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TMDLs and Water Quality Regulation in New York

by Barnett Lawrence

I. INTRODUCTION

Since the enactment of the Clean Water Act in 1972, the primary mechanism to control water pollution has been the application of technology-based standards to point sources, such as wastewater treatment plants and industrial dischargers. However, Congress recognized that pollution controls implemented by municipal facilities and industry could be insufficient to achieve water quality goals. The Clean Water Act therefore requires states to develop water-quality based controls when technology-based controls are inadequate to achieve state water quality standards.

The total maximum daily load (TMDL) process is one of the primary tools for implementing state water quality standards. Under the TMDL process, states must identify waterbodies that do not meet water quality standards after application of technology-based controls. For each of these impaired waterbodies, the states must establish and implement TMDLs. A TMDL is an estimate of the maximum amount of a given pollutant that a body of water can assimilate without violating state water quality standards. The total load includes pollutants that come from point sources and nonpoint sources, plus a margin of safety. A TMDL may also include an allowance for future growth.

Until recent years, EPA and most states ignored the TMDL requirement. States have been reluctant to implement the TMDL program for a variety of reasons, including lack of resources, lack of monitoring data, the difficulty in tracing diffuse sources

of nonpoint pollution, and political difficulties.¹ However, a wave of citizen suits in the 1990s prompted a flurry of activity by EPA and the states. Among other goals, the environmental groups that brought these suits hoped to use the TMDL program to put some teeth into the largely voluntary programs to control nonpoint pollution.

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Toxic Chemical Releases in New York Decreased Again in 1997

Releases of toxic chemicals in New York fell five percent in 1997, according to EPA's Toxic Release Inventory (TRI) report. Manufacturing plants in New York released 29.9 million pounds of TRI-listed chemicals in 1997, down five percent from 31.4 million pounds in 1996 and 68 percent below the 94.5 million pounds released in 1998. The reductions were achieved even though companies were required to report releases of only 357 chemicals in 1998, but reported for almost twice as many chemicals in 1997. The top five chemicals released in 1997 were toluene, copper, nitrate compounds, hydrochloric acid, and methanol. Of the 657 facilities in New York that filed TRI data, the five with the most chemical releases were Eastman Kodak in Rochester, Finch Pruyn & Company in Glens Falls, General Electric in Waterford, Tesa Tape in Middletown, and Corning in Canton. More complete TRI information is available on EPA's website at <<http://www.epa.gov/opptintr/tri>> and DEC's website at <<http://www.dec.state.ny.us>>. DEC Press Release (May 5, 1999); EPA Region 2 Press Release (May 13, 1999).

New York Argues That Superfund Consent Decree Does Not Protect New York City Drinking Water

A proposed consent decree in a federal CERCLA action is not adequate to protect New York City's drinking water, according to comments submitted by the New York Attorney General's Office on March 31. Under the proposed consent decree in *U.S. v. AlliedSignal Inc.*, No. 99-CV-214 (N.D.N.Y.), two companies agreed to spend \$13.9 million to clean up the Richardson Hill Road Landfill site in Delaware County, New York. According to the Attorney General's Office, the consent decree does not adequately address PCB and volatile organic compound (VCP) releases into the sensitive drainage basin of the Cannonsville Reservoir, a major source of drinking water for New York City residents. *Toxics L. Rptr. (BNA)*, Apr. 14, 1999, at 1393.

Brooklyn Man and Company Plead Guilty to Illegal Asbestos Removal

A Brooklyn man and his company, ECCO Construction, pled guilty to violating the Clean Air Act by conducting an illegal asbestos removal project in New Haven, Connecticut. Defendants conspired with others to use unskilled workers to avoid the costs of proper asbestos abatement at a former YMCA building. Defendants pled guilty on February 12, 1999 in the U.S. District Court for the District of Connecticut. EPA Press Release (Feb. 19, 1999).

UPCOMING EVENTS

August 19, 1999

"Environmental Assessments for Real Property Transfers,"

(Matthew Bender & Co., Inc.)

sponsored by Environmental Resource Center, Buffalo, New York. Information: 1-800-5ERC ext. 222.

August 24-26, 1999

"12th Annual Pollution Prevention Conference: Celebrating Innovations and Accomplishments," sponsored by the DEC Pollution Prevention Unit, Albany, New York. Information: Dottie O'Hare, (518) 457-2553 (dxohare@gw.dec.state.ny.us).

September 14-15, 1999

"Phase II Environmental Site Assessment Process," sponsored by ASTM, New York City. Information: Eileen Finn, (610) 832-9686.

WORTH READING

James Davidson, "Resolution of Transboundary Pollution Disputes: The Great Lakes Experience," 3 *Asia Pac. J. Envtl. L.* 235 (1998).

Michael B. Gerrard, "Rewriting New York State's Cleanup Programs," *New York Law Journal*, May 28, 1999, at 3:1.

Howard Goldman, "Preservation vs. Development: A Case Study of Zoning in Chelsea," *New York Law Journal*, Apr. 28, 1999, at 1:1.

H. Robert Goldstein and Michael J. Goldstein, "Putting a Value on Trees," *New York Law Journal*, Apr. 28, 1999, at 3:1.

Michael Hirsch, "The Wrong Haul: Already a Dumping Ground, Red Hook Enlists Its Friends to Resist Becoming Garbage Ground Zero," *City Limits*, June 1999, at 9.

Kemba Johnson, "Switch Hitter: Career Activist Judith Enck Takes Her Environmental Fight Inside the New Attorney General's Office," *City Limits*, June 1999, at 11.

Stephen L. Kass and Jean M. McCarroll, "Environmental Law: Standing in Citizen Suits Part II," *New York Law Journal*, Apr. 23, 1999, at 3:1.

Esther Kiviat, *Changing Tides: Tivoli Bays, A Hudson River Wetland* (Purple Mountain Press 1999)

Marc Linder and Lawrence S. Zacharias, *Of Cabbages and Kings County: Agriculture and the Formation of Modern Brooklyn* (University of Iowa Press 1999).

