

May 12, 2011

Mr. Paul Currier, P.E.
Administrator, Watershed Management Bureau
New Hampshire Department of Environmental Services
29 Hazen Drive
P.O. Box 95
Concord, NH 03302-0095

SUBJECT: Approval of 24 Lake Phosphorus TMDLs

Dear Mr. Currier:

Thank you for your submission of New Hampshire's 24 Total Maximum Daily Loads (TMDLs) for *Lake Phosphorus*. These water bodies were included on the State's 2008 303(d) list and were prioritized for TMDL development. The purpose of these TMDLs for New Hampshire waters is to address phosphorus-related impairments including chlorophyll-a and hepatotoxic cyanobacteria, and low dissolved oxygen concentration and dissolved oxygen percent saturation.

The U.S. Environmental Protection Agency (EPA) hereby approves New Hampshire's 24 *Lake Phosphorus TMDLs*, received by EPA on January 28, February 7, and February 28, 2011. EPA has determined that these TMDLs meet the requirements of §303(d) of the Clean Water Act (CWA), and of EPA's implementing regulations (40 CFR Part 130). Attached is a copy of our approval documentation.

My staff and I look forward to continued cooperation with the NH DES in exercising our shared responsibility of implementing the requirements under Section 303(d) of the CWA.

If you have any questions, please contact Stephen Silva (617-918-1561) or Steven Winnett (617-918-1687) of my staff.

Sincerely,

/s/

Stephen S. Perkins, Director
Office of Ecosystem Protection

Cc: Harry Stewart (NHDES)
Gregg Comstock (NHDES)
Peg Foss (NHDES)
Stephen Silva, EPA
Steven Winnett, EPA

EPA NEW ENGLAND'S TMDL REVIEW

TMDL: 24 Lake Phosphorus TMDLs

Baboosic Lake	NHLAK700060905-01-01
Back Lake	NHLAK801010203-01-01
Country Pond	NHLAK700061403-03-01
Dorrs Pond	NHLAK700060802-01
Flints Pond	NHLAK700040402-01
Forest Lake	NHLAK802010401-01-01
French Pond	NHLAK700030504-02-01
Governors Lake	NHLAK600030703-01
Greenwood Pond	NHLAK700061403-07
Halfmoon Pond	NHLAK700061403-08
Harvey Lake	NHLAK700060502-05
Horseshoe Pond	NHLAK700061002-03
Hunkins Pond	NHLAK700020201-02
Long Pond	NHLAK600030606-01
Nutt Pond	NHLAK700060803-01
Pawtuckaway Lake	NHLAK600030704-02-01
Pine Island Pond	NHLAK700060703-04
Robinson Pond	NHLAK700061203-06-01
Sandy Pond	NHLAK700060804-03-01
Sebbins Pond	NHLAK700060804-02
Showell Pond	NHLAK600030802-04
Sondogardy Pond	NHLAK700060101-02-01
Stevens Pond	NHLAK700060803-02
Tom Pond	NHLAK700030304-05

Location: Statewide, New Hampshire

STATUS: Final

IMPAIRMENT/POLLUTANT: These twenty four water body segments are not meeting criteria for phosphorus and are not supporting the designated uses of Aquatic Life and/or Primary Contact Recreation Use. They are impaired with combinations of chlorophyll-a and hepatotoxic cyanobacteria, and low dissolved oxygen concentration and dissolved oxygen percent saturation. Year-around TMDL submissions are presented for total phosphorus.

BACKGROUND: The NH Department of Environmental Services (DES) submitted to EPA New England the final Total Maximum Daily Load Analyses for *24 Lake Phosphorus TMDLs* (the "TMDLs," "submissions," or "Reports") in three parts, with transmittal letters dated January 28, February 7, and February 28, 2011. There is one report per water body (listed above), all of which EPA is approving with this action. DES sent EPA a prototype draft report in February 2008, and after substantial review, EPA responded with comments in April 2009. DES addressed EPA's comments in the final draft TMDL documents, which it sent to EPA in July

2009. DES released the 24 reports for public review in four batches, from December 2009 to June 2010.

The submissions included:

- Final TMDL reports for phosphorus in the 24 lakes and ponds;
- Implementation plans for achieving TMDL reductions, Chapters 7;
- References, Chapters 11;
- Methodology for Determining Target Criteria, Appendices A;
- LLRM – Lake Loading Response Model Users Guide, Appendices B; and
- Land Use Categories, Export Coefficients, and Additional Calculations, Appendices C.

