

June 21, 2006

Robert W. Golledge, Jr., Commissioner
Massachusetts Department of Environmental Protection
1 Winter Street
Boston, MA 02108

Re: 2004 Clean Water Act Section 303(d) List Partial Approval/Disapproval

Dear Commissioner Golledge:

Thank you for your final submittal of the 2004 Clean Water Act Section 303(d) list, Massachusetts Year 2004 Integrated List of Waters - Category 5, dated April 19, 2005. In accordance with Section 303(d) of the Clean Water Act and 40 CFR §130.7, the U.S. Environmental Protection Agency (EPA) conducted a complete review of Massachusetts' 2004 Section 303(d) list, supporting documentation and *A TMDL Alternative Regulatory Pathway Proposal for the Management of Selected Mercury-Impaired Waters* (Mercury Proposal). EPA's review of Massachusetts' 2004 Section 303(d) list is attached.

Based upon our review of the submittal, we hereby partially approve and partially disapprove Massachusetts' 2004 303(d) list. Specifically, EPA approves the Commonwealth's decision to list waterbody segments and associated pollutants set forth in the listing document along with the Commonwealth's priority ranking for these waters and pollutants. However, EPA disapproves the Commonwealth's decision not to list the 90 lakes and ponds impaired by atmospheric deposition as set out in the Mercury Proposal. Massachusetts indicates in its submission that the total reductions needed in mercury air deposition to meet the Commonwealth's water quality standard range from 57 to greater than 90 percent. The Mercury Proposal points out that the mercury contributions from air deposition include at least 23 percent from international and background sources, which are not subject to state or federal regulation. EPA's own estimates indicate that an even larger share of deposition comes from non-U.S. sources. Therefore, EPA believes that listing the mercury impaired lakes and ponds is necessary because Massachusetts has not demonstrated that there are other pollution control requirements sufficient to achieve the reductions in mercury the Commonwealth estimates are needed to implement the applicable water quality standard.

Although EPA is disapproving the Commonwealth's decision to remove the mercury-impaired waters from the 303(d) list, EPA recognizes the significant efforts of Massachusetts to address the Commonwealth's mercury sources. Massachusetts is a leader among states in developing a comprehensive and aggressive mercury reduction program. As noted in the Commonwealth's submission, Massachusetts' mercury programs include strong regulatory controls on major mercury emitters, located within the Commonwealth, and pollution prevention programs for sources such as municipal waste combustors, dentists, and schools. While EPA has determined that the best way to address mercury impaired waters is within the context of the 303(d) listing process (as discussed more fully in the attached memorandum), EPA is also committed to developing a longer-term national framework for listing mercury impaired waters and developing mercury TMDLs, an effort in which we will involve Massachusetts and other states in the future.

EPA will open a public comment period to receive comments concerning our decision to add these waters to the Commonwealth's 303(d) list. After considering comments received from the public, EPA will make any appropriate revisions to its decision to add the waters to the list and will transmit to the Commonwealth the list of waters added.

I would like to thank your staff for their assistance in working with my staff in finalizing the 2004 Section 303(d) list. We look forward to continued cooperation with MA DEP in implementing the requirements under Section 303(d) of the CWA. Please feel free to contact me or Mike Hill at 617-918-1398, if you have any questions or comments on our review.

Sincerely,

/s/

Linda M. Murphy, Director
Office of Ecosystem Protection

Enclosure

cc: Arleen O'Donnell MA DEP
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**EPA - NEW ENGLAND'S REVIEW
OF MASSACHUSETTS 2004 SECTION 303(d) LIST**

I. INTRODUCTION

Section 303(d) of the Clean Water Act (CWA) and the implementing regulations at 40 CFR 130.7 require states to identify those waterbodies that are not expected to meet surface water quality standards after the implementation of technology-based controls and to prioritize and schedule them for the development of a total maximum daily load (TMDL). A TMDL establishes the maximum amount of a pollutant that may be introduced into a waterbody and still ensure attainment and maintenance of water quality standards. Furthermore, a TMDL must also allocate that acceptable pollutant load among all potential sources. The formulation of the 303(d) List includes a more rigorous public review and comment process than does reporting under section 305(b), and the final version of the list must be formally approved by the EPA. Prior to 2004 states prepared and submitted to the EPA a biennial *Summary of Water Quality Report* in accordance with the requirements of section 305(b) and a separate section 303(d) *List of Impaired Waters*. States may combine the reporting elements of both sections 305(b) and 303(d) of the CWA to produce an integrated report. (See 2004 Integrated Reporting Guidance (IRG)).