Linda Beckwith McCloskey, *Hudson River Field Guide to Plants of Freshwater Tidal Wetlands* (DEC 1999).

TMDLs and Water Quality Regulation in New York

(continued from page 117)

As a result of the citizen suits and some action taken by EPA and the states on their own initiative, TMDLs have gone from an afterthought to an important aspect of the Clean Water Act's

(PUB.004)

scheme. This article provides an overview of the TMDL process and New York's efforts to establish and implement TMDLs. The article summarizes the citizen suit that challenges EPA's oversight of New York's TMDL program. The article also discusses the potential impacts on dischargers and how interested parties can become involved in the TMDL process at its various stages.

II. TMDL REGULATORY PROCESS

A. General

EPA now views the TMDL program as a key component of its efforts to transform its clean water program from one that relied almost exclusively on technology-based controls to one that implements water quality-based controls on a watershed basis. EPA has undertaken several related initiatives, including the 1998 Clean Water Action Plan,² which focuses primarily on watershed management and nonpoint source pollution.

The statutory authority for the TMDL program appears in Clean Water Act § 303(d),³ which lays out general guidelines for the program. EPA has added detail with some general regulations⁴ and a number of guidance documents.⁵ A Federal Advisory Committee issued its final report in July 1998 on how to improve the TMDL program.⁶ EPA is developing proposed revisions to its regulations and guidance based on the Committee's recommendations.⁷

B. Listing and Prioritizing of Impaired Waters

1. Program Background

States must identify waterbodies that do not meet or are not expected to meet water quality standards even after application of technology-based controls required by Clean Water Act §§ 301(b) and 306, including best practicable control technology currently available (BPT) and secondary treatment. These waterbodies are called "water quality-limited segments."⁸

States must then identify those water-quality limited segments that still do not achieve water quality standards after application of certain other pollution control requirements, including more stringent state or local standards.⁹ Every two years, states must submit a list of these impaired waterbodies to EPA. This list is known as a state's 303(d) list. To help interested parties keep track of these impaired waters, EPA has developed a TMDL tracking system, which is a database of information on waterbodies listed under 303(d).¹⁰

Along with their 303(d) lists, states must identify high priority waters targeted for TMDL development over the next two years.¹¹ When establishing these priorities, states must take into account several factors, including the risk to human health and aquatic life; degree of public interest and support; recreational, economic, and aesthetic importance; vulnerability as an aquatic habitat; and immediate programmatic needs, such as wasteload allocations required for permits that are coming up for revisions.¹²

The goal of the TMDL program is to achieve state water quality standards. These standards include three elements: designated uses for the waterbody (such as drinking water, swimming, fishing), criteria to protect the designated uses (physical, chemical, and biological), and an antidegradation statement. States must periodically review and revise, as necessary, their water quality standards. States must follow minimum federal guidelines when adopting and revising their water quality standards.¹³ As states adopt more stringent water quality standards, more waterbodies will be considered water-quality limited and must be included on the 303(d) list. Conversely, if a state revises a water quality standard to be less stringent, a waterbody that was classified as water-quality limited under the old standard may not be water quality-limited under the revised standard. In these situations, states can remove the waterbody from the 303(d) list.

As with the other elements of the TMDL program, the 303(d) list process is governed by broad regulations¹⁴ and guidance documents. In a 1997 guidance document,¹⁵ which applied only to the 1998 listing cycle but may also be helpful for future lists, EPA answered a number of questions about what types of waterbodies must be included on the list. For example, waterbodies for which water quality standards are in the process of being revised to be less stringent must be included on the list even if a TMDL would not be required under the proposed standard. Waters impaired by atmospheric deposition, temperature, and unknown sources or pollutants must also be on the list.

2. Public Involvement

Interested parties can become involved in a state's development of a 303(d) list.¹⁶ Since the list is the cornerstone of a state's TMDL program, getting involved at this early stage can be crucial.¹⁷ Interested parties can ask to be placed on the state agency's mailing list for the 303(d) list and TMDL development. States must provide formal comment periods before submitting a final list to EPA and may also hold public hearings. Parties can review the state's current 303(d) list to determine whether a particular waterbody is listed and whether it is listed as a priority for TMDL development.

In developing 303(d) lists, states are obligated to use all available information to assess whether a waterbody is impaired. This provides an opportunity for citizen groups and industry to submit monitoring data to the state agency. However, many states have not relied on data gathered by citizen groups on the grounds that the data are gathered without adequate quality assurance and quality control.

Some states may try to remove waters from the 303(d) list on the grounds that the waterbody's impairment can be resolved with standard technology or best management practices. Further, EPA guidance allows states to remove a waterbody from the 303(d) list after it has approved a TMDL. However, "de-listing" a waterbody will make it more difficult for interested parties to know whether their local waterbody is polluted and how the state plans to resolve the water quality problem. Interested parties can request states not to delist particular waterbodies or can ask the state to maintain a separate list of delisted waters.

C. Developing TMDLs

1. Program Background

States must develop TMDLs for all waterbodies on their 303(d) lists. EPA requires states to include with their 303(d) lists a schedule for the completion of all TMDLs. According to EPA guidance, the state schedules should generally range from 8 to 13 years. EPA recommends that states develop TMDLs by watershed, since many water pollution problems are area-wide problems caused by multiple dischargers, multiple pollutants, and nonpoint sources.

States must establish TMDLs at levels required to attain the applicable narrative and numerical water quality standards.¹⁸ States must then allocate the acceptable pollution discharge among all pollution sources, including point and nonpoint sources. To put this into EPA's technical jargon, a TMDL must include the sum of both point source waste load allocations (WLAs) and nonpoint source load allocations (LAs), plus a margin of safety (MOS) to provide a cushion to account for uncertainties with the estimates ($TMDL = WLA + LA + MOS$).

