly—a pre-existing group, a group created for this TMDL, or some other subset of people? What models are used? How, and to what extent? Does the State require a particular process (*e.g.*, by law, regulation, or guidance)? Is implementation more effective with public involvement? Are there opportunities for broader education on water quality objectives?

12:00 pm – 1:00 pm

Lunch
Commons Dining Room

1:00 pm – 2:00 pm

Session #9
A Blueprint for Success: Directing Workshop Output No. 1
Room 151, Instructional West Building

Facilitator
Adam Schempp, ELI

Session Coordinators
Helen Bresler, WA & Kim Cenzo, NJ

Session #9 Outcome:

Progress toward a “cookbook” of NPS strategies available to State TMDL Programs—a document that compiles tools (including, where possible, steps and stages) that States have used to more effectively implement their TMDL Programs with respect to nonpoint sources.

2:00 pm – 2:30 pm

Afternoon Break
Refreshments Available in Instructional West Building

2:30 pm – 3:30 pm

Session #10
A Blueprint for Success: Directing Workshop Output No. 2
Room 151, Instructional West Building

Facilitator
Sandra Nichols, ELI

Session Coordinators
Helen Bresler, WA & Kim Cenzo, NJ

Session #10 Outcome:

Progress toward a document that captures specific ideas from participants (including consensus language, if any) for changes in TMDL Program policy aimed at improving efforts to address nonpoint source pollution.

3:30 pm – 4:00 pm

Workshop Wrap-Up
Room 151, Instructional West Building

Facilitator
Bruce Myers, ELI

EPA Remarks

John Goodin, EPA

	<i>NCTC Check-Out & Departure</i>
--	--

4:30 pm

Departure of Shuttle Bus for

- Dulles Airport (participants with Thursday evening flights); and
- Holiday Inn Washington-Dulles (participants with Friday flights)

**Appendix 2:
Participant List**

**THE TMDL PROGRAM IN TRANSITION
The NPS Problem:
Designing TMDLs for Implementation**

National Conservation Training Center
Shepherdstown, West Virginia
May 27-28, 2009

State Participants

Jason Sutter

Arizona Department of
Environmental Quality
1110 W. Washington Street
Phoenix, AZ 85007
602-771-4468
sutter.jason@azdeq.gov

Eric Livingston

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

Chris Bellucci

Connecticut Department of
Environmental Protection
Bureau of Water Protection, Land Reuse
79 Elm Street
Hartford, CT 06106
860-424-3735
christopher.bellucci@ct.gov

Alec Wong

Hawaii Department of Health
Clean Water Branch
919 Ala Moana Blvd., Room 301
Honolulu, HI 96825
808-586-4309
alec.wong@doh.hawaii.gov

Lyle Jones

Delaware Department of Natural
Resources and Environmental Control
Division of Water Resources
820 Silver Lake Blvd., Suite 220
Dover, DE 19904-2464
302-739-9939
lyle.jones@state.de.us

Andrew Pelloso

Indiana Department of
Environmental Management
100 N. Senate Ave.
MC 65-42 IGCN 1255
Indianapolis, IN 46204
317-233-2481
apeloso@idem.in.gov

Allen Bonini

Iowa Department of
Natural Resources
Wallace Building
502 E. 9th Street
Des Moines, IA 50319-0034
515-281-5107
allen.bonini@dnr.iowa.gov

Tom Stiles

Kansas Department of
Health and Environment
1000 S. Jackson Street, Suite 420
Topeka, KS 66612
785-296-6170
tstiles@kdheks.gov

Jim George

Maryland Department of Environment
Science Services Administration
1800 Washington Boulevard
Baltimore, MD 21230
410-537-3902
jgeorge@mde.state.md.us

Rick Dunn

Massachusetts Department of
Environmental Protection
Bureau of Resource Protection
Division of Watershed Management
627 Main Street, 2nd Floor
Worcester, MA 01608
508-767-2874
dennis.dunn@state.ma.us

Christine Alexander

Michigan Department of
Environmental Quality
P.O. Box 30273
Lansing, MI 48909
517-373-6794
alexanderc2@michigan.gov

Greg Jackson

Mississippi Department of
Environmental Quality
P.O. Box 2261
Jackson, MS 39225-2261
601-961-5098
Greg.Jackson@deq.state.ms.us

Anne Peery

Missouri Department of
Natural Resources
Water Protection Program
1101 Riverside Drive
Jefferson City, MO 65101
573-526-1426
anne.peery@dnr.mo.gov

Kimberly Cenno

New Jersey Department of
Environmental Protection
P.O. Box 418
Trenton, NJ 08625
609-633-1441
kimberly.cenno@dep.state.nj.us

Doug Eib

New Mexico Environment Department
Surface Water Quality Bureau
Monitoring and Assessment Section
P.O. Box 26110
Santa Fe, NM 87502
505-827-0106
doug.eib@state.nm.us

Kathy Stecker

North Carolina Division of Water
Quality
1617 Mail Service Center
Raleigh, NC 27699
919-807-6422
kathy.stecker@ncdenr.gov

Trinka Mount

Ohio Environmental Protection Agency
50 West Town Street
Columbus, OH 43216-1049
614-644-2140
trinka.mount@epa.state.oh.us

Gene Foster

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

Mike Wolf

Oregon Department of
Environmental Quality
165 East 7th Ave., Suite 100
Eugene, OR 97401-3049
541-686-7848
wolf.mike@deq.state.or.us

Mihir Mehta

South Carolina Department of
Health and Environmental Control
2600 Bull Street
Columbia, SC 29201
803-466-5126 or 809-898-4011
mehtam@dhec.sc.gov

Aaron Wendt

Texas State Soil and Water
Conservation Board
PO Box 658
Temple, TX 76503
254-773-2250
awendt@tsswcb.state.tx.us

Carl Adams

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

Nesha Mizel

Virginia Department of
Conservation and Recreation
44 Sangers Lane, Suite 102
Staunton, VA 24401
540-332-9238
nesha.mizel@dcr.virginia.gov

Helen Bresler

Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600
360-407-6180
hbre461@ecy.wa.gov

Corinne Billings

Wisconsin Department of
Natural Resources
101 S. Webster Street WT/3
Madison, WI 53707-7921
608-264-6261
corinne.billings@wisconsin.gov

Federal Participants

EPA Headquarters

Benita Best-Wong

Director
Assessment and Watershed
Protection Division
USEPA Headquarters
1200 Pennsylvania Avenue, N.W.
Mail Code: 4503T
Washington, DC 20460
202-566-1159
best-wong.benita@epa.gov

John Goodin

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

Yu-Ting Guilaran

Acting Associate Division Director
Assessment and Watershed
Protection Division
USEPA Headquarters
1200 Pennsylvania Avenue, N.W.
Mail Code: 4503T
Washington, DC 20460
202-546-1154
guilaran.yu-ting@epa.gov

Mike Haire

Watershed Branch
USEPA Headquarters
1200 Pennsylvania Avenue, N.W.
Mail Code: 4503T
Washington, DC 20460
202-566-1224
haire.michael@epa.gov