The following review explains how the TMDL submissions meet the statutory and regulatory requirements of TMDLs in accordance with § 303(d) of the Clean Water Act and EPA's implementing regulations in 40 CFR Part 130.

REVIEWERS: Steven Winnett (617-918-1687) E-mail: winnett.steven@epa.gov

REVIEW ELEMENTS OF TMDLs

Section 303(d) of the Clean Water Act (CWA) and EPA's implementing regulations at 40 C.F.R. § 130 describe the statutory and regulatory requirements for approvable TMDLs. The following information is generally necessary for EPA to determine if a submitted TMDL fulfills the legal requirements for approval under Section 303(d) and EPA regulations, and should be included in the submittal package. Use of the verb "must" below denotes information that is required to be submitted because it relates to elements of the TMDL required by the CWA and by regulation.

1. Description of Water Body, Pollutant of Concern, Pollutant Sources and Priority Ranking

*The TMDL analytical document must identify the water body as it appears on the State/Tribe's 303(d) list, the pollutant of concern and the priority ranking of the water body. The TMDL submittal must include a description of the point and nonpoint sources of the pollutant of concern, including the magnitude and location of the sources. Where it is possible to separate natural background from nonpoint sources, a description of the natural background must be provided, including the magnitude and location of the source(s). Such information is necessary for EPA's review of the load and wasteload allocations which are required by regulation. The TMDL submittal should also contain a description of any important assumptions made in developing the TMDL, such as: (1) the assumed distribution of land use in the watershed; (2) population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources; (3) present and future growth trends, if taken into consideration in preparing the TMDL; and, (4) explanation and analytical basis for expressing the TMDL through surrogate measures, if applicable. Surrogate measures are parameters such as percent fines and turbidity for sediment impairments, or chlorophyll *a* and phosphorus loadings for excess algae.*

The twenty four water bodies are located in towns throughout the State of New Hampshire, as described in Chapters 2.1 and in the attached list. The Reports describe the pollutant of concern, total phosphorus (TP), and the phosphorus related impairments from which the water bodies suffer, such as excess chlorophyll *a*, hepatotoxic cyanobacteria, dissolved oxygen concentration, and dissolved oxygen percent saturation (TMDLs Sections 2.5). Designated uses, such as primary contact recreation and aquatic life use, are identified in TMDLs Sections 2.2. The Reports list the water bodies as they appear on the State's 2010 303(d) list and explain that they had been ranked as a low priority for TMDL development because it was unknown if funding was available to do the TMDLs. When funding became available, DES increased the priority for TMDL development (TMDLs Sections 2.5). The documents also describe the TMDL study areas (TMDLs Sections 2.1) and their land uses (TMDLs Figures 3-1 and Tables 3-2).

The submissions include a discussion of the point and nonpoint sources that contribute to the water quality impairments (TMDLs Sections 3.0), as well as a discussion of the water monitoring and data that indicate the condition of the water bodies (TMDLs Sections 2.1, pp. 8-23). The major sources of phosphorus pollution to the watersheds include atmospheric deposition, internal cycling, waterfowl, septic systems, and direct runoff from the shorelines and the contributing watersheds and their tributaries (TMDLs Sections 3.2).

Assessment: NH DES has adequately identified the water bodies, the pollutant of concern, and the magnitude and locations of the sources of pollution.

2. Description of the Applicable Water Quality Standards and Numeric Water Quality Target

The TMDL submittal must include a description of the applicable State/Tribe water quality standard, including the designated use(s) of the water body, the applicable numeric or narrative water quality criterion, and the antidegradation policy. Such information is necessary for EPA's review of the load and wasteload allocations which are required by regulation. A numeric water quality target for the TMDL (a quantitative value used to measure whether or not the applicable water quality standard is attained) must be identified. If the TMDL is based on a target other than a numeric water quality criterion, then a numeric expression, usually site specific, must be developed from a narrative criterion and a description of the process used to derive the target must be included in the submittal.