A TMDL may also include an allowance for future increases in pollutant loads due to changes in land use, population growth, and expansion of business activity. The TMDLs must be established with seasonal variations, and must take into account critical conditions for stream flow, loading, and water quality parameters.

EPA defines a WLA as the portion of a receiving water's loading capacity allocated to one of its existing or future point sources.¹⁹ A WLA involves dividing up total allowable point source discharge levels among point sources.

An LA is the portion of a receiving water's loading capacity attributed to one of its existing or future nonpoint sources or to natural background sources.²⁰ Load allocations are best estimates of the loading, which may range from reasonably accurate estimates to gross allotments. An LA involves dividing up total allowable nonpoint source pollution levels among nonpoint sources.

TMDLs must be established for all pollutants that prevent or are expected to prevent attainment of water quality standards. This means that one waterbody may require several TMDLs. For example, the New York State Department of Environmental Conservation (DEC) has issued TMDLs for ammonia and phosphorus for Onondaga Lake.

TMDLs focus on reducing the load of chemical contaminants (such as nutrients, metals, biochemical oxygen demand). However, EPA recognizes that in some situations water quality standards can only be obtained if non-chemical factors, such as hydrology, channel morphology, and habitat, are also addressed. Thus, TMDLs can also be developed to establish control measures for quantifiable non-chemical parameters.²¹

EPA guidance allows states to develop TMDLs in phases.²² States may use a phased approach when a TMDL includes both point and nonpoint sources and is based on limited data. A

TMDL developed under the phased approach must provide assurances that nonpoint source control measures will achieve expected load reductions. These TMDLs must include a monitoring plan that describes the additional data to be collected to determine if the load reductions contemplated by the TMDL lead to attainment of water quality standards. EPA cannot approve a phased TMDL unless it expects the initial phase will achieve water quality standards.

2. Public Involvement

Interested parties can review and submit comments on proposed TMDLs. States may organize stakeholder groups for particular TMDLs. For example, DEC recently solicited public comment on TMDL documents for New York City's upstate reservoirs.²³ For TMDLs derived for single dischargers, DEC's proposed regulations state that the public review process for the permit will also be the public notice for the TMDL.²⁴

Citizen suits have been brought in many states, including New York, challenging EPA's actions, or failure to act, at various stages of the TMDL process. EPA has established a database of TMDL litigation.²⁵ These lawsuits have challenged EPA's failure to take action after states have failed to prepare 303(d) lists, the adequacy of the lists, and failure to prepare TMDLs. As the states have started to issue TMDLs, citizen suits have been brought to challenge the contents of the TMDLs.

Most suits have been brought by environmental groups. However, industry has brought a challenge to a TMDL²⁶ and is likely to bring additional challenges.

D. Implementing TMDLs

By itself, establishment of a TMDL does nothing to improve water quality. The pollution allocations in a TMDL must be implemented. TMDLs are not directly implemented or enforceable against sources in a watershed. Rather, they are implemented through other federal, state, and local programs to control point and nonpoint source pollution.

Point sources allocations are implemented through the water quality-based discharge limits in national and state pollutant discharge elimination system (NPDES and SPDES) permits. NPDES permits are generally reviewed every five years. New discharge limits required by TMDLs are incorporated into existing NPDES permits during the permit revision process. The permitting authority can deny new NPDES permits if they would result in exceedances of a TMDL.

Nonpoint source allocations are implemented through a variety of state, local, tribal, and federal programs, such as federal land management plans, state nonpoint source programs, and local zoning programs. These programs may be regulatory or voluntary and should be described in the state nonpoint source management program under Clean Water Act § 319. States may ask farmers and ranchers to use best management practices to prevent fertilizers, pesticides, and other runoff from reaching waterbodies. Cities may be required to control and treat runoff from their streets.

Thus, the basic options for a state agency to implement a TMDL include: 1) placing prohibitions on new or additional point source discharges; 2) imposing stricter limitations in NPDES permits; and 3) reducing pollution from non-point sources.

Critics assert that many of the TMDLs issued so far do not address nonpoint sources in a meaningful way, but simply ratchet down on NPDES permits.²⁷ Where NPDES permits are not available, these critics contend that TMDLs rely on unidentified and largely unenforceable nonpoint source best management practices.

EPA has provided the following guidelines on implementing TMDLs:

- *Waters impaired solely or primarily by point sources.* EPA's 1991 TMDL guidance document²⁸ broadly describes the process for deriving wasteload allocations for point sources and incorporating them into NPDES permits. Effluent limits in NPDES permits must be established to achieve the waste load allocation specified in the TMDL.
- *Waters impaired by a blend of point and nonpoint sources.* If a wasteload allocation for a point source is increased based on an assumption that loads from nonpoint sources will be reduced, the state must provide "reasonable assurances" that the nonpoint source load allocations will be achieved.
- *Waters impaired solely or primarily by nonpoint sources.*²⁹ TMDL implementation for these waterbodies may involve individual landowners and public or private enterprises engaged in agriculture, forestry, or urban development. The primary mechanism will be state Clean Water Act § 319 programs, along with state, local, and federal land management programs. For these waters, EPA has directed its regional offices to work with each state to achieve TMDL load allocations. States must develop an implementation plan for nonpoint source load allocations. States may submit implementation plans to EPA as revisions to state water quality management plans, coupled with a proposed TMDL, or as part of an equivalent watershed planning process. A state implementation plan must include: 1) reasonable assurances that the nonpoint source load allocations in the TMDL will be achieved (assurances can be regulatory, non-regulatory, or incentive-based); 2) a public participation process; and 3) appropriate recognition of other relevant watershed management programs, such as local source water protection programs, urban storm water management programs, state § 319 programs, or state § 303(e) continuing planning processes.