Menchu Martinez

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

Eric Monschein

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

Christine Ruf

Watershed Branch
USEPA Headquarters
1200 Pennsylvania Avenue, N.W.
Mail Code: 4503T
Washington, DC 20460
202-566-1220
ruf.christine@epa.gov

Stephanie vonFeck

Clean Water State Revolving Fund
Green Project Reserve Team Leader
USEPA
1200 Pennsylvania Avenue, N.W.
Mail Code: 4204M
Washington, DC 20460
202-564-0609
Vonfeck.stephanie@epa.gov

Dov Weitman
Chief
Nonpoint Source Protection Branch
USEPA Headquarters
1200 Pennsylvania Avenue, N.W.
Mail Code: 4503T
Washington, DC 20460
202-566-1207
weitman.dov@epa.gov

EPA Regions

Tom Davenport
Region 5
77 West Jackson Boulevard
Mail Code: WW-16J
Chicago, IL 60604
312-886-0209
davenport.thomas@epa.gov

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

Bill Melville
Region 4
61 Forsyth Street
Mail Code: 15-PCIB
Atlanta, GA 30303
404-562-9266
melville.william@epa.gov

Jim Ruppel
Region 8
1595 Wynkoop Street
Denver, CO 80202
303-312-6846
ruppel.james@epa.gov

Fred Suffian
Region 3
1650 Arch Street
Philadelphia, PA 19103
215-814-5753
Suffian.Fred@epamail.epa.gov

Sam Ziegler
Region 9
75 Hawthorne Street
San Francisco, CA 94105
415-972-3399
ziegler.sam@epa.gov

Natural Resources Conservation Service

Glenn Carpenter
USDA Natural Resources Conservation
Service
5601 Sunnyside Ave
Beltsville, MD 20705
301-504-2208
glenn.carpenter@wdc.usda.gov

Forest Service

Joan Carlson
US Forest Service
Rocky Mountain Region
740 Simms St
Golden, CO 80401
303-275-5097
jycarlson@fs.fed.us

ELI Staff

Annie Brock

Research Associate
2000 L Street, N.W.
Suite 620
Washington, DC 20036
202-939-3862
brock@eli.org

Bruce Myers

Senior Attorney
2000 L Street, N.W.
Suite 620
Washington, DC 20036
202-939-3809
myers@eli.org

Sandra Nichols

Staff Attorney
2000 L Street, N.W.
Suite 620
Washington, DC 20036
202-939-3828
nichols@eli.org

Adam Schempp

Staff Attorney
2000 L Street, N.W.
Suite 620
Washington, DC 20036
202-939-3864
schempp@eli.org

Philip Womble

Research Intern
2000 L Street, N.W.
Suite 620
Washington, DC 20036
202-939-3859
womble@eli.org

Appendix 3: A Nonpoint Source “Cookbook” for State TMDL Programs

Recipes for More Effectively Addressing Nonpoint Source
Impairments through the TMDL Program⁴

Table of Contents

1. Developing TMDLs.....	45
A. Develop TMDLs using good science and detailed nonpoint information	45
i. Model to the appropriate level.....	45
ii. Designate a load allocation for the objective	45
iii. Give explicit directions: where, how, and by when	45
B. Package the TMDL strategically.....	45
i. Make data understandable to a wider audience.....	45
ii. Push technical information into appendices	46
iii. Present data in a way that maximizes collaboration.....	46
2. Bridging the Divide between Development and Implementation	47
A. Include an implementation plan with each TMDL.....	47
B. Keep the TMDL science-based—and politics-free	47
C. Integrate TMDL development and implementation.....	47
i. Combine TMDL and 319 programs	47
ii. Establish an MOU between agencies responsible for developing and implementing TMDLs	48
D. Prioritize use of funds to support TMDL implementation.....	48
E. Incorporate land use into TMDL implementation	49
3. Implementing TMDLs	49
A. Develop implementation guidance	49
B. Implement with active partners.....	50
i. Target implementation where groups are active	50
ii. Require implementing municipalities to commit funds.....	50
iii. Work with the implementing institution to create the plan	50
C. Craft implementation plans strategically.....	50
i. Create technical and public versions of implementation plans	50
ii. Focus on source controls	51
D. Promote effective and sustained implementation.....	51
i. Hire a farmer to conduct outreach.....	51
ii. Recognize incremental improvements	51
iii. Choose meaningful indicators	52
iv. Capitalize on momentum.....	52

⁴ This Appendix sets forth the initial iteration of what ELI intends to maintain as a living document. New entries will be included—and details added—as additional examples and information become available.

E. Use Economic Incentives	52
i. Shape the message	52
ii. Tailor eligibility for grant funding.....	52
F. Plan for the long-term	53
i. Implement over the long-term	53
ii. Designate local coordinators to move and sustain projects	53
G. Establish direct coordination with other implementing agencies	53
i. Craft an MOU with another agency	53
ii. Join the NRCS State Technical Advisory Committee (STAC)	54
iii. Coordinate with local universities	54

1. Developing TMDLs

A. Develop TMDLs using good science and detailed nonpoint information

i. Model to the appropriate level

Depending upon the circumstances, you may have to develop detailed, site-specific models for certain NPS—particularly where there are many contributing sources, such as septic system impacts to local embayments. Note that in some instances, this approach could be a waste of time—as with bacteria impacts, where bacteria source identification is more important than development of models.

Rick Dunn, MassDEP (dennis.dunn@state.ma.us, 508-767-2874)

ii. Designate a load allocation for the objective

WLAs must be translatable into effluent limits—the idea we’re going to try for nonpoint is to use the necessary BMPs as a surrogate for a load allocation, so instead of saying in the TMDL that the load allocation is a 90% reduction of fecal coliform, we say that the load allocation is to implement the specific BMPs that will achieve compliance.

Helen Bresler, WA DOE (hbre461@ecy.wa.gov, 360-407-6180)

iii. Give explicit directions: where, how, and by when

TMDLs need to inform NPS and watershed plans by presenting specific information on current conditions, necessary load reductions, likely contributing areas, hydrologic context of impairing pollutants, necessary programs, practices, and placement, and an accurate timeline over which implementation will be accomplished and water quality improvements seen—with attainment of standards the goal.

Tom Stiles, KS (tstiles@kdheks.gov, 785-296-6170)

B. Package the TMDL strategically

i. Make data understandable to a wider audience

Make data more understandable for key audiences beyond EPA (e.g., end users, the legislature). We tend to do a very good job on the kinds of technical analysis in TMDL development that are required to secure EPA approval. However, very little of this information is usually needed by those that will actually be implementing the TMDL, or useful to decision-makers at higher levels of government. In addition, many of our TMDLs are being written for temperature, with time horizons for meeting the TMDL load allocations on the order of decades. A TMDL should include information that is understandable by and readily accessible to the people who will actually be working with the TMDL. TMDL load allocations should be linked to both administrative measures (number of stream miles

restored, number of grant dollars spent in a watershed, etc.) and environmental measures (temperature of stream, recovery of fish populations, etc.) .