The integrated listing format allows states to provide the status of all assessed waters in a single multi-part list. States choosing this option could list each water body or segment thereof in one of five of the following categories:

- 1) All designated uses are supported, no use is threatened;
- 2) Available data and/or information indicate that some, but not all of the designated uses are supported;
- 3) There is insufficient available data and/or information to make a use support determination;
- 4) Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed;
 - 4a) A state developed TMDL has been approved by EPA or a TMDL has been established by EPA for any segment-pollutant combination;
 - 4b) Other required control measures are expected to result in the attainment of an applicable water quality standard in a reasonable period of time;
 - 4c) The non-attainment of any applicable water quality standard for the segment is the result of pollution and is not caused by a pollutant; and
- 5) Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.

Thus, waters listed in Category 5 represent the 303(d) List and are to be reviewed and approved by the EPA. The remaining four categories are submitted in fulfillment of the requirements under section 305(b). Massachusetts chose this new option and formulated a list utilizing EPA's *Guidance for 2004 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act*.

Following the required public participation process the final *Massachusetts Year 2004 Integrated List of Waters: Final listing of the condition of Massachusetts' waters pursuant to Sections 303(d) and 305(b) of the Clean Water Act* (Integrated List) was submitted to the EPA on April 19, 2005.

The Integrated List presents the individual categories of Massachusetts' waters for the 2004 CWA listing cycle along with pertinent supporting documentation on how the lists were derived. An overview of the Massachusetts Water Quality Management Program is provided along with a brief description of the Surface Water Quality Standards (WQS). Finally, the methodology employed for assessing and listing the waters is summarized for each of the uses designated in the WQS.

The Integrated List submission also included a second companion document entitled: *A TMDL Alternative Regulatory Pathway Proposal for the Management of Selected Mercury-Impaired Waters* ("Mercury Proposal"). In the Mercury Proposal, Massachusetts sets forth a strategy and is seeking EPA approval to move 90 lakes and ponds from Category 5 (i.e., the 303(d) List) into Category 4b¹ (i.e., "impaired, but not requiring a TMDL") of the Integrated List.

EPA has conducted a complete review of Massachusetts Year 2004 Integrated List, Mercury Proposal, supporting documentation and information. Based on this review, EPA has determined that Massachusetts' list of water quality limited segments (WQLS) still requiring TMDLs meets the requirements of Section 303(d) of the CWA and EPA's implementing regulations with the exception of the 90 lakes identified in the Mercury Proposal. Therefore, EPA hereby partially approves Massachusetts' 2004 CWA Section 303(d) list and is specifically disapproving placement into Category 4b the 90 lakes that were identified in the Mercury Proposal. (See Response to Proposal to Place Mercury-Impaired Waters in Category 4b, discussed below.)

The purpose of this review document is to describe the rationale for EPA's partial approval and disapproval of Massachusetts' 2004 Integrated List. The following sections identify key elements to be included in the list submittal based on the CWA and EPA regulations (see 40 CFR §130.7). EPA's review of Massachusetts' §303(d) list and related information is based on an analysis of whether Massachusetts reasonably considered existing and readily available water quality-related data and information, and reasonably identified waters required to be listed.

II. STATUTORY AND REGULATORY BACKGROUND

¹ Since there are impairments other than mercury on 37 of the lakes, Massachusetts proposes that only 53 lakes be moved to Category 4b at this time. The remaining 37 lakes will remain in other categories because of other impairments and pollutants, however, the Commonwealth's Mercury Proposal would still address the mercury impairments on all 90 waterbodies.

Identification of Water Quality Limited Segments for Inclusion on the Section 303(d) List

Section 303(d)(1) of the Act directs states to identify those waters within their jurisdiction for which effluent limitations required by section 301(b)(1)(A) and (B) are not stringent enough to implement any applicable water quality standard, and to establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters. The Section 303(d) listing requirements apply to waters impaired by point and/or non-point sources, pursuant to EPA's long-standing interpretation of Section 303(d).

EPA regulations provide that states do not need to list waters where the following controls are adequate to implement applicable water quality standards: (1) technology-based effluent limitations required by the Act, (2) more stringent effluent limitations required by federal, state or local authority, and (3) other pollution control requirements required by state, local or federal authority. See 40 CFR §130.7(b)(1).