The 24 lakes and ponds are impaired by phosphorus (TMDLs, Sections 1.0), and all are classified in Class B (TMDLs Sections 2.2). NH DES's water quality standards and policies specify the following goals for Class B waters, including goals for dissolved oxygen (DO) and chlorophyll *a* (TMDLs Sections 2.3):

- Env-Wq 1703.14: Class B waters shall contain no phosphorus in such concentrations that would impair any existing or designated uses, unless naturally occurring.
- Env-Wq 1703.14: Existing discharges containing either phosphorus or nitrogen that encourage cultural eutrophication shall be treated to remove phosphorus or nitrogen to ensure attainment and maintenance of water quality standards.
- Env-Wq 1703.14: There shall be no new or increased discharges of phosphorus into lakes and ponds, and there shall be no new or increased discharges containing phosphorus or nitrogen to tributaries of lakes or ponds that would contribute to cultural eutrophication or growth of weeds or algae in such lakes or ponds.
- Env-Wq 1703.07 (b): Except as naturally occurs, or in waters identified in RSA 485-A:8, III, or subject to (c) below, Class B waters shall have a DO content of at least 75% of saturation, based on a daily mean, and an instantaneous minimum DO concentration of at least 5 mg/L.
- Env-Wq 1703.07 (d): Unless naturally occurring or subject to (a) above, surface waters within the top 25 percent of depth of thermally unstratified lakes, ponds, impoundments and reservoirs or within the epilimnion shall contain a DO content of at least 75 percent saturation, based on a daily mean and an instantaneous minimum DO content of at least 5 mg/L. Unless naturally occurring, the DO content below those depths shall be consistent with that necessary to maintain and protect existing and designated uses.
- The NH DES policy for interim nutrient threshold for primary contact recreation (i.e. swimming) in NH lakes is 15 ug/L chlorophyll *a* (NH DES 2008a). Lakes were also listed even if scums were present only along a downwind shore.

New Hampshire has no numeric criteria for phosphorus in lakes and ponds. Consequently, NH DES derived numeric TP targets of 12 ug/L, using procedures described in Sections 2.6 and detailed in Appendices A that will allow the water bodies to attain their designated uses. The targets are based on an analysis of phosphorus conditions in both impaired and unimpaired lakes in the state, and are supported by additional analyses of nutrient levels for commonly recognized trophic levels, and by the use of probabilistic equations to establish targets that minimize the risk of impaired conditions. All three methods produced similar results, and a detailed discussion of

them can be found in Appendices A. Margins of safety were estimated given the conservative assumptions used in setting the targets (TMDLs Sections 5.2; Appendices A, Sections 1.3.1 – 1.3.3). For two of the lakes (Long and Sandy), the analysis showed that the natural background condition phosphorus concentrations were slightly higher than 12 ug/L, so the targets for these water bodies were set at the natural background concentration (12.4 and 12.6 ug/l, respectively) as it is considered impractical to reduce loads below that point.

This is a reasonable approach in the absence of adopted numeric nutrient criteria since it is based on substantial state-specific data and falls within the range of EPA 304(a) criteria guidance, including EPA's 1986 Quality Criteria for Water (Gold Book) which recommends 0.025 mg/l (25 ug/L) phosphorus for lakes and ponds, and EPA's 2000 Ambient Water Quality Criteria Recommendations for Lakes and Reservoirs in Nutrient Ecoregions VIII and XIV (into which NH falls) which suggests 0.008 mg/l (8 ug/L) phosphorus.

Assessment: EPA New England concludes that NH DES has properly presented its water quality standards when setting numeric water quality targets.

3. Loading Capacity - Linking Water Quality and Pollutant Sources

As described in EPA guidance, a TMDL identifies the loading capacity of a water body for a particular pollutant. EPA regulations define loading capacity as the greatest amount of loading that a water can receive without violating water quality standards (40 C.F.R. § 130.2(f)). The loadings are required to be expressed as either mass-per-time, toxicity or other appropriate measure (40 C.F.R. § 130.2(i)). The TMDL submittal must identify the water body's loading capacity for the applicable pollutant and describe the rationale for the method used to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources. In most instances, this method will be a water quality model. Supporting documentation for the TMDL analysis must also be contained in the submittal, including the basis for assumptions, strengths and weaknesses in the analytical process, results from water quality modeling, etc. Such information is necessary for EPA's review of the load and wasteload allocations which are required by regulation.