Gene Foster, OR DEQ (foster.eugene.p@deq.state.or.us, 503-229-5325)

Mike Wolf, OR DEQ (wolf.mike@deq.state.or.us; 541-686-7848)

ii. Push technical information into appendices

First, we have developed a Document Template and a Style Guide for our TMDL reports so that there is consistency in the look, feel, and readability across all reports, regardless of authorship. As for the documents themselves, they all start with a Report Summary which is purposefully written in simple, understandable language that can be read by the casual reader who wants to get the essence of the report. In this section we pose and answer a series of simple questions:

1. What is the purpose of this report?
2. What's wrong with the [waterbody name]?
3. What is causing the problem?
4. What can be done to improve the [waterbody name]?
5. Who is responsible for a cleaner [waterbody name]?

This is immediately followed by a table that lists and addresses the EPA required elements of an approvable TMDL, with references to pages and tables within the report where specific numeric values for the WLA, WLALA, etc., can be easily found. We try as best we can to keep the language in the main body of the report as simple and straightforward as possible. Any complex or highly technical modeling or analysis is placed in the appendix and the reader is referred to the appendix for further technical detail. We also include a brief Implementation Section, which generally describes the kinds of actions that will need to be taken in order to achieve the NPS reductions called for in the report, along with language encouraging readers to take the next steps and develop and implement a Watershed Management Plan. Finally, the Monitoring Section articulates both the planned ongoing monitoring efforts (if any) and a framework for an “ideal” monitoring plan (one that assumes sufficient resources are available to be deployed in the watershed). The appendix includes a Glossary of Terms and Acronyms for readers who may not be as familiar as we are with some of the jargon of TMDLs.

Allen Bonini, IA DNR (allen.bonini@dnr.iowa.gov, 515-281-5107)

iii. Present data in a way that maximizes collaboration

In our estuaries project, the individual towns within common watersheds sought separate allocations for each town. We realized that taking such an approach could result in more costly solutions, as opposed finding

solutions on a watershed basis. As a result, we allocated loads by watershed and subwatershed to force the towns to work together to find the most cost-effective solution. The loadings are done by watershed, not by town, compelling the towns to work with their neighbors rather than point fingers.

Rick Dunn MassDEP (dennis.dunn@state.ma.us, 508-767-2874)

2. Bridging the Divide between Development and Implementation

A. Include an implementation plan with each TMDL

In Oregon, the TMDL implementation plan is adopted as part of the TMDL. The TMDL is issued as a department order to all responsible parties (known as “Designated Management Agencies”) and spells out specific TMDL implementation requirements for them to follow. Oregon was fortunate to have legal authorities developed in the early 1990s that define how TMDLs will be addressed for the agricultural sector. If DEQ does not approve of Oregon Forestry or Ag Department efforts to implement TMDLs, there is a statutorily-prescribed appeals process. Oregon has enforceable authorities—including for nonpoint sources—across all land uses.

Gene Foster, OR DEQ (foster.eugene.p@deq.state.or.us, 503-229-5325)

Mike Wolf, OR DEQ (wolf.mike@deq.state.or.us, 541-686-7848)

B. Keep the TMDL science-based—and politics-free

TMDL development arises from objective scientific analysis, whereas implementation planning can be subject to various political pressures. Don’t mix the two, because the implementation planning process can politicize the technical TMDL analysis.

Jim George, MDE (jgeorge@mde.state.md.us, 410-537-3902)

C. Integrate TMDL development and implementation

i. Combine TMDL and 319 programs

The Watershed Planning Unit in the Department of Ecology’s (DOE) Water Quality Program is responsible for oversight of both the TMDL and Nonpoint Programs. As our focus turned more and more toward nonpoint pollution, and as more of our TMDLs began to address nonpoint problems, it became clear that our way of doing business was neither practical nor logical. We have made changes to merge the two programs and make them more effective:

- We consider an array of solutions, including using enforcement, trying a “straight-to-implementation” strategy, going directly to source identification without setting load allocations, or doing either a “streamlined” or conventional TMDL.

- We are revising State Environmental Policy Act (SEPA) guidance to require that TMDLs be considered during SEPA review.
- We are revising our TMDL templates to add language that makes it clear that DOE's TMDLs, including nonpoint TMDLs, are enforceable under State law.
- We are focusing our nonpoint program on producing results, so we are placing more emphasis on implementation. Our 319 grant from EPA will be increasingly directed toward on-the-ground best management practices that will have a measurable water quality benefit.
- We are working to capture the knowledge we've gained from doing nonpoint TMDLs and to use it to establish minimum standards for various land uses that generate nonpoint pollution.
- We are examining the State's forest practice rules to evaluate their ability to effectively protect water quality.

See the document on *Merging the 319 and TMDL programs* (available on ELI's *State TMDL Program Resource Center* website) for further details of the efforts undertaken so far.

Helen Bresler, WA DOE (hbre461@ecy.wa.gov, 360-407-6180)

ii. Establish an MOU between agencies responsible for developing and implementing TMDLs

Virginia Department of Environmental Quality (VDEQ) and Virginia Department of Conservation and Recreation (VA DCR) have in place an MOU concerning TMDL development and implementation. VDEQ conducts TMDL studies, and VDCR does implementation plans when dealing with NPS pollution (through the MOU).

Nesha McRae, VA DCR (nesha.mcrae@dcr.virginia.gov, (540) 332-9238)

D. Prioritize use of funds to support TMDL implementation

We revised our SRF/319 priority ranking system to give higher priority to projects designed to implement BMPs where a segment was already on the 303(d) list, was a direct result of implementation of a watershed action plan, or was in response to a TMDL.

Rick Dunn MassDEP (dennis.dunn@state.ma.us, 508-767-2874)

We actively use funding to implement BMPs and TMDLs instead of allowing external agencies to apply for any water quality project they want to do, and we use 319 clean water management measures as the goals for the TMDL program. The TMDL goal is no longer to produce TMDLs; it's to produce clean water.

See *2008 Strategy Soiree instructions* (available on ELI's *State TMDL Program Resource Center* website) for the initial vision of moving from dirty water to clean water.

Helen Bresler, WA DOE (hbre461@ecy.wa.gov, 360-407-6180)

The ranking criteria in all of our State funding programs (SRF, TMDL grants, 319 grants) provide higher priority to projects that will reduce pollutant loads to impaired waters. A hierarchical system is used with higher priority for projects contained in TMDL implementation plans than for projects discharging to waters with an adopted TMDL, and finally for projects discharging to waters on the adopted Impaired Waters List.

Eric Livingston, FL DEP (eric.livingston@dep.state.fl.us, 850-245-8430)

E. Incorporate land use into TMDL implementation

Consider land use planning as a first step of TMDL implementation planning: proper choices of land development on the front end makes it easier on the back end to avoid difficult wetlands, forest, and stormwater-management issues.

Jim George, MDE (jgeorge@mde.state.md.us, 410-537-3902)

Develop site-specific BMPs based on land use information, the cost, the expected load reduction, the prescribed schedule, and the priorities for implementation in the watershed. Set milestones for recovery in the watershed.