Consideration of Existing and Readily Available Water Quality-Related Data and Information

In developing Section 303(d) lists, states are required to assemble and evaluate all existing and readily available water quality-related data and information, including, at a minimum, consideration of existing and readily available data and information about the following categories of waters: (1) waters identified as partially meeting, or not meeting, designated uses, or as threatened, in the state's most recent section 305(b) report; (2) waters for which dilution calculations or predictive modeling indicate non-attainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in any Section 319 non-point assessment submitted to EPA. See 40 CFR §130.7 (b)(5). In addition to these minimum categories, states are required to consider any other data and information that is existing and readily available. EPA's *Guidance for 2004 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act* describes categories of water quality-related data and information that may be existing and readily available. See *Guidance for 2004 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act*. (July 21, 2003) ("EPA's 2004 Integrated Reporting Guidance"). While states are required to evaluate all existing and readily available water quality-related data and information, states may decide to rely, or not rely, on particular data or information in determining whether to list particular waters.

In addition to requiring states to assemble and evaluate all existing and readily available water quality-related data and information, EPA regulations at 40 CFR §130.7(b)(6) require states to include as a part of their submissions to EPA, documentation to support decisions to rely on particular data and information and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; (3) a rationale for any decision to not use any existing and readily available data and information for

waters described in 130.7(b)(5); and (4) any other reasonable information requested by the Region.

Priority Ranking

EPA regulations codify and interpret the requirement in Section 303(d)(1)(A) of the Act that states establish a priority ranking for listed waters. The regulations at 40 CFR §130.7(b)(4) require states to prioritize waters on their Section 303(d) lists for TMDL development, and also to identify those water quality limited segments (WQLSs) targeted for TMDL development in the next two years. In prioritizing and targeting waters, states must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters. See Section 303(d)(1)(A). As long as these factors are taken into account, the Act provides that states establish priorities. States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitat, recreational, economic, and aesthetic importance of particular waters, degree of public interest and support, and state or national policies and priorities. See 57 Fed. Reg. 33040, 33044-45 (July 24, 1992).

III. REVIEW OF MASSACHUSETTS' 303(d) SUBMISSION

EPA New England reviewed Massachusetts' Final 2004 Section 303(d) list dated April 19, 2005. The Massachusetts Department of Environmental Protection (MA DEP) revised the list based on comments received during the public comment period. The submittals include the components identified below.

1. Massachusetts Year 2004 Integrated List of Waters: Final listing of the condition of Massachusetts' waters pursuant to Sections 303(d) and 305(b) of the Clean Water Act
 - a. Introduction
 - b. Key Elements of the Massachusetts Water Quality Management Program
 - c. Watershed-based Monitoring, Assessment and Implementation
 - d. The Total Maximum Daily Load (TMDL) Program
 - e. The Wastewater Discharge Permitting and Stormwater Program
 - f. The Water-withdrawal Permitting Program
 - g. The Nonpoint Source Program
 - h. The State Revolving Fund (SRF) Program
 - i. The Massachusetts Surface Water Quality Standards
 - j. Assessment and Listing Methodology
 - l. Sources of Information
 - m. Assessment Procedure
 - n. Individual Use Assessments
 - o. Integrated List Development
 - p. Bibliography
 - q. Category 1 Waters – “Waters attaining all designated uses”
 - r. Category 2 Waters – “Attaining some uses; other uses not assessed”
 - s. Category 3 Waters – “No uses assessed”

- t. Category 4a Waters – “TMDL is completed”
 - u. Category 4b Waters – “Waters expected to attain all designated uses through pollution control measures other than TMDLs”
 - v. Category 4c Waters – “Impairment not caused by a pollutant”
 - w. Category 5 Waters – Massachusetts 2004 CWA 303(d) List “Waters requiring a TMDL”
 - x. Appendix 1 – Waters covered by TMDLs
 - y. Appendix 2 – Waters covered by the alternative regulatory pathway for mercury
 - z. Appendix 3 – Waterbody segments and Integrated List categories by major watershed
2. Final Report, A TMDL Alternative Regulatory Pathway Proposal for the Management of Selected Mercury-Impaired Waters
 3. Massachusetts Year 2004 Integrated List of Waters and A TMDL Alternative Regulatory Pathway Proposal for the Management of Selected Mercury - Impaired Waters, *Public Comments and Responses*
 4. Monitoring of Mercury Environmental Indicators in Massachusetts to Evaluate Responses to Emissions Reductions

Public Review of the Massachusetts’ 2004 Section 303(d) List

Massachusetts conducted a public participation process in which it provided the public the opportunity to review and comment on the 2004 draft CWA §303(d) list. On April 24, 2004, the *Proposed Massachusetts Year 2004 Integrated List of Waters* was noticed in the *Massachusetts Environmental Monitor*. It was also posted on the MA DEP website and provided directly to over 50 different watershed associations and other public interest groups. The document was also available at MA DEP’s Worcester office and at MA DEP’s Regional Service Center. The public comment period ended on June 1, 2004.