E. TMDL Assessment

In the final step in the TMDL process, states must evaluate TMDLs to determine whether they are adequate to meet revised

water quality standards or changing pollution sources. States conduct monitoring of water quality throughout the TMDL process. Monitoring data allows states to evaluate whether a TMDL and its associated control actions are sufficient to achieve water quality standards.

III. NEW YORK'S TMDL DEVELOPMENT

A. Role in State Water Program

New York State has over 52,000 miles of rivers and streams, almost 7,900 lakes and ponds, 577 miles of Great Lakes coastline, 1,530 square miles of bays and estuaries, and 120 linear miles of Atlantic Ocean coastline. DEC has divided the state into 17 major drainage basins for purposes of its watershed management programs. According to DEC, the water quality in most of these waterbodies supports their intended uses. However, many waterbodies are impaired or otherwise threatened by human activities.³⁰

New York has made good progress in reducing pollutants from industrial and municipal point sources. Most of the remaining water quality problems are caused by nonpoint pollution. The primary source of pollution in over 90 percent of New York's impaired waterbodies comes from nonpoint sources.

TMDL development is just one element in New York's water quality management program.³¹ For example, DEC has developed a strategy, called the Comprehensive Assessment Strategy, to provide a complete evaluation of monitoring data and a comprehensive assessment of water quality throughout the state.

New York has a number of watershed-based initiatives designed to address point and nonpoint pollution. For example, DEC prepared a Unified Watershed Assessment, which was required to qualify for additional Clean Water Act § 319 funding provided under the federal Clean Water Action Plan.³² The Unified Watershed Assessment identifies restoration priorities and discusses initiatives already undertaken by New York. These initiatives include the 1996 Clean Water/Clean Air Bond Act, the New York State Environmental Protection Fund, the Clean Water State Revolving Fund, the 1997 New York City Watershed Agreement, and a number of other watershed-specific projects.

The foundation for New York's water quality program is the water classification system and state water quality standards.³³ DEC classifies each surface water and groundwater based on its best use, such as drinking, bathing, fish propagation, and fish survival. Interested parties can submit petitions to DEC for reclassification of a waterbody and can participate in public review and hearings for proposed classifications.

After DEC adopts a classification, it develops water quality standards.³⁴ These standards are descriptive limits, generally expressed in numeric concentrations, for quantities of certain chemical, biological, and physical constituents in the water. They may also be expressed in narrative or qualitative terms (such as "no increase in turbidity that will cause a substantial visible contrast to natural conditions"). They identify the

amounts of substances that can be present in a water without impairing best uses. Proposed water quality standards are also subject to public review before they are approved by DEC. Water quality standards are issued for each use classification.

Thus, parties with a stake in water quality standards for particular waterbodies should not necessarily wait until DEC initiates the TMDL process. Interested parties should also consider participating in DEC's regulatory process for water classifications and state water quality standards.

B. TMDL Program Background

DEC is the agency responsible for developing TMDLs in New York. The specific office is DEC's Division of Water, Bureau of Watershed Management.³⁵ DEC works with other agencies, including the State Department of Health and the New York City Department of Environmental Protection (DEP), to develop TMDLs. DEC has issued a guidance document that describes its TMDL development process.³⁶

As in many other states, litigation will have a significant impact on the future of New York's TMDL program. In 1994, the Natural Resources Defense Council (NRDC) filed suit to challenge EPA's oversight of New York's TMDLs program.³⁷ When it filed the case in 1994, NRDC asserted that New York's TMDL program was virtually nonexistent. DEC argued that it had been applying some form of TMDL process since the 1970s.³⁸ NRDC's lawsuit challenges: 1) EPA's failure to establish TMDLs for New York waterbodies; and 2) EPA's approval of phosphorus TMDLs for reservoirs supplying drinking water to New York City. The parties filed their final papers in the case in April 1999. As of early June, the court had not issued a decision. The NRDC case will be discussed in more detail below.

C. Listing of Impaired Waterbodies

DEC issued its current 303(d) list³⁹ in 1998, and is now working on developing its year 2000 list. The 303(d) lists themselves are not an issue in NRDC's lawsuit. The number of segments in New York's 1998 list increased significantly from previous lists, based primarily on EPA's 1997 listing guidance. The additional segments include waters that have documented use impairments, such as acid rain lakes, fish consumption advisories, and closed shellfish harvesting waters.

To develop the 303(d) list, DEC reviews waterbody information in its Priority Waterbody List (PWL), which includes over 1400 segments. The PWL, which DEC first issued in 1983, is a statewide inventory of New York waterbodies that tracks known and suspected water quality problems. DEC does not include all PWL segments on the 303(d) list because of a lack of documentation of the water quality problem. These segments will be added to the 303(d) list if and when the water quality problems are verified. DEC also evaluated surface water quality data from its Rotating Intensive Basins Studies (RIBS) Sampling Program when preparing the 303(d) list.

DEC assigned waterbodies in the 303(d) list to six categories:

1) waters designated as priority for TMDL development (target date for TMDL completion: 1998 to 2002); 2) waterbodies impacted by atmospheric deposition (2003); 3) waterbodies with fish consumption advisories (2000-2005); 4) waterbodies closed to shellfish harvesting (2000-2002); 5) waterbodies with documented exceedances of water quality standards (2008); and 6) waterbodies with problems requiring verification (2000-2005).

DEC's 1998 303(d) list identified the following as priority watersheds:

- ◆ New York Harbor (Target date for TMDL completion listed as 2002.)
- ◆ Long Island Sound⁴⁰ (Target date listed as 1998, but not yet submitted to EPA. DEC, working with Connecticut, has released a preliminary draft to a group of stakeholders.)
- ◆ New York City Water Supply Watershed (Certain Phase I TMDLs approved by EPA, litigation pending, Phase II TMDL development proceeding.)
- ◆ Onondaga Lake (Phase I TMDLs approved by EPA in 1998.)
- ◆ Lake Champlain (Target date listed as 1998, but not yet submitted to EPA. Discussions with Vermont ongoing.)