Steve Lathrop, PA DEP (slathrop@state.pa.us, 717-772-5618)

3. Implementing TMDLs

A. Develop implementation guidance

Washington State has developed *guidance* (available on ELI's *State TMDL Program Resource Center* website) on the nine key elements of a TMDL implementation plan.

Helen Bresler, WA DOE (hbre461@ecy.wa.gov, 360-407-6180)

Massachusetts has developed implementation guidance on ways to address septic systems, including the development of sewage districts. (see Embayment Restoration and Guidance for Implementation Strategies at <http://www.mass.gov/dep/water/resources/coastalr.htm>)

Rick Dunn MassDEP (dennis.dunn@state.ma.us, 508-767-2874)

Distinguish between (1) guidance for developing “implementation plans,” and (2) guidance for changing routine operating procedures for State and local government planning and decisions to ensure consistency with TMDLs.

Jim George, MDE (jgeorge@mde.state.md.us, 410-537-3902)

B. Implement with active partners

i. Target implementation where groups are active

A key criterion for selecting watersheds for implementation plans and 319 funding is the presence of an active group. When groups have already conducted assessments or even conducted some planning, this helps with meeting funding responsibilities.

Steve Lathrop, PA DEP (slathrop@state.pa.us, 717-772-5618)

ii. Require implementing municipalities to commit funds

In our estuaries project, we wanted to create long-term buy-in to the project—which is ultimately necessary to achieve environmental goals. As a result, we required a 50% cost share for the project. We also required a minimum of three years of data collection in each estuary in order to be prioritized and eligible for the project. In most cases, the towns sub-contracted directly with our university partners to collect the baseline data, the cost of which contributed towards the 50% cost share. Once in the project, the towns had a vested interest in seeing the project through to completion.

Rick Dunn, MassDEP (dennis.dunn@state.ma.us, 508-767-2874)

iii. Work with the implementing institution to create the plan

Partner with watershed associations, conservation districts, or municipalities to develop an implementation plan that addresses the community’s need—either to implement a TMDL or to preempt one. The group creates a roadmap, and the agency provides funding and technical assistance. Technical information fits within the context of the plan.

Steve Lathrop, PA DEP (slathrop@state.pa.us, 717-772-5618)

C. Craft implementation plans strategically

i. Create technical and public versions of implementation plans

Virginia has begun developing a more abbreviated and visually appealing version of the technical TMDL Implementation Plan for public distribution. It was clear that in the past, very few people within the local communities where we had developed implementation plans had the time to read the lengthy technical documents that we were producing. In the public

documents, we now include numerous pictures of the practices that we are recommending for the watershed, along with photos of the streams and land uses in the watershed. If a landowner is interested in more detailed information, such as model output, then he or she can be referred to the technical document.

Nesha McRae, VA DCR (nesha.mcrae@dcr.virginia.gov, 540-332-9238)

ii. Focus on source controls

It is much easier to prevent pollutants from entering the water than to treat the water. Therefore, focus on source controls whenever possible.

Eric Livingston, FL DEP (eric.livingston@dep.state.fl.us, 850-245-8430)

D. Promote effective and sustained implementation

i. Hire a farmer to conduct outreach

We have found that farmers like to receive information from other farmers. Consequently, hiring a farmer or someone with a farming background to conduct outreach for implementing agricultural BMPs seems to work best. Hiring a local farmer is even better (provided that the farmer is respected in the community and has implemented BMPs on his or her own farm).

Nesha McRae, VA DCR (nesha.mcrae@dcr.virginia.gov, 540-332-9238)

ii. Recognize incremental improvements

Given that it can take years, or even decades, to obtain sufficient water quality data to be able to delist an impaired segment or waterbody, there needs to be a mechanism to recognize incremental improvements in water quality that occur in the interim. This recognition of incremental improvement is important not only for regulators, but also for maintaining local watershed momentum and for satisfying institutional needs to demonstrate that resource allocation is having a positive effect on water quality. This has prompted us to set aside about ten percent of our annual 319 incremental funds to support ongoing monitoring in watersheds where there are active efforts to address NPS pollution. The goal of this monitoring effort is to demonstrate incremental improvements in water column water quality that may fall short of the level of improvement needed to warrant a delisting. This improvement may come in the form of increasing trends in water quality, or perhaps even in a change in the slope of the curve for the water quality data that is collected. Alternatively, it may track water quality improvement in just one or two tributaries within the watershed where NPS BMPs are being targeted to address the most critical contributing sources. While these tributaries may show improvement in the near term, the improvement may not be quantifiable in the larger watershed context until many years into the future. We are also

exploring the possible development and use of some sort of water quality index to measure and track incremental improvement in water quality at this scale (typically a HUC-12).

Allen Bonini, IA DNR (allen.bonini@dnr.iowa.gov, 515-281-5107)

iii. Chose meaningful indicators

Use indicators to which the public in the watershed can relate. Think of water quality standards in terms of uses, not just criteria. Track required activities and monitor water quality—but wait to draw conclusions on cause and effect until you are confident you can discern the signal of program influence amidst the inherent background noise of water quality data.

Tom Stiles, KS DEH (tstiles@kdheks.gov, 785-296-6170)

iv. Capitalize on momentum

To help ensure the long-term success of BMPs—and thereby actually accomplish our water quality goals—Virginia has worked to publicize the success of farmers, not the State and its objectives. When the creek improves, Virginia recognizes the contributors; money from various programs seems to follow, and the community is receptive. There has been an ownership of their success and profitability. With increasing community momentum and widespread notoriety (honors) comes a greater interest on the part of farmers in reducing pollution, that is, “doing their part.” Where this has been successful, farms are smaller and communities are tightly-knit.

Nesha McRae, VA DCR (nesha.mcrae@dcr.virginia.gov, 540-332-9238)

E. Use Economic Incentives

i. Shape the message

Emphasize how implementation measures will save stakeholders money and beneficially affect their productivity, rather than dwelling on the State’s water quality goals.

Nesha McRae, VA DCR (nesha.mcrae@dcr.virginia.gov, 540-32-9238)

ii. Tailor eligibility for grant funding

Washington has narrowed eligibility for grant funding of BMPs to those that we know achieve compliance with water quality standards. Previously, we funded anything that had a “water quality benefit.” For now, our eligibility criteria apply to grants only because very few applicants want a loan to deal with nonpoint problems, since there are no ratepayers to help repay the loan. However, we are working to make purchase of direct seed

drills attractive in the loan program by allowing conservation districts to purchase the drills with a loan and pay off the loan by renting the drill to farmers.

Agricultural practices that are eligible in our grant programs are described in *Additional BMP Eligibility* (available on ELI's *State TMDL Program Resource Center* website).

Helen Bresler, WA DOE (hbre461@ecy.wa.gov, 360-407-6180)

F. Plan for the long-term

i. Implement over the long-term

Implement over a long period of time (up to 15 years). Florida divides its TMDL implementation plans into five-year blocks (consistent with its rotating basin approach).