In many circumstances, a critical condition must be described and related to physical conditions in the water body as part of the analysis of loading capacity (40 C.F.R. § 130.7(c)(1)). The critical condition can be thought of as the "worst case" scenario of environmental conditions in the water body in which the loading expressed in the TMDL for the pollutant of concern will continue to meet water quality standards. Critical conditions are the combination of environmental factors (e.g., flow, temperature, etc.) that results in attaining and maintaining the water quality criterion and has an acceptably low frequency of occurrence. Critical conditions are important because they describe the factors that combine to cause a violation of water quality standards and will help in identifying the actions that may have to be undertaken to meet water quality standards.

NH DES describes the rationale for the methods used to establish the cause-and-effect relationship between the numeric targets and the identified pollutant sources. Current yearly phosphorus loads (in kg/yr) to the lakes and ponds were established using the ENSR-LRM model (TMDLs Sections 3.0), and included specification of the loads from each lake or pond's contributing subwatersheds and tributaries, from the direct drainage to the water bodies, and from precipitation and baseflow (TMDLs Sections 3.1-3.4). Lake and pond responses to the loading (the resulting phosphorus concentrations) were calculated using the average of five models, including Kirchner-Dillon, Vollenweider, Reckhow, Larsen-Mercier, and Jones-Bachman (TMDLs, Sections 3.5). The allowable annual loadings were then calculated using the ENSR-LRM loading and lake response models' outputs (TMDLs, Section 4.1) and the daily

loads were determined using a statistical estimation technique which accounts for the variability of the loads throughout the year (TMDLs Sections 4.2).

Assessment: EPA New England concludes that the loading capacities, having been calculated using a set of recognized water quality models, and using observed concentration data and water quality targets consistent with narrative water quality criteria and observed conditions from impaired and unimpaired water bodies, have been appropriately set at levels necessary to attain and maintain applicable water quality standards. The TMDLs are based on a reasonable approach for establishing the relationship between pollutant loading and water quality.

4. Load Allocation (LA)

EPA regulations require that a TMDL include LAs, which identify the portion of the loading capacity allocated to existing and future nonpoint sources and to natural background (40 C.F.R. § 130.2(g)). Load allocations may range from reasonably accurate estimates to gross allotments (40 C.F.R. § 130.2(g)). Where it is possible to separate natural background from nonpoint sources, load allocations should be described separately for background and for nonpoint sources.

If the TMDL concludes that there are no nonpoint sources and/or natural background, or the TMDL recommends a zero load allocation, the LA must be expressed as zero. If the TMDL recommends a zero LA after considering all pollutant sources, there must be a discussion of the reasoning behind this decision, since a zero LA implies an allocation only to point sources will result in attainment of the applicable water quality standard, and all nonpoint and background sources will be removed.

The submissions identify the portion of the loading capacities that would be attributable to nonpoint sources and natural background, normally assigned to the load allocations (LAs). In these watersheds, nonpoint sources of pollution include diffuse stormwater runoff and overland flow, surface water base flow and groundwater seepage, septic systems, internal cycling of nutrients, waterfowl, and atmospheric deposition. Because there are little available data in these watersheds to determine how much of the nonpoint sources are attributable to regulated vs. unregulated sources, NH DES has chosen to allocate unregulated stormwater and other nonpoint source runoff to the waste load allocations (WLAs), which EPA has said is an acceptable approach when insufficient data are available.

Assessment: In the absence of sufficient data to separate the two, EPA New England concludes that it is acceptable for NH DES to include that portion of the loading capacities that would normally be attributable to the load allocations (LAs) into the waste load allocations (WLAs), below.

5. Wasteload Allocation (WLA)

EPA regulations require that a TMDL include WLAs, which identify the portion of the loading capacity allocated to existing and future point sources (40 C.F.R. § 130.2(h)). If no point sources are present or if the TMDL recommends a zero WLA for point sources, the WLA must be expressed as zero. If the TMDL recommends a zero WLA after considering all pollutant sources, there must be a discussion of the reasoning behind this decision, since a zero WLA implies an allocation only to nonpoint sources and background will result in attainment of the applicable water quality standard, and all point sources will be removed.

In preparing the wasteload allocations, it is not necessary that each individual point source be assigned a portion of the allocation of pollutant loading capacity. When the source is a minor discharger of the pollutant of concern or if

the source is contained within an aggregated general permit, an aggregated WLA can be assigned to the group of facilities. But it is necessary to allocate the loading capacity among individual point sources as necessary to meet the water quality standard.

The TMDL submittal should also discuss whether a point source is given a less stringent wasteload allocation based on an assumption that nonpoint source load reductions will occur. In such cases, the State/Tribe will need to demonstrate reasonable assurance that the nonpoint source reductions will occur within a reasonable time.