The 303(d) list identifies specific streams, rivers, reservoirs and other impaired waterbodies within these priority watersheds. When possible, DEC applies the TMDL process to an entire river basin or watershed. It can also be applied to a sub-basin within a watershed or to a waterbody segment. Designation as a priority water does not mean that DEC will complete TMDLs during the two years that a list is in effect.

Although DEC does not yet have a formal public review process in place for its development of the year 2000 303(d) list, interested parties can contact DEC to be placed on a distribution list for draft versions of the list.⁴¹ Interested parties should also consider monitoring DEC's development of its PWL list, from which the 303(d) list is derived. DEC periodically updates the PWL by studying various watersheds on a rotating basis. Parties interested in a particular water body should contact DEC to determine when it will be reviewed.

D. Establishing TMDLs

New York uses a phased approach in TMDL development, which allows pollution reduction efforts to be implemented while additional modeling and data analysis are conducted. Under the phased approach, DEC must still establish TMDLs to meet state water quality standards. The margins of safety under the phased approach should reflect the uncertainty in the analysis that relates loadings to water quality. As of June 1999, DEC had issued Phase I TMDLs for Lake Onondaga (ammonia and phosphorus) and Phase I TMDLs for the New York City upstate reservoirs (phosphorus).

In its draft Performance Partnership Agreement with EPA,⁴² DEC made the following commitments:

- ◆ Develop and submit TMDLs to EPA during state fiscal year 1999-2000 for Lake Champlain, New York City Watershed, and Long Island Sound.
- ◆ Develop and submit to EPA the year 2000 § 303(d) list by April 1, 2000.
- ◆ Work with EPA to develop, as necessary, TMDLs, waste load allocations, and load allocations for the applicable organic pollutants, mercury, pathogens, and dissolved oxygen/nutrients in New York Harbor.
- ◆ Continue to work with EPA to document DEC's activities to resolve the *NRDC v. Fox* lawsuit.

New York's alleged failure to establish TMDLs is one of the major issues in the NRDC citizen suit. NRDC argued that EPA should have deemed New York's alleged failure to submit TMDLs as a "constructive submission" of deficient TMDLs, thus triggering EPA's duty to step in and issue the TMDLs. The court rejected this argument and held that EPA's decision on when to deem a state inaction a constructive submission is discretionary and that the court therefore lacked subject matter jurisdiction over plaintiffs' Clean Water Act citizen suit claim.⁴³ However, the court refused to dismiss plaintiffs' claim that EPA's failure to issue the TMDLs violated the Administrative Procedure Act (APA).

E. Adequacy of TMDLs

Environmental groups and other interested parties will be watching closely as DEC begins to issue more TMDLs. Based on the TMDLs issued so far, not everyone will be happy.

1. Development of New York City Watershed TMDLs

The New York City Watershed reservoirs are listed on DEC's 303(d) list as impaired for use as a water supply, with the pollutant of concern listed as nutrients (phosphorus). The applicable water quality standard used to develop the Phase I TMDL was 20 micrograms per liter.⁴⁴

Working with the New York City DEP, the State Department of Health, and EPA, DEC adopted the phased approach for developing phosphorus TMDLs for the New York City reservoirs.⁴⁵ DEC submitted the Phase I TMDLs in January 1997.⁴⁶ In Phase I, which DEC described as a "first cut analysis," DEC used simplified models and existing measured or estimated loading data. DEC made a preliminary determination for each reservoir whether the TMDL was being met or the waterbody was water quality limited for phosphorus. DEC applied a margin of safety and made a preliminary assessment of seasonal variability. It calculated a TMDL and developed point source wasteload allocations for each reservoir. DEC identified aggregate load allocations for nonpoint sources for those reservoirs where the TMDL was exceeded.

In April 1997, EPA determined that the 18 TMDLs were technically sound.⁴⁷ EPA approved the TMDLs for the eight reservoirs that exceeded their critical loads for phosphorus. EPA

decided to take no action on the remaining 10 TMDLs for which the critical loads were not exceeded.⁴⁸ EPA deemed these 10 TMDLs to be submitted for "informational purposes" only.

DEC and DEP are proceeding with Phase II. In March 1999, DEC announced the availability of Phase II phosphorus TMDL-related documents for New York City's 19 upstate reservoirs.⁴⁹ DEC is required to submit these Phase II TMDLs to EPA by September 1, 1999. The development of phosphorus TMDLs in the New York City watershed has been incorporated into the January 21, 1997 New York City Watershed Memorandum of Agreement, entered into by New York City and all of the watershed communities.

2. NRDC Citizen Suit

The adequacy of the TMDLs submitted by DEC for the New York City reservoirs is the second major issue in the NRDC citizen suit. NRDC argued that EPA mishandled the TMDLs submitted by New York. The court dismissed NRDC's Clean Water Act citizen suit claim that EPA should not have approved eight phosphorus TMDLs for New York City reservoirs. The court held that EPA's decision to approve or disapprove TMDLs was discretionary and therefore the court lacked subject matter jurisdiction over this claim.

However, the court refused to dismiss plaintiffs' claim that EPA violated the APA in approving the eight phosphorus TMDLs. The court found genuine issues of material fact concerning several issues, including whether the TMDLs implement the applicable water quality standards. EPA conceded that the TMDLs were not sufficient to achieve state water quality standards, but argued that it could approve the TMDLs to achieve near-term pollution reductions while New York develops criteria for establishing TMDLs that actually attain the water quality standard. The court found EPA's interpretation inconsistent with the Clean Water Act, which "does not allow for incremental achievement of water quality standards through successive approval of TMDLs that fall short of the required standard."

The court also found that factual issues remained concerning whether the TMDL's 10 percent margin of safety was adequate, whether the TMDLs included both wasteload allocations for point sources and load allocations for nonpoint sources, whether use of annual instead of daily limits was appropriate, and whether the TMDLs properly accounted for seasonal variations.