Eric Livingston, FL DEP (eric.livingston@dep.state.fl.us, 850-245-8430)

ii. Designate local coordinators to move and sustain projects

The scarcity of technical assistance for planning and administering good water quality projects is a major impediment to achieving TMDL water quality goals. To facilitate the implementation, monitoring, and reporting of high-priority water quality improvement projects in TMDL watersheds, we have found success in financially supporting and training local watershed coordinators through cooperative arrangements with partner agencies such as conservation districts and University Extension offices. Local coordinators also serve as effective marketing agents with landowners to implement water quality projects. Prior to initiating this program, funding was essentially provided on a first-come, first-served basis with little consideration of the effectiveness of the project and more on landowner willingness to participate. The primary challenges associated with this program are retaining qualified and motivated coordinators and maintaining their focus on TMDL implementation while leading more holistic watershed planning efforts. However, through regular training workshops and Statewide Watershed Coordinating Council meetings, we have cultivated a group of dedicated and enthusiastic proponents for water quality throughout the State.

Carl Adams, UT DWQ (carladams@utah.gov, 801-538-9215)

G. Establish direct coordination with other implementing agencies

i. Craft an MOU with another agency

In Oregon, MOUs with federal land managers have added clarity and direction as to how land managers and regulators can work together towards common goals. An MOU can specify management actions or

reference BMP guides, and it can provide for conflict resolution. Having in place written agreements that outline the agencies' working relationship, the nature of overlapping authorities, and who is responsible for what is an effective means of maintaining institutional knowledge.

Gene Foster, OR DEQ (foster.eugene.p@deq.state.or.us, 503-229-5325)
Mike Wolf, OR DEQ (wolf.mike@deq.state.or.us; 541-686-7848)

During the mid-to-late 1990's, there was an effort undertaken to develop cooperative agreements (MOUs, Intergovernmental Agreements (IGAs), Memoranda of Agreement (MOAs), etc.) among various entities in Arizona. These included tribes, federal and State land managers, and non-governmental organizations. Although, historically, seven agreements were reached, only the MOU with USFS remains current.

The spirit of the agreement is to keep the lines of communication open between the Arizona Department of Environmental Quality (ADEQ) Nonpoint Source (NPS) programs and the various interested parties. ADEQ meets annually with USFS personnel to discuss the ongoing NPS activities of each agency. Communication between the individual project managers continues throughout the year with the coordination of sampling efforts, project updates, and the general sharing of information.

ADEQ is currently reintroducing the concept of cooperative agreements with a variety of groups across the State to build upon the success of the USFS MOU.

Jason Sutter, AZ (Sutter.Jason@azdeq.gov, 602-771-4468)

ii. Join the NRCS State Technical Advisory Committee (STAC)

While some States have concluded that participation was a potential political liability, several States, such as Florida, have participated fruitfully. Iowa has a number of staff that sit on the STAC and/or are actively involved on various subcommittees (as chairs or members).

Eric Livingston, FL DEP (eric.livingston@dep.state.fl.us, 850-245-8430)
Allen Bonini, IA DNR (allen.bonini@dnr.iowa.gov, 515-281-5107)

iii. Coordinate with local universities

The coordination between the Arizona Department of Environmental Quality (ADEQ) Surface Water programs and the State's universities has been very successful. The university contacts have provided a wide range of services, from informal presentations at watershed group meetings to TMDL model development. Contracts with universities typically cost less than a comparable contract with a consulting firm. Professors and their students offer specialized technical expertise and sampling experience,

and they often have specific local watershed knowledge from previous investigations.

Prior to being closed due to the current State budget shortfalls, the Arizona Water Institute (AWI) combined the expertise of Arizona's water managers with the resources of the three universities to support water resources management and technology development in real-world applications. This unique partnership—which also included three State agencies, Water Resources (ADWR), Environmental Quality (ADEQ), and Commerce (ADoC)—was formed to provide access to hydrologic information, support communities, and develop technologies to promote water sustainability.

The 319 program has also tapped the university system by providing funding for the Nonpoint Education for Municipal Officials (NEMO) and Master Watershed Stewards (MWS) Programs. NEMO activities include developing watershed-based plans for the ten major surface watersheds in Arizona, providing technical assistance to watershed groups and municipalities, and maintaining a GIS Internet Mapping Service (IMS) website. The NEMO plans and website are extensively used by watershed groups as they develop 319 grant applications. MWS educates local residents on watershed function and health with the goal of producing a trained group of citizens to undertake watershed improvement projects.

Jason Sutter, AZDEQ (Sutter.Jason@azdeq.gov, 602-771-4468)

To address nutrient impairments in our southeast coastal areas, we developed a collaborative partnership with the local university (UMass-Dartmouth School of Marine Science) as well as local planning agencies. Each participating group played a role in the development of the technical analysis and ultimately the TMDL. The university trained local groups (with a QAPP) to collect baseline data and was served as a primary lead for detailed data collection, modeling, and analysis (with MassDEP). The local planning agencies assisted by providing GIS support and worked directly with the town planning boards to conduct land use and water use analysis that ultimately feed into the watershed loading analysis. Although, overall, this has been a very positive experience and results in local buy-in for TMDL implementation, caution should be exercised: we have run into problems with the culture of the university system, which is that everything they do is considered research and proprietary—even though paid for with public funds. This can result in an inability to obtain (or delays in obtaining) data and model files for use at either the State or local level.

Rick Dunn, MassDEP (dennis.dunn@state.ma.us, 508-767-2874)

Appendix 4: Summary of Policy Recommendations from Workshop Participants

A Collection of Ideas for Policy Reform at the Federal and State Levels to Improve the Effectiveness of TMDLs in Addressing Nonpoint Sources of Pollution⁵

I. ACTIONS BY CONGRESS

- A. Amend Clean Water Act (or pass new legislation) to require implementation of TMDLs and provide for enforcement authority with respect to nonpoint sources.
- B. Grant NRCS authority to enforce implementation.
- C. Move toward requirements for more prioritized or targeted TMDL implementation—and away from the present approach, which is too often seen as seeking to implement “everything, everywhere, by everybody.”
- D. Pass a nutrient management law applicable to farmers.
- E. Reduce or eliminate the “cone of silence” in the Farm Bill.
- F. Require 75% of EQIP funding to go to projects focused on impaired waters. This would be more targeted than the current HUC-8 100% requirement.
- G. Increase 319 NPS funding and make it an explicit program for implementing TMDLs.
- H. Change the role of NRCS (USDA) from promoting “programs and practices” to truly promoting the “mission” of natural resources conservation.

II. ACTIONS BY U.S. EPA

- A. Feature and promote State initiatives that effectively use various types of regulatory tools to deal with NPS problems. This may involve the establishment of a national NPS regulatory demonstration program to benefit from State incubators and to facilitate technology transfer.

⁵ These suggestions and recommendations are the result of an idea-generating session conducted in plenary, with all Workshop participants. They are presented here neither as a consensus view, nor in order of priority. An appropriate next step would be to convene a small group of State personnel to identify, expand on, and prioritize the most promising—and feasible—recommendations captured in this Appendix.