As stated above, because there are little available data in these watersheds to determine how much of the nonpoint sources are attributable to regulated vs. unregulated sources, NH DES has chosen to allocate unregulated stormwater and other nonpoint source runoff to the waste load allocations (WLAs), which EPA has said is an acceptable approach when insufficient data are available. In these submissions, NH DES has developed WLAs which allocate the allowable loads for the water bodies amongst the nutrient sources. To achieve the target concentrations of 12 ug/l or more, they use the loading models to iteratively reduce the loads from the major sources until the target loads are reached. Those major sources are direct drainage, the tributary watersheds, internal cycling, septic systems, and waterfowl. Atmospheric deposition is an additional source of nutrients but DES has not allocated any of the load reductions to it. The total reductions necessary to achieve the target concentrations differ from one water body to another, with some requiring large reductions and some requiring much less (TMDLs, Sections 4.1).

The allocations generally call for significant reductions from the contributing tributary watersheds, and often from direct drainage. However, depending on the magnitude of each source and the practicality of controlling them in each particular watershed, the load allocations amongst the 24 water bodies differ as to 1.) whether they specify reductions from internal cycling, septic systems, or waterfowl, and 2.) how large the reductions are needed to be (TMDLs Tables 4.1). The final allocations are designed to be sufficient and achievable, although DES admits that there will be some challenges in achieving many of them.

As a further check on the WLAs, DES assessed and compared alternate loading scenarios to the TMDL allocations, including the natural environmental backgrounds, the reduction of loads needed to meet the 12 ug/l targets, and if applicable, complete removal of septic loads, complete removal of internal loads, and complete removal of waterfowl (TMDLs Tables 6.1 and 6.2). The documents discuss each alternate scenario and their results in Chapters 6.

Assessment: EPA concludes that the WLAs have been reasonably set with analyses of how much the various major sources of nutrients can be practically reduced to achieve the allowable loads in the water bodies. In the absence of specific information to determine the relative contributions of regulated and unregulated sources of stormwater runoff to the water bodies, EPA New England concludes that it is acceptable and reasonable for all sources of nutrients to be included in the WLAs.

6. Margin of Safety (MOS)

The statute and regulations require that a TMDL include a margin of safety to account for any lack of knowledge concerning the relationship between load and wasteload allocations and water quality (CWA § 303(d)(1)(C), 40 C.F.R. § 130.7(c)(1)). EPA guidance explains that the MOS may be implicit, i.e., incorporated into the TMDL

through conservative assumptions in the analysis, or explicit, i.e., expressed in the TMDL as loadings set aside for the MOS. If the MOS is implicit, the conservative assumptions in the analysis that account for the MOS must be described. If the MOS is explicit, the loading set aside for the MOS must be identified.

The water quality targets for these TMDLs were developed using three methods discussed above. The first, a statistical analysis of the conditions of other impaired and nonimpaired N.H. lakes, used summer epilimnetic concentrations to set the water quality targets, while the TMDLs themselves were based on empirical models, based on annual lake concentrations, which assume fully mixed conditions. Since studies on other lakes show that annual concentrations can be substantially higher than summer epilimnetic concentrations, this produces an implicit MOS of approximately 20% (TMDLs Appendices A, Section 1.3.1). The second method, which uses the trophic state classification of the lakes, also incorporates an approximately 20% implicit MOS using similar conservative assumptions involving annual versus summer conditions (TMDLs Appendices Section 1.3.2). The third target setting approach using probability analysis of the risk of summer blooms also used conservative assumptions involving summer versus annual conditions and produced an implicit MOS of approximately 20% (TMDLs Appendices A, Section 1.3.3).

Assessment: EPA New England concurs that adequate margins of safety are provided by the implicit MOS of approximately 20% produced by the conservative assumptions and data used in the three target setting procedures used in the TMDLs.

7. Seasonal Variation

The statute and regulations require that a TMDL be established with consideration of seasonal variations. The method chosen for including seasonal variations in the TMDL must be described CWA § 303(d)(1)(C), 40 C.F.R. § 130.7(c)(1).

These TMDLs address seasonal variation because the required reductions in phosphorus were calculated for the conditions during the critical, summer season, when occurrence of nuisance algal blooms, low dissolved oxygen and likelihood of nutrient scums are greatest. Therefore, the TMDL allocations protect designated uses during the entire year (TMDLs Sections 4.4 and 4.5).