NRDC also challenged EPA's decision to treat the remaining 10 reservoir TMDLs as "informational" and therefore to neither approve nor disapprove them. EPA determined that these waterbodies, although they were listed on New York's priority list, were not water-quality limited. The court refused to dismiss this claim on summary judgment.

3. Development of Onondaga Lake TMDLs

Onondaga Lake is located in Onondaga County on the northern edge of the City of Syracuse. DEC identified it as a high priority water on its 1996 and 1998 § 303(d) lists. The

Lake is highly eutrophic and suffers from excessive phosphorus loadings and high concentrations of ammonia and nitrite. Under DEC's water classification system, the Lake is classified as B (best uses are primary and secondary contact recreation and fishing) and C (best use is fishing).

In April 1998, DEC submitted TMDLs to EPA for Onondaga Lake for the pollutants ammonia and phosphorus. DEC again used a phased approach for the TMDLs under which it used existing data and models to establish the TMDLs which trigger pollution reductions, while further data collection and model refinement will lead to revised TMDLs by 2009. The TMDL includes load reductions for the METRO Sewage Treatment Plant, combined sewer overflows (CSOs), and tributary loadings.

To develop the phosphorous TMDL, DEC used the guidance value of 20 micrograms per liter as the applicable water quality standard.⁵⁰ Applying a model developed by the Upstate Freshwater Institute, DEC set the phosphorus TMDL for Lake Onondaga at 140 pounds per day. DEC allocated the TMDL among point and nonpoint sources according to the following formula:

$$\begin{aligned} \text{TMDL} &= \text{WLA} + \text{LA} + \text{MOS} \\ 140 \text{ lbs/day} &= 35 \text{ lbs/day} + 91 \text{ lbs/day} + 14 \text{ lbs/day} \end{aligned}$$

The WLA includes the METRO plant and a wet-weather bypass. The LA represents a 50 percent reduction in loadings from nonpoint sources, including tributaries and CSOs. About 13 percent of this reduction will be achieved through CSO abatement and the rest will be addressed through reductions in urban and suburban portions of the watershed. A consent decree in a federal citizen suit⁵¹ provides considerable funding to address nonpoint sources to Onondaga Lake. DEC used a margin of safety of 10 percent, plus the implicit margin of safety inherent in the conservative assumptions in its analysis. DEC also determined that the TMDL is not affected by seasonal variations

DEC set the ammonia TMDL for Lake Onondaga at 2170 pounds per day. DEC allocated the TMDL among point sources and nonpoint sources according to the following formula:

$$\begin{aligned} \text{TMDL} &= \text{WLA} + \text{LA} + \text{MOS} \\ 2170 \text{ lbs/day} &= 1340 \text{ lbs/day} + 612 \text{ lbs/day} + 217 \text{ lbs/day}^{52} \end{aligned}$$

The METRO plant is the most significant source of ammonia loading (96 percent during critical low flow). DEC applied a water quality model for the Lake and determined that the critical condition is a low hydrological flow that occurs in June. DEC used this critical condition to determine the loading capacity for ammonia in the Lake. The WLA for the METRO plant represents a reduction of over 80 percent from its current average. Because DEC determined that nonpoint sources were not a significant source of ammonia, the LA represents an average load during the critical dry year. DEC used a 10 percent margin of safety, plus the implicit margin of safety inherent in the conservative assumptions in its analysis.

Although the Lake Onondaga TMDLs are not part of the NRDC citizen suit, environmental groups⁵³ and Senator Moynihan⁵⁴ criticized them during the public review period. The

environmental groups asserted that the TMDLs did not establish achievable WLAs for the METRO plant that will result in compliance with water quality standards for phosphorus, ammonia toxicity, and dissolved oxygen. The groups argued that the means to attain the phosphorus standard, installation of filtration technology at the METRO plant, was unproven. They also claimed that the TMDLs failed to take into account seasonal variations and failed to include a sufficient margin of safety.

Despite the criticism, EPA approved the two TMDLs in August 1998.⁵⁵ EPA determined that the TMDLs were set at levels necessary to implement applicable water quality standards with seasonal variations, included adequate margins of safety, and took into account critical conditions.

F. New York's TMDL Implementation

After DEC develops a TMDL and it is approved by EPA, the hard work really begins. The TMDL must be applied to point source dischargers and, if necessary, to sources of nonpoint pollution. Whether TMDL implementation will result in any meaningful reduction in nonpoint source pollution is hotly debated. New York's nonpoint source programs are largely voluntary and implementation of nonpoint source controls through the TMDL process will be challenging.⁵⁶

Point source controls are implemented through DEC's state pollutant discharge elimination system (SPDES) permit program. Each SPDES permit must include provisions that ensure compliance with technology-based standards and with any more stringent limitations, including those necessary to implement a TMDL.⁵⁷ DEC issues SPDES permits for surface water discharges for five-year terms.⁵⁸ According to DEC's proposed revisions to its SPDES regulations, DEC may modify a SPDES permit in various situations, including to "adjust permit limitations, where adjustment of such permit limits would not cause the permittee to violate such adjusted permit limits and adjustment of the permit limitations is necessary to allow a new or increased discharge from another permittee in accordance with a Total Maximum Daily Load/Waste Load Allocation/Load Allocation as set forth in 40 CFR 130.7."⁵⁹

DEC uses a ranking system called the Environmental Benefits Permit Strategy (EBPS) to prioritize permits for full technical review.⁶⁰ The system allows DEC to concentrate on permits with important water quality concerns instead of simply dealing with them chronologically. The system considers a number of factors, such as the size of the discharge, toxicity, waterbody classification, the length of time since a full technical review, new technology, and permit violations. Another factor that DEC considers is TMDL implementation. DEC may modify a SPDES permit at any time under its ranking system.