- B. Integrate the TMDL Program and the 319 NPS Program so as to more effectively coordinate TMDL development and TMDL implementation; consider designating the 319 Program as an explicit mechanism for ensuring TMDL implementation; develop a consistent policy within EPA about implementation coordinators through 319.
- C. Adopt the *Pinto Creek* judicial ruling as Agency policy and use the 208/Basin Plans as the vehicle for implementation.
- D. Issue guidance to clarify that satisfying the “nine elements” of a watershed plan qualifies as reasonable assurance of implementability for a TMDL.
- E. Require that TMDL implementation planning begin with land use planning tied explicitly to point and nonpoint source limits.
- F. Reevaluate EPA policy governing water quality standards.
- G. Encourage development of brief (about ten pages) but comprehensive State TMDL implementation strategies.
- H. Develop guidance on how to structure TMDLs for ease of implementation (e.g., write TMDLs for a watershed audience, pushing specifics (EPA-required information) into the appendix; include a three-to-four page executive summary that conveys to stakeholders what the impairment is, why they should care, and how they can help implement the solution).
- I. Develop a “how-to” guide on funding TMDL implementation.
- J. Improve the targeting of funds.
- K. Develop accountability and compliance tools that get beyond the issue of pace, recognizing incremental water quality improvements and other environmental milestones to show that efforts are registering in the water column (more than just on-off indicator of list) ex. bacteria or metals.
- L. To assist in prioritizing watersheds, develop guidance on the effects of exceeding water quality standards to certain magnitudes, frequencies, and durations (combined with considering the social value of the water body).
- M. Condition payout of 319 funds on adoption of rules and regulations for NPS implementation and having an effective plan for implementing TMDLs (including development of standards for plan development and implementation).
- N. Establish TMDLs and nutrient allocations for Mississippi River/Gulf of Mexico States—promote change in the States through macro-level,

outside direction (“the Mississippi River/Gulf of Mexico is the modern Cuyahoga River”); and if this fails, it demonstrates the inadequacies of our current system.

- O. Promote the alignment of TMDLs and SRF goals.

III. ACTIONS BY OTHER FEDERAL ACTORS

- A. USDA/NRCS: Condition commodity payments on adopting or meeting certain NPS minimum standards (e.g., no-till, cover crops, riparian buffers, and cattle exclusion). Leverage those expenditures just as is done for education, stem cell research, and other recipients of federal funds.
- B. USDA/NRCS: Authorize NRCS to hire more staff so as to more effectively allocate funds.
- B. Improve inter-agency communication on water quality issues. In particular, the relationship between NRCS and EPA as it relates to results in agriculture and information on BMP installation. This could involve removing the “cone of silence,” or at least reducing its influence (e.g., NRCS provides location information (via GIS) about farms, without other identifying information, or provides information on a 12-digit HUC scale—so as to at least allow for information on water quality success to be obtained).

IV. ACTIONS BY THE STATES

- A. Fully use and deploy the range of legal and regulatory authorities currently available (begin by identifying all opportunities under existing law).
- B. Utilize the influence of the governor’s office to ensure that State agencies leverage technical and financial resources to address CWA issues.
- C. Mandate TMDL implementation and identify the manner in which a TMDL implementation plan will be developed, adopted, and tracked.
- D. Combine TMDL and 319 NPS Programs within the same State agency to improve coordination of TMDL development and TMDL implementation.
- E. Adopt State-wide minimum requirements on certain activities to prevent new impairments and bring about some immediate first steps towards restoration.
- F. Track BMP implementation and its results (this may include monitoring adjacent to the BMP, midfield, and the endpoint of the water body).

- G. Require agricultural actors to adopt BMPs to control NPS pollution—*e.g.*, employ a “permitting” program (which is technically non-regulatory) where farmers must register BMPs, and the State monitors to verify.
- H. Modify water quality standards to be more realistic (attainability/ implementability) and seek common ground among the views of stakeholders and agencies.
- I. Pass a nutrient management law applicable to farmers.
- J. Commit (through law, regulation, practice, etc.) to develop an implementation plan when developing a TMDL.
- K. Establish dedicated funding sources for TMDL implementation at the State level.
- L. Establish dedicated funding sources for implementation of specific TMDLs at the local level (*e.g.*, in Oregon’s Willamette Basin).
- M. Pass agricultural laws similar to those in Wisconsin (manure management prohibitions, etc.).
- N. Pass laws governing the installation of septic systems (*e.g.*, Maryland’s Severn River law); septic performance standards should be tied to the size of the hydrologic system.
- O. Identify priority watershed(s) in each State and focus 319 funding there.

Appendix 5: Summary of Nonpoint TMDL Workshop Participant Evaluations

Twenty Workshop participants completed an anonymous Participant Evaluation Form (provided in the resource binder materials). The combined numerical results from the evaluations indicate an overall event rating of “Very Good-to-Excellent,” across all categories. In addition to the numerical responses, we received many written comments, all of which are reproduced here.

1. Participant Numerical Results (Combined)

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

The Workshop—Overall

Information Presented: **Avg: 4.5**—Excellent (10), Very Good (10)

Workshop Materials: **Avg: 4.75**—Excellent (15), Very Good (5)

Workshop Organization: **Avg: 4.75**—Excellent (16), V. Good (3), Satisfactory (1)

Group Interaction: **Avg: 4.75**—Excellent (15), Very Good (5)

Session Facilitation: **Avg: 4.55**—Excellent (13), Very Good (6), Fair (1)

Conference Facility (NCTC): **Avg: 4.9**—Excellent (18), Very Good (2)

Goals and Outcomes; Topical Coverage

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

Avg: 4.17—Excellent (5), Very Good (11), Satisfactory (2)

How successfully did the workshop meet your own expectations?

Avg: 4.63—Excellent (13), Very Good (5), Satisfactory (1)

What I learned will be useful to me:

Avg: 4.53—Immediately (9), In Short-term (5), In Future (1)

2. Participant Written Evaluations

The Workshop – Overall Comments

“Great workshop that helped in additional approaches and needs for TMDL NPS development and implementation. Very well done!”

“NCTC- best facility for this type of workshop I’ve ever been to. ELI staff knew their subject matter and skill set to facilitate open discussion was phenomenal. Longer meetings are usually frowned upon, but it takes a little time for the group to get into the groove of “open” discussion and comfortableness- so maybe one more day would have been better- we were just getting going.”

“Not enough time for follow-up discussions during sessions to address discussion questions and outcomes.”

“Very helpful to hear from and interact with States from other EPA regions. Good to know similar problems across the country and to glean few helpful ideas. Good overall format. I like whole group meeting all the time (no break-out sessions).”

“Another great workshop. There is a lot of information that I can take back to my State to improve/change our NPS approach. I was amazed to see how similar barriers to implementation are between very different geographically located States.”

“Wonderfully planned and coordinated, Liked discussion questions and anticipated outcomes in agenda, Wonderful group of speakers and attendees.”

“Too many presentations and not enough facilitated discussion to answer questions. Too many State programs saying the same thing.”