Assessment: EPA New England concludes that seasonal variations have been adequately accounted for as the TMDLs were developed to be protective during the critical period for phosphorus, and will therefore be more than adequately protective during the other seasons.

8. Monitoring Plan for TMDLs Developed Under the Phased Approach

EPA's 1991 document, Guidance for Water Quality-Based Decisions: The TMDL Process (EPA 440/4-91-001), recommends a monitoring plan when a TMDL is developed under the phased approach. The guidance recommends that a TMDL developed under the phased approach also should provide assurances that nonpoint source controls will achieve expected load reductions. The phased approach is appropriate when a TMDL involves both point and nonpoint sources and the point source is given a less stringent wasteload allocation based on an assumption that nonpoint source load reductions will occur. EPA's guidance provides that a TMDL developed under the phased approach should include a monitoring plan that describes the additional data to be collected to determine if the load reductions required by the TMDL lead to attainment of water quality standards.

The State proposes continuing DES and volunteer monitoring by stakeholders, the Lake Lay Monitoring Program (LLMP), and Volunteer Lake Assessment Program (VLAP) to ensure that water quality improvement activities are adjusted as monitoring indicates changes in the water quality of the lakes and ponds. The State briefly discusses their monitoring recommendations and plans in the TMDL reports (TMDLs Chapters 8).

Assessment: Addressed, though not required.

9. Implementation Plans

On August 8, 1997, Bob Perciasepe (EPA Assistant Administrator for the Office of Water) issued a memorandum, "New Policies for Establishing and Implementing Total Maximum Daily Loads (TMDLs)," that directs Regions to work in partnership with States/Tribes to achieve nonpoint source load allocations established for 303(d)-listed waters impaired solely or primarily by nonpoint sources. To this end, the memorandum asks that Regions assist States/Tribes in developing implementation plans that include reasonable assurances that the nonpoint source load allocations established in TMDLs for waters impaired solely or primarily by nonpoint sources will in fact be achieved. The memorandum also includes a discussion of renewed focus on the public participation process and recognition of other relevant watershed management processes used in the TMDL process. Although implementation plans are not approved by EPA, they help establish the basis for EPA's approval of TMDLs.

Brief implementation plans are provided in the submissions (TMDLs Chapters 7) which summarize the major identified sources of pollution, identify the necessary reductions from each, and give general and specific recommendations for abating them. The plans discuss several types of best management practices to reduce runoff from stormwater, agricultural operations, residential areas, septic systems, lawns, and highways, (TMDLs Tables 7.1) and the contents of watershed management plans if they are applicable.

Assessment: Addressed, though not required.

10. Reasonable Assurances

EPA guidance calls for reasonable assurances when TMDLs are developed for waters impaired by both point and nonpoint sources. In a water impaired by both point and nonpoint sources, where a point source is given a less stringent wasteload allocation based on an assumption that nonpoint source load reductions will occur, reasonable assurance that the nonpoint source reductions will happen must be explained in order for the TMDL to be approvable. This information is necessary for EPA to determine that the load and wasteload allocations will achieve water quality standards.

In a water body impaired solely by nonpoint sources, reasonable assurances that load reductions will be achieved are not required in order for a TMDL to be approvable. However, for such nonpoint source-only waters, States/Tribes are strongly encouraged to provide reasonable assurances regarding achievement of load allocations in the implementation plans described in section 9, above. As described in the August 8, 1997 Perciasepe memorandum, such reasonable assurances should be included in State/Tribe implementation plans and "may be non-regulatory, regulatory, or incentive-based, consistent with applicable laws and programs."

Reasonable assurance is not required because point sources are not given less stringent wasteload allocations based on the assumption of future nonpoint source load reductions. Although not required, the TMDLs cite several additional elements of reasonable assurance:

- The enforcement of RSA 485-A:12, which requires those responsible for sources of pollution that lower water quality below the minimum requirements of the classification to abate such pollution;
- NH DES will work with watershed stakeholders to identify specific phosphorus sources within the watersheds;
- Support for Lakes Management and Protection Plans through RSA 483-A:7; and
- For lakes included in the NHDES Volunteer Lake Assessment Program, support from NH DES staff on phosphorus reduction opportunities and help securing CWA Section 319 (nonpoint source) program grants where eligible.

Assessment: Not required.