In its Phase I TMDLs for the New York City upstate reservoirs, DEC proposed to implement point and nonpoint source controls based on the schedule in the New York City Watershed MOA. As part of the MOA, all wastewater treatment plants in the watershed are being upgraded to meet the City's revised watershed regulations. SPDES permits for the plants will be revised to include phosphorus limits. DEC stated that it would

prepare proposed permit modifications for point sources in the reservoir watersheds within 90 days of EPA approval of the TMDLs. The revised permits may include water quality-based permit limits and compliance schedules for facility upgrading. For nonpoint sources, DEC will issue reports identifying potential management practices and later identify potential nonpoint source reductions.

The Phase I TMDL for Lake Onondaga includes a three-stage implementation plan to achieve water quality standards for ammonia and phosphorus by 2012. The implementation plan includes ongoing assessments and evaluation of alternatives, such as diversion of the METRO plant discharge to the Seneca River. New York also plans to participate in an in-lake oxygenation project and pilot studies to evaluate advanced treatment technologies for the METRO plant.

Barnett Lawrence is an environmental law specialist in Arnold & Porter's Washington, D.C. office. He was formerly a Senior Associate Editor with the Environmental Law Institute's

Environmental Law Reporter. He is the author of several publications on environmental and workplace safety law, including the CCH Safety Management Handbook.

¹ For example, the agricultural and timber industries have resisted application of nonpoint source controls.

² Clean Water Initiative (Feb. 19 1998) (available at <<http://www.cleanwater.gov>>).

³ 33 U.S.C. § 1313(d).

⁴ 40 C.F.R. pt.130.

⁵ EPA Office of Water, Guidance for Water Quality-Based Decisions: The TMDL Process (Apr. 1991) (available at <<http://www.epa.gov/owow/tmdl/decisions>>); EPA Office of Water, National Clarifying Guidance for 1998 State and Territory Clean Water Act Section 303(d) Listing Decisions (Aug. 17, 1997) (available at <<http://www.epa.gov/owow/tmdl/lisgid.html>>); EPA Office of Water, New Policies for Establishing and Implementing Total Maximum Daily Loads (TMDLs) (Aug. 8, 1997) (available at <<http://www.epa.gov/owow/tmdl/ratepace.html>>).

⁶ Final Report of the Federal Advisory Committee on the Total Maximum Daily Load (TMDL) Program (July 28, 1998) (available at <<http://www.epa.gov/OWOW/tmdl/advisory.html>>).

⁷ For a more detailed description of the legal aspects of the TMDL program, see Oliver A. Houck, TMDLs III: A New Framework for the Clean Water Act's Ambient Standards Program, 28 *Env't. L. Rep.* 10415 (Aug. 1998). For a detailed treatment of scientific and policy issues, see Wesley M. Jarrell, Ph.D., *Getting Started With TMDLs* (YSI, Inc. 1999) (available at <<http://www.ysi.com>>).

⁸ 40 C.F.R. § 130.2(j).

⁹ 40 C.F.R. § 130.7(b)(1).

¹⁰ Go to EPA's TMDL home page at <<http://www.epa.gov/owow/tmdl>> and click on the link to the TMDL Tracking System.

¹¹ 40 C.F.R. § 130.7(b)(4).

¹² 1991 TMDL Guidance, *supra* note 5, at Chapter 2.

¹³ 40 C.F.R. pt. 131.

¹⁴ 40 C.F.R. § 130.7(b).

¹⁵ 1997 TMDL Listing Guidance, *supra* note 5.

¹⁶ See National Wildlife Federation, *Saving Our Watersheds: A Field Guide to Watershed Restoration Using TMDLs* (Jan. 1998) (available at <<http://www.nwf.org/nwf/northeast/watersheds>>).

¹⁷ Parties interested in particular waterbodies can become involved at an even earlier stage: when a state proposes water classifications and water quality

standards. See *infra* Section III.A. For information on public involvement in DEC's development of the 303(d) list, see *infra* Section III.C.

¹⁸ 40 C.F.R. § 130.7(c).

¹⁹ 40 C.F.R. § 130.2(h).

²⁰ 40 C.F.R. § 130.2(g).

²¹ 1991 TMDL Guidance, *supra* note 5.

²² *Id.*

²³ Environmental Notice Bulletin Issue No. 11 (Mar. 17, 1999), at 1.

²⁴ 6 NYCRR 750-1.9 (proposed Mar. 23, 1999).

²⁵ The database is available from EPA's TMDL home page at <<http://www.epa.gov/owow/tmdl/lawsuit1.html>>.

²⁶ *Dioxin/Organochloride Center v. Clarke*, 57 F.3d 1517 (9th Cir. 1995).

²⁷ See Houck, *supra* note 7.

²⁸ 1991 TMDL Guidance, *supra* note 5.

²⁹ 1997 Implementing TMDL Guidance, *supra* note 5.

³⁰ DEC, *Unified Watershed Assessment and Watershed Protection and Restoration Priorities for New York State (1998)* (available at <<http://www.dec.state.ny.us/website/dow/uwa/uwarp98.htm>>). According to DEC, 94 percent of New York's rivers and streams "fully support" their designated uses, 47 percent of New York's lakes and reservoirs fully support their designated uses, 73 percent of New York's bays and estuaries fully support their designated uses, 15 percent of New York's Great Lakes shoreline fully supports their designated uses, and 98 percent of New York's ocean coastal waters fully supports their designated uses.

³¹ DEC, *New York State Water Quality 1998*, p. 97 (the New York "305(b) Report") (available at <<http://www.dec.state.ny.us/website/dow/305b98.pdf>>).

³² DEC, *Unified Watershed Assessment and Watershed Protection and Restoration Priorities for New York State (1998)* (available at <<http://www.dec.state.ny.us/website/dow/uwa/uwarp98.htm>>).

³³ Stream classifications and best uses for waterbody segments are found in 6 NYCRR pts. 800-941.