“Very worthwhile.”

“At times, speakers were allowed to go on too long. Not a criticism of the ELI group: Some speakers were off point in terms of importance/relevance of their presentations to the work of this particular group/audience.”

“Too much of the same thing for presentations. Not much on implementation base of TMDL.”

“I’m very satisfied. Learned a lot, made new contacts. Loved the place.”

“Most worthwhile experience I’ve had (job related) since last year’s workshop.”

“Would have liked having materials ahead to review before workshop.”

“Would have liked to have more time for discussion and less on presentations. ‘Red’ farm States missing- e.g. Nebraska, Illinois, Georgia, etc. Thanks for having all materials ahead of time.”

“Should we start a Twitter or Facebook workgroup space? If not listserv that’s topic specific so people can delete e-mail if of no interest to them or participate if it is of interest. Starting topic: TMDL implementation format.”

“Great conference! I really enjoyed the interaction, I thought the content was appropriate and timely.”

“Great job by all- Thanks for conducting.”

“Have a session where each State can ask one or two questions to the larger group and have a discussion along those lines. This will provide opportunity for States to ask questions that are not on the agenda but would like to have other’s perspective.”

“The interaction among participants is priceless. Engaging the Feds was time well spent in getting a read on their perspective and agenda. Should plan to do this in 2 years to see how things have changed (good or bad). Also tee up a session on likely outcomes of performance measures slated for 2012 (SP-10,-11,-12, etc.).”

“Some presentations seemed to diverge from session topic; but were still on track with overall workshop.”

“Needed more time to discuss session outcomes.”

“It takes a little time to transfer this down to staff, contractors, and partner agencies.”

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

“EPA’s TMDL implementation tracking efforts- recent study in R5 plus recent ASIWPCA conference call.”

“Would have liked more time or more people with NRCS to get further toward better coordination of resources.”

“Implementation based upon TMDL most general information.”

“Not enough discussion/presentation on what to do in the TMDL (e.g. better land IDs, etc.) Too much focus on implementation.”

“Although not appropriate for this conference, I think there should be some discussion at EPA about the need for more monitoring support and a plan to backfill EPA and State staff due to huge retirements over the next 2-5 years.”

“Begin to use listserv to generate monthly discussion on TMDL/NPS topics- keeps network engaged in the interim between these workshops.”

Session #1: Gaps and Barriers in Law and Policy (Part I): The Divide between State NPS and TMDL Programs and their Respective Water Quality Objectives

“Nesha’s presentation was great.”

“Good stuff. Emphasizes need to focus more attention on behavioral and social science aspects of our work.”

“Good presentations. I am amazed (and pleased) to see State people managing both TMDL and NPS (ours are in separate programs). Also, it is great to see someone dedicated to implementation.”

“Enjoyed program histories and logistics.”

“We did not discuss the gaps! 3 State programs discussed what they are doing. We did not really answer the discussion questions.”

“Very good presentations! Wish the presenters had addressed the outcomes and discussion questions more directly in their presentations.”

“Eric’s info was especially relevant. Nesha’s info was very practical.”

“Did answer discussion questions.”

Session #2: Gaps and Barriers in Law and Policy (Part II): The Divide between Federal NPS and State TMDL Programs and their Respective Water Quality Objectives

“NRCS- disappointing; they had an opportunity at this mtg for meaningful discussion and let it slip away.”

“Thanks, Dov, for raising the bar and challenging us to reach it. NRCS- we clearly need to change the culture over there!”

“Interesting mix: EPA, NRCS, FS. Appreciate hearing different perspectives.”

“Didn’t really address discussion questions.”

“Dov’s presentation- very good! Most State interest in ag. Next time (?) have 3 ag. people, pref. with ability to answer questions from States.”

“NRCS presentation was defensive, not pro-active in terms of how their programs can or cannot directly or indirectly address water quality issues on ag. lands. That said, you’ll get enough other comments. USFWS could have presented more info on how to leverage their programs toward WQ issues.”

“Discussion questions not answered.”

“Unfortunate that NRCS representative really not versed on the topic.”

Session #3: Tricks of the Trade: Processes to Ensure NPS TMDLs are Implemented (Part I): Among State Programs

“KS- wanted more specific examples of sources rather than just overall programmatic approach.”

“Intriguing- especially MA challenges and AZ unique setting and to hear KS issues since MO envies their monitoring network and implementation tools built into agency structure.”

“Only 10 minutes of discussion. Not enough time to have a discussion regarding the questions.”

“Would have preferred something a little more interactive right after lunch.”

“Presenters did a better job of addressing outcomes for session #3.”

“It appears that collaboration and cost-sharing should be emphasized to achieve water quality goals. This session did a nice job demonstrating this.”

Session #4: Tricks of the Trade: Processes to Ensure NPS TMDLs are Implemented (Part II): State-Federal Relationship

“Gatorade - good topic but missed session objective. IA- see KS for session#3 (wanted more specific examples of sources rather than just overall programmatic approach).”

“Dean’s and Allen’s ppt- very interesting and informative. Useful ideas (target different/specific audience)”

“Only 10 minutes of discussion. Limited to the presentation and not the discussion questions; then discussion was cut off when we started getting into dialogue.”

“Dean gets it. Enjoyed his presentation.”

“Some of above. Texas presentation too much detail.”

Day One Wrap-Up

“Could have been used to spend more time to reflect on outcomes from day’s sessions.”

“I am always interested in John Goodin’s input”

“Weak; should have reviewed discussion questions and general consensus on responses.”

“Loved the Haiku! EPA is really listening!”

“Good wrap up.”

Evening Session: Effectively Leveraging and Prioritizing Existing Funds to Address Waters Impaired by Nonpoint Sources of Pollution

“Excellent SRF ideas, putting them in place in my State will be a challenge.”

“Learned some new ideas for how to leverage SRF for NPS.”

“Stephanie offered useful and “new-to-me” info. Very good info and forum.”

“Didn’t take a lot away from this, though the casual format was great.”

“Confusing because different States have different SRF laws and policies.”

“Good insight into overarching SRF eligibility. Good info about States with exemplary innovative use of SRF funds.”

“Very informative. Presenters did great job of answering discussion questions.”

“Informative and useful.”

Session #5: Best Practices in Developing and Implementing TMDLs that Reach NPS Pollution (Part I)

"I appreciate Ziegler's viewpoint and observations."

"Good stuff. Boy, I'm envious of WI and WA!"

"Very good talks with good info and ideas (interesting, engaged speakers)."

"This session along with session 6 were incredibly useful. Content was wonderful and the speakers were so informative."

"Rude to run long, esp. with 1st presentation. Helen was inspirational."

"Excellent info from Wisconsin."

"Again very informative, presenters get good job with answering the questions."

"Excellent overview and example States. Would like to see follow up summarizing all State NPS reg. efforts."

Session #6: Best Practices in Developing and Implementing TMDLs that Reach NPS Pollution (Part II)

"Good, good info."

"Wonderful"

"Ok, but no discussion time."

"Good cross-section of State approaches."