11. Public Participation

EPA policy is that there must be full and meaningful public participation in the TMDL development process. Each State/Tribe must, therefore, provide for public participation consistent with its own continuing planning process and public participation requirements (40 C.F.R. § 130.7(c)(1)(ii)). In guidance, EPA has explained that final TMDLs submitted to EPA for review and approval must describe the State/Tribe's public participation process, including a summary of significant comments and the State/Tribe's responses to those comments. When EPA establishes a TMDL, EPA regulations require EPA to publish a notice seeking public comment (40 C.F.R. § 130.7(d)(2)).

Inadequate public participation could be a basis for disapproving a TMDL; however, where EPA determines that a State/Tribe has not provided adequate public participation, EPA may defer its approval action until adequate public participation has been provided for, either by the State/Tribe or by EPA.

NH DES summarizes its public participation in the TMDL reports (TMDLs Chapters 10). NH DES released the draft TMDLs to the public in four batches between December 14, 2009 and May 17, 2010. The releases of the drafts were announced on the Department's website and in notices at the local town halls. Copies of the TMDLs were made available to the public at the town halls and were sent to the relevant town commissions. The releases began 4-6 week comment periods. The agency received comments for only one of the 24 TMDLs during the public notice periods and for two outside the comment periods. The TMDL submissions include copies of the submitted comments and the Department's responses in appendices to the final TMDL submissions.

Assessment: EPA New England has reviewed all comments and the agencies' responses to comments. EPA concludes that NH DES involved the public during the development of the 24 *Lake Phosphorus TMDLs*, has provided adequate opportunities for the public to comment on the TMDLs, and has provided reasonable responses to the comments received.

12. Submittal Letter

A submittal letter should be included with the TMDL analytical document, and should specify whether the TMDL is being submitted for a technical review or is a final submittal. Each final TMDL submitted to EPA must be accompanied by a submittal letter that explicitly states that the submittal is a final TMDL submitted under Section 303(d) of the Clean Water Act for EPA review and approval. This clearly

establishes the State/Tribe's intent to submit, and EPA's duty to review, the TMDL under the statute. The submittal letter, whether for technical review or final submittal, should contain such information as the name and location of the water body, the pollutant(s) of concern, and the priority ranking of the water body.

Comment: Submittal letters with appropriate information were included with the final submissions.

Table 1: TMDL Lakes and Ponds, and the 2010 303(d) List of Phosphorus Related Impairments for Each Lake AUID

AUID	LAKE	TOWN	PCR		ALUS			
			CHL A	CYANO	DO mg/L	DO % SAT	CHL A	TP
NHLAK700060905-01-01	BABOOSIC LAKE	AMHERST	√	√			√	√
NHLAK801010203-01-01	BACK LAKE	PITTSBURG		√				
NHLAK700061403-03-01	COUNTRY POND	KINGSTON		√				
NHLAK700060802-01	DORRS POND	MANCHESTER	√		√	√	√	√
NHLAK700040402-01	FLINTS POND	HOLLIS	√		√	√		
NHLAK802010401-01-01	FOREST LAKE	WINCHESTER	√					√
NHLAK700030504-02-01	FRENCH POND	HENNIKER	√				√	√
NHLAK600030703-01	GOVERNORS LAKE	RAYMOND	√				√	√
NHLAK700061403-07	GREENWOOD POND	KINGSTON		√				
NHLAK700061403-08	HALFMOON POND	KINGSTON	√					
NHLAK700060502-05	HARVEY LAKE	NORTHWOOD	√	√		√		
NHLAK700061002-03	HORSESHOE POND	MERRIMACK	√	√				
NHLAK700020201-02	HUNKINS POND	SANBORNTON	√	√		√	√	√
NHLAK600030606-01	LONG POND	BARRINGTON	√				√	√
NHLAK700060803-01	NUTT POND	MANCHESTER	√		√	√	√	√
NHLAK600030704-02-01	PAWTUCKAWAY LAKE	NOTTINGHAM		√		√	√	√
NHLAK700060703-04	PINE ISLAND POND	MANCHESTER	√	√	√	√		

NHLAK700061203-06-01	ROBINSON POND	HUDSON	√	√		√	√	√
NHLAK700060804-03-01	SANDY POND	BEDFORD	√				√	√
NHLAK700060804-02	SEBBINS POND	BEDFORD	√				√	√
NHLAK600030802-04	SHOWELL POND	SANDOWN	√	√			√	√
NHLAK700060101-02-01	SONDOGARDY POND	NORTHFIELD		√			√	√
NHLAK700060803-02	STEVENS POND	MANCHESTER	√		√	√		
NHLAK700030304-05	TOM POND	WARNER	√				√	√