³⁴ New York's water quality standard regulations are at 6 NYCRR pts. 700 to 706. See also *Technical Operational Guidance Series (TOGS) No. 1.1.1, Ambient Water Quality Standards and Guidance Values*.

³⁵ DEC recently reorganized its Bureau of Watershed Management along

geographical lines. Separate watershed unit will cover the southeastern, northern, and western parts of the state. The DEC official responsible for coordinating the TMDL program on a state-wide basis is Philip DeGaetana, (518) 457-0633.

³⁶ TOGS No. 1.3.1, Total Maximum Daily Loads and Water Quality-Based Effluent Limits (Feb. 1998 ed.) (available at <<http://www.dec.state.ny.us/website/dow/togs/togs131.pdf>>).

³⁷ Natural Resources Defense Council, Inc. v. Fox, 30 F. Supp. 2d 369 (S.D.N.Y. 1998).

³⁸ See NRDC v. Fox, 909 F.Supp. 153 (S.D.N.Y. 1995) (in denying NRDC's motion for summary judgment, the court noted that DEC produced some evidence that it had submitted TMDLs to EPA and that EPA had approved them).

³⁹ DEC Bureau of Watershed Assessment and Research, New York State Water Quality 1998 (Oct. 1998), (available at <<http://www.dec.state.ny.us/website/dow/305b98.pdf>>). The 303(d) list is in Appendix E.

⁴⁰ For a discussion of the role of the TMDL program in the restoration of Long Island Sound, see Ann Powers, Reducing Nitrogen Pollution on Long Island Sound: Is There a Place for Pollutant Trading?, 23 Colum. J. Envtl. L. 137 (1998), at 173.

⁴¹ DEC contact: Jeff Myers, (518) 457-7130.

⁴² New York State Performance Partnership Agreement for FY 1999-2001 (draft Mar. 1999).

⁴³ Most courts that have considered this issue have held that a state's failure to submit proposed TMDLs can be considered constructive submission of no TMDLs, which would trigger EPA action. See, e.g., American Canoe Association v. U.S. EPA, 30 F. Supp. 2d 908 (E.D. Va. Dec. 18, 1998).

⁴⁴ This guidance value, 20 micrograms per liter, represented DEC's interpretation of its narrative criteria for phosphorus in 6 NYCRR § 703.2. There were no human health-based numeric standards or guidance values for phosphorus in New York's water quality standards. DEC has proposed a site-specific (specific to the NYC watershed) phosphorus guidance value of 15 micrograms per liter, pending EPA's development of national nutrient criteria. DEC plans to use the 15 micrograms per liter standard in Phase II of its development of phosphorus TMDLs for the NYC watershed.

⁴⁵ A complete description of the methodology used in developing these TMDLs is provided in DEC, Methodology for Calculating Phase I Total Maximum Daily Loads (TMDLs) of Phosphorus for New York City Drinking Water Reservoirs (1996).

⁴⁶ DEC, Phase I Total Maximum Daily Loads for Reservoirs in the NYC Water Supply Watershed (Jan. 30, 1997).

⁴⁷ Letter from Jeanne M. Fox, EPA Region 2 Administrator, to John P. Cahill, DEC Acting Commissioner (Apr. 2, 1997).

⁴⁸ DEC did not submit a Phase I TMDL for one reservoir because the model could not be calibrated to the observed data.

⁴⁹ Environmental Notice Bulletin, Issue No. 11 (Mar. 17, 1999), at 1. The Phase II TMDL documents are available from the New York City DEP's website at (<<http://www.ci.nyc.ny.us/html/dep/home.html>>).

⁵⁰ This guidance value represented DEC's interpretation of its narrative criteria for phosphorus at 6 NYCRR 703.2

⁵¹ In January 1998, Onondaga County (METRO STP) entered into an amended consent judgment with New York State and the Atlantic States Legal Foundation to settle a Clean Water Act citizen suit.

⁵² These figures are taken from the EPA document that approved the ammonia TMDL. Rounding may account for the fact that the sum of the WLA, LA and MOS is 2169 lbs/day.

⁵³ Letter from Samuel H. Sage, Atlantic States Legal Foundation to Hank Samide, DEC, re: Comments on Total Maximum Daily Loads for Phosphorus and Ammonia in Onondaga Lake (Oct. 20, 1997); Letter from Timothy P. Mulvey, Onondaga Lake Cleanup Corp., re: Proposed TMDLs for Onondaga Lake (May 1, 1998).

⁵⁴ Letter from Daniel P. Moynihan to Administrator Carol Browner, EPA (June 22, 1998).

⁵⁵ Letter from Jeanne M. Fox, EPA Region II Administrator, to John P. Cahill, DEC Commissioner (Aug. 19, 1998); EPA Support Document for Approval of TMDLs for Onondaga Lake (July 30, 1998).

⁵⁶ New York has established the Nonpoint Source Coordinating Committee, composed of federal, state, and local agencies, to coordinate New York's nonpoint source control efforts. These efforts include implementation of best management practices by industry and agriculture. In addition, most counties have water quality coordinating committees that address nonpoint source pollution.

⁵⁷ 6 NYCRR 754.1. On March 23, 1999, DEC issued proposed regulations that would reorganize and revise its SPDES permit regulations. See 6 NYCRR 750-1.11 (proposed rule).

⁵⁸ 6 NYCRR 755.1; 6 NYCRR 750-1.15 (proposed rule). The proposed rule states that SPDES permits issued for discharges to groundwater can be for terms up to 10 years.

⁵⁹ 6 NYCRR 750-1.19 (6) (proposed rule).

⁶⁰ 1994 state legislation required DEC to develop a priority ranking system for review of SPDES permits. Environmental Conservation Law § 17-0817. DEC's proposed SPDES regulations include a priority ranking system. 6 NYCRR 750-1.20 (proposed rule). DEC contact: Warren Lavery, (518) 457-0656.



MATTHEW
BENDER
1275 BROADWAY
ALBANY, NEW YORK 12204