"See session #5 (Again very informative, presenters get good job with answering the questions)."

"Clear need for all States to have some authority even if used as a deterrent."

Session #7: Best Practices in Developing and Implementing TMDLs that Reach NPS Pollution (Part III): Plenary Discussion

"Needed more time set aside for this kind of interactive discussion for all sessions."

"Learned/became aware of what other States are doing and up against."

“Plenty of time for discussion (it was needed).”

“The conversation was largely limited to session 6 presentations. Most discussion questions not addressed.”

“Could have been longer- lots of interest, hands raised, when it had to end.”

“A good Q&A session”

“There was no discussion about how TMDLs can be written to be better implemented in 319 plans.”

Session #8: Opportunities for Public Outreach and Enhancing Engagement between State TMDL Programs and Stakeholders

“I appreciate MO’s view on volunteer monitoring and true positive impact on individual behavior change; however utility of volunteer data in my State is highly suspect and limited.”

“Need more examples of effective social/behavioral change strategies. WQ is a cultural/social value issue.”

“Good example from New Jersey, very similar to a project we have.”

“Thought this could have been a little more specific on how stakeholders can truly be involved in TMDLs (what works, what doesn’t). How is the process falling short?”

“Ok... Not sure about Anne’s presentation’s relevance- during Q&A she mentioned “TMDLisms”- I would have liked to hear more about them.”

“Very informative”

“A lot of good ideas.”

Session #9: A Blueprint for Success: Directing Workshop Output I

“While this was a group brainstorming session, ELI could have done better in pointing out connections between earlier presentations and ideas/concepts the group may have “missed” in this session.”

“Good list. I look forward to the “cookbook”.”

“The ideas shared and discussion was useful. However I am not sure what the outcome was supposed to be- just a list for future discussion/action → how will we follow up on the ideas?”

“Great brainstorming session, look forward to seeing the cookbook.”

“Good discussion but could have been better focused to answer a few more specific questions.”

“Good way to summarize helpful ideas for us to try during the next year.”

“Notetakers on flip charts could have benefitted by the facilitator repeating/summarizing the point made by the audience member, then capture on the sheet... Absent that, some of the flip chart notes did not accurately or usefully capture the point made.”

“Good discussion.”

Session #10: A Blueprint for Success: Directing Workshop Output II

“Emphasize- NO consensus on the additional federal regulation (or statute) of NPS discussion.”

“Clearly flushed out the divergence of opinion among the States!”

“Exhausting and invigorating!”

“Same as #9 (The ideas shared and discussion was useful. However I am not sure what the outcome was supposed to be- just a list for future discussion/action → how will we follow up on the ideas?)”

“Very interesting session. I was glad to see that people felt comfortable freely expressing ideas, also glad to see they weren’t censored or left out based on lack of consensus! Would have like more discussion of exactly how the CWA could be changed (how to start, changes to make).”

“Good discussion but could have been better focused to answer a few more specific questions.”

“Next year, spend at least ½ day on this sort of thing.”

“Good discussion on the tough issues; not sure we got to solutions, but we moved the cheese...”

“Policy- wide ranged discussion!!”

“Wish we could have had much more time to really work on a couple of the ideas, but I know that would have been impossible.”

Workshop Wrap-Up

“There was NOT a conclusion on this (additional federal regulation (or statute) of NPS discussion). Be respectful of Goodin’s observation of separation of executive vs. legislative. Excellent summation by Goodin, hope for positive meaningful discussion and progress→ Churchill quote.”

“Well done and succinct.”

“John did a really nice job on this.”

“Always good to hear from John. He really listens.”

“Good info; good message; open and honest and reflecting commitments.”

Other Comments or Suggestions:

“Another BIG SUCCESS. Thanks again to EPA and ELI for helping to make this happen. Great follow-up to last year’s meeting. If we are able to do this again I’d like to see us focus more on how we address the need to effect social/cultural/behavioral changes of individuals, landowners, communities, local and regional governments. Also, as I said earlier, need more time for open, facilitated discussions on session questions and outcomes.”

“My ramblings: The focus is on the wrong target. The target should be on implementing actions to protect or rehab water quality. TMDLs are a small piece of the WQ puzzle protection is cheaper than rehab. The foundation is broken WQ standards and designated uses need to be realistic. This is the single biggest barrier to getting local buy-in. We need to understand Rehab costs and who will bear these. Prescriptive regulations just shift the funding burden and don’t allow innovation to achieve end results. Factor the economic benefit of clean water into decision making TMDL development.”

“Too many EPA people? Some wanted to lecture/preach- was that what they were here for? (Not HQ- it was mostly regional people). Hard to tell if they were getting good new ideas (good), or challenging other regions’ States innovations (bad). Maybe list outcomes/discussion questions on those sliding white boards so we can think about them during presentations? We need to use listserv more. Keep up momentum. Thank you!!! Please do this again next year. (Don’t stop believin’!).”

“Facilities/location were excellent, conducive to work. ELI did a great job hosting, organizing, and overall making me feel very comfortable- THANKS! I understand, but I wish that a bit more time to walk around. A 10 minute intro by somebody knowledgeable about the NCTC- its history and purpose- would have been great at the outset... Sometimes the sound of multiple keyboards was distracting...”

“Thanks for the invite.”

“ELI did a great job on the conference itself and on the social pieces. It was fun, and I went to everything, although I am generally not a joiner.”

“Good job. Informative. Enjoyable. And I left with ideas I can utilize and a better national view (perspective). Thanks.”

“It was very disappointing that none of the goals of the sessions was on how to use info from implementation (e.g. BMPs) and use that to write better TMDLs. I thought that was one of the goals of the TMDL conference, not just implementation of TMDLs.”

“Send cookbook in rough draft as soon as possible while fresh in everyone’s mind!”

“Thank you for the invitation. I really enjoyed the conference.”

“It is sad that after 20 years, so few States have implemented enforceable State NPS programs or institutionalized State NPS programs than staffing/funding outside of 319 grants. However, the last thing that is needed is a national NPS regulatory program- there is too much variability and this is best dealt with by States. Since 319 was to be an implementation program, not a planning program, perhaps a CZARA type requirement is needed to force States to implement enforceable NPS programs. The Pinto Creek case does not apply nationally and does not represent good policy. The concept of not allowing new discharges to impaired waters is good, but there are many ways to accomplish this.”

“1) Continue this forum annually- keep it focused on TMDLs and _____. 2) Logistical arrangements were great and kudos to ELI folks for taking extra steps to making things go smoothly. 3) EPA-HQ→ Thank you for your support. 4) EPA-HQ and regions→ should have time allotted to get national update and “what to come” → opportunities to ask questions to EPA.”

Appendix 6:
Workshop Web Portal—
ELI's State TMDL Program Resource Center

Following the May 2009 event, ELI has substantially updated our companion website for the project—which ELI continues to maintain and make publicly available. All workshop materials, as well as many other resources that are relevant to the mission and work of State TMDL Programs, are available at the Institute's *State TMDL Program Resource Center*, at

http://www.eli.org/Program_Areas/state_tmdl_center.cfm