Data for entry in EPA's National TMDL Tracking System							
TMDL Name	24 Lake Phosphorus TMDLs						
Number of TMDLs*	24						
Type of TMDLs*	Nutrients						
Number of listed causes (from 303(d) list)	74						
Lead State	New Hampshire (NH)						
TMDL Status	Final						
Individual TMDLs listed below							
TMDL Segment name	TMDL Segment ID #	TMDL Pollutant ID# & name	TMDL Impairment Cause(s)	Pollutant endpoint	Unlisted?	NHDES Point Source & ID#	Listed for anything else?
BABOOSIC LAKE	NHLAK700060905-01-01	515 (Total Phosphorus)	291, 357, 515	12 ug/l phosphorus			Bacteria
BACK LAKE	NHLAK801010203-01-01	515 (Total Phosphorus)	357	12 ug/l phosphorus			
COUNTRY POND	NHLAK700061403-03-01	515 (Total Phosphorus)	357	12 ug/l phosphorus			
DORRS POND	NHLAK700060802-01	515 (Total Phosphorus)	291, 449, 450, 357, 515	12 ug/l phosphorus			Chloride
FLINTS POND	NHLAK700040402-01	515 (Total Phosphorus)	291, 449, 450	12 ug/l phosphorus			
FOREST LAKE	NHLAK802010401-01-01	515 (Total Phosphorus)	291, 515	12 ug/l phosphorus			
FRENCH POND	NHLAK700030504-02-01	515 (Total Phosphorus)	291, 515	12 ug/l phosphorus			
GOVERNORS LAKE	NHLAK600030703-01	515 (Total Phosphorus)	291, 515	12 ug/l phosphorus			
GREENWOOD POND	NHLAK700061403-07	515 (Total Phosphorus)	357	12 ug/l phosphorus			
HALFMOON POND	NHLAK700061403-08	515 (Total Phosphorus)	291	12 ug/l phosphorus			
HARVEY LAKE	NHLAK700060502-05	515 (Total Phosphorus)	291,357, 450	12 ug/l phosphorus			
HORSESHOE POND	NHLAK700061002-03	515 (Total Phosphorus)	291,357	12ug/l phosphorus			

HUNKINS POND	NHLAK700020201-02	515 (Total Phosphorus)	291,357, 450, 515	12 ug/l phosphorus			Bacteria
LONG POND	NHLAK600030606-01	515 (Total Phosphorus)	291, 515	12.4 ug/l phosphorus			
NUTT POND	NHLAK700060803-01	515 (Total Phosphorus)	291, 449, 450, 515	12 ug/l phosphorus			Chloride
PAWTUCKAWAY LAKE	NHLAK600030704-02-01	515 (Total Phosphorus)	357, 450, 291, 515	12ug/l phosphorus			Bacteria
PINE ISLAND POND	NHLAK700060703-04	515 (Total Phosphorus)	291, 357, 449, 450	12 ug/l phosphorus			
ROBINSON POND	NHLAK700061203-06-01	515 (Total Phosphorus)	291, 357, 450, 515	12 ug/l phosphorus			Bacteria
SANDY POND	NHLAK700060804-03-01	515 (Total Phosphorus)	291, 515	12.6 ug/l phosphorus			
SEBBINS POND	NHLAK700060804-02	515 (Total Phosphorus)	291, 515	12 ug/l phosphorus			
SHOWELL POND	NHLAK600030802-04	515 (Total Phosphorus)	291, 357, 515	12 ug/l phosphorus			
SONDOGARDY POND	NHLAK700060101-02-01	515 (Total Phosphorus)	357, 291, 515	12 ug/l phosphorus			
STEVENS POND	NHLAK700060803-02	515 (Total Phosphorus)	291, 449, 450	12 ug/l phosphorus			chloride
TOM POND	NHLAK700030304-05	515 (Total Phosphorus)	291, 515	12 ug/l phosphorus			

TMDL Type	Nonpoint Sources
Establishment Date (approval)*	May 12, 2011
EPA Developed	No
Towns affected*	Bradford, Hampstead, Kingston, Tamworth, Washington