UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 1
1 Congress Street, Suite 1100
BOSTON, MA 02114-2023

August 25, 2006

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

Dear Mr. Currier:

Thank you for your final submittal of the Little Harbor TMDL which addresses shellfishing and primary contact recreation uses. The U.S. Environmental Protection Agency (EPA) has determined that the TMDL meets the requirements of Section 303(d) of the Clean Water Act (CWA), and of EPA's implementing regulations (40 CFR Part 130). Enclosed is a copy of our approval documentation.

My staff and I look forward to continued cooperation with the NHDES in exercising our shared responsibility of implementing the requirements under Section 303(d) of the CWA. Please feel free to contact me or my staff if you have any questions or comments on our review.

Sincerely,

/s/

Linda M. Murphy, Director
Office of Ecosystem Protection

Enclosure

cc: Gregg Comstock (NHDES)
Bob Estabrook (NHDES)
Margaret Foss (NHDES)

TMDL: Little Harbor [NHEST600031002-02]
Pollutant: Fecal coliform and enterococcus
Date of Review: August 10, 2006

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 Waterbody, Pollutant of Concern, Pollutant Sources and Priority Ranking

The TMDL analytical document must identify the waterbody as it appears on the State/Tribe's 303(d) list, the pollutant of concern and the priority ranking of the waterbody. 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 chlorophyl *a* and phosphorus loadings for excess algae.

A. Description of Waterbody

The TMDL report prepared by New Hampshire, dated June 2006, includes a TMDL for the Little Harbor assessment unit [NHEST600031002-02]. *A description of the waterbody and the four subwatersheds are included in the report.*

B. Pollutant of Concern

The TMDL report identifies the pollutants of concern, fecal coliform and enterococcus. The State has chosen to develop the TMDL for fecal coliform as measured in accordance with National Shellfish Sanitation Program (NSSP) procedures. Rationale for this decision is provided on page 10 of the TMDL report: "It is expected that bacteria loading reductions needed to meet the NSSP

standards will also cause primary and secondary contact recreation standards to be met."

C. Pollutant Sources

Pollutant sources are identified in the TMDL report (page 19-22). Sources contributing to impairments in Little Harbor include stormwater runoff, illicit discharges, failing septic systems, and marina/boat discharges.

D. Priority Ranking

The Little Harbor TMDL was listed on New Hampshire's 2004 303(d) list as a high priority for TMDL development.

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 waterbody, 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 TMDL document includes a description of the applicable water quality standards, designated uses, the numeric water quality criterion, and the antidegradation policy (page 9-10).

3. Loading Capacity - Linking Water Quality and Pollutant Sources

As described in EPA guidance, a TMDL identifies the loading capacity of a waterbody 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 waterbody'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 waterbody 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 waterbody in which the loading expressed in the TMDL for the pollutant of concern will continue to meet water quality standards. *Critical condition*s 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.

The allowable load for Little Harbor is 695.4 billion organisms/day, as presented on page 27 of the TMDL report. Percent reductions were also provided for categories of sources (i.e., stormwater runoff). However, it is important to note that individual sources may require greater reductions than those presented in the report, especially where localized impacts occur. EPA requested that NHDES include similar language in the TMDL report. Such language is presented on page 27 of the TMDL report.

4. Load Allocations (LAs)

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.

Load Allocations are presented on page 27 of the TMDL report, and only apply to areas outside of the Phase II designated portions of the watershed. Sources given LA's include stormwater runoff, illicit discharges, failing septic systems, and discharges from marinas/boats.

5. Wasteload Allocations (WLAs)

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.

Wasteload allocations for the Phase II designated portions of the watershed are presented on page 27. Sources include stormwater runoff, illicit connections, wastewater discharges and SSO's/CSO's. Allocations of 0 were given to the latter two categories even though there are no known discharges to Little Harbor.

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.

As documented on page 26 of the TMDL report, the water quality criterion was multiplied by 0.9 to provide a 10% MOS.

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)).
NHDES considered seasonal variation in the analysis. The State concluded that using the 90th percentile component of the fecal coliform criteria would adequately address this requirement (page 25 of the TMDL report), as seasonal variations in bacteria concentrations are dwarfed by episodic rain events, which would be captured by the 90th percentile value.

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.

A brief overview of future monitoring is presented on page 31 of the TMDL report.

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.

An implementation plan is provided in the TMDL report.

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 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."

Point sources were not given less stringent allocations in this TMDL, therefore, the reasonable assurance component of TMDL review and approval is not applicable.

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.

The Little Harboor TMDL has been through three rounds of public review. The first public comment draft was distributed on November 8, 2004 to the three towns that surround the assessment units: Portsmouth, New Castle, and Rye, NH. The report was also sent to the Wentworth-by-the-Sea marina and condominium association. At the Same time, the report was posted on the DES website. Finally, a notice about the report was broadcast to the NH estuaries project technical advisory committee and shellfish and living resources team. The public comment period lasted for 30 days (Nov 8 - Dec 10, 2004).

DES revised the document based on the comments received and then held a second comment period starting on October 26, 2005. The second draft of the TMDL was mailed to the three towns that surround the assessment units, the Wentworth-by-the-Sea marina and condominium association, and the Conservation Law Foundation. The second comment period lasted 30 days (Oct 26, 2005 - Nov

30, 2005).

DES revised the document again based on comments received. The third draft of the TMDL document was sent to the three towns that surround the assessment units, the Wentworth-by-the-Sea marina, EPA, and CLF on April 18, 2006. EPA provided written comments on the third draft document on April 10, 2006 and May 8, 2006. Finally, DES received additional comments during a meeting with representatives from the City of Portsmouth, Rye, and EPA on May 16, 2006. DES provided responses to comments prior to submitting the final TMDL to EPA for review and approval.

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 waterbody, the pollutant(s) of concern, and the priority ranking of the waterbody.

A submittal letter was included with the TMDL document.

13. Other Comments:

Data for entry in EPA's National TMDL Tracking System

TMDL Name	**Little Harbor [NHEST600031002-02]**
Number of TMDLs*	2
Lead State	New Hampshire (NH)
TMDL Status	Final
Pollutant ID	259 (Fecal Coliform) 605 (Enterococcus)
TMDL End Points	Shellfishing; Fecal coliform: geometric mean of 14 MPN/100 ml and no more than 10% of samples shall exceed 42 MPN/100 ml. Primary Contact Recreation; Enterococcus: geometric mean of 35/100 ml and no greater than 104/100 ml in any one sample. Daily Load= 695.4 billion fecal coliform organisms per day; NH believes that the TMDL for fecal coliform will also result in attainment of the primary contact recreation use as measured by enterococcus.
TMDL Type	Point and nonpoint source
NPDES number for Point Source	The only permitted point sources fall under the NPDES Phase II stormwater program.
List ID (from system)	NHEST600031002-02
Impairment ID (from system)	Shellfishing and Primary Contact Recreation
Cycle (list date)	2002 and 2004
Establishment Date (approval)	August 25, 2006
EPA Developed	No
Towns affected*	Portsmouth, New Castle, and Rye, New Hampshire