Concurrent with the review of the proposed 2004 Integrated List, MA DEP submitted to EPA, an alternative management strategy for selected waterbody segments impaired for mercury by atmospheric deposition. This document, prepared as a supplement to the proposed 2004 Integrated List provides MA DEP’s rationale for managing these mercury-impaired waters in Category 4b of the Integrated List. Following MA DEP’s logic, development of TMDLs would not be necessary because there are a number of existing mercury reduction implementation measures in place. This document was noticed and made available to the public in the same manner as *Proposed Massachusetts Year 2004 Integrated List of Waters* and was noticed in the *Environmental Monitor* on October 9, 2004. The public comment period closed on November 19, 2004. EPA concludes that Massachusetts provided sufficient public notice and opportunities for public involvement and response.

MA DEP received a total of six comment letters on the Proposed Massachusetts Year 2004 Integrated List of Waters, originally noticed in April 2004 and an additional four comment letters on *A TMDL Alternative Regulatory Pathway Proposal for the Management of Selected*

Mercury-Impaired Waters, noticed on October 9, 2004. MA DEP prepared a “Public Comments and Responses” document which lists each summarized comment and MA DEP’s response. EPA has reviewed Massachusetts’ responses and concludes that Massachusetts has adequately responded to the comments.

IV. ANALYSIS OF MASSACHUSETTS’ SUBMISSION

EPA has determined that Massachusetts’ 2004 Section 303(d) submittals address each of the requirements specified in Section 303(d) of the CWA and EPA’s implementing regulations 40 CFR §130.7. Specifically, Massachusetts’ 2004 Section 303(d) list identifies all known WQLS and associated pollutants that still require development of TMDLs. The submittals provide a discussion of priority ranking and identification of targeted waters where TMDL efforts are either currently underway or will soon commence. Also, Massachusetts has provided a detailed listing methodology that describes the process Massachusetts used to develop the 2004 list including specific details of how Massachusetts conducts water quality assessments. The methodology describes sources of readily available water quality-related data and information used, as well as Massachusetts’ rationale for not using certain information to make Section 303(d) listing decisions.

Identification of Waters and Consideration of Existing and Readily Available Water Quality-Related Data and Information

EPA reviewed Massachusetts’ submission, and has concluded that Massachusetts developed its Section 303(d) list in compliance with Section 303(d) of the Act and 40 CFR §130.7. EPA’s review is based on its analysis of whether Massachusetts reasonably considered existing and readily available water quality-related data and information and reasonably identified waters required to be listed.

Massachusetts generated the 2004 Section 303(d) list as a subset of its *Massachusetts Year 2004 Integrated List of Waters*. The Integrated List satisfies Massachusetts’ obligation to report the status of water quality of Massachusetts waterbodies as required by Section 305(b) of the Act. The Massachusetts 2004 Integrated List is comprised of five categories of waters that are consistent with the suggested categories in EPA’s *2004 Integrated Water Quality Monitoring and Assessment Report Guidance*. Category 5 of the 2004 Integrated list represents Massachusetts’ 2004 Section 303(d) list and this is the category that EPA is conducting its review on.

Massachusetts developed the 2004 §303(d) list (Category 5) by updating the 2002 §303(d) list using all §305(b) water quality assessments that have been completed since the 2002 §303(d) list was published. Previously unlisted waterbodies that were determined to be impaired for one or more uses were added to the 2004 §303(d) list unless data show that the impairment was not a result of a pollutant. Determinations of impairments were based on valid monitoring data and/or evaluative information that were collected and determined to be sufficient to make §303(d) listing judgments. Examples of waters that were listed based solely on evaluative information include all freshwaters covered under the statewide fish consumption advisory due to mercury

pollution, most coastal segments where shellfish beds are closed for harvesting, and waters where Rapid Biomonitoring Protocol (RBP) level II assessments indicate severe impairment.

All of the new §305(b) water quality assessments relied upon for the 2004 Section 303(d) list were used in the development of the integrated list. Since the 2002 §303(d) list was essentially updated to reflect new data, any waterbody and pollutant that was previously listed on the 2002 §303(d) list and for which a new §305(b) assessment had not yet been conducted is included on the 2004 §303(d) list.

While performing assessments, Massachusetts determined that it had insufficient information to identify threatened waters for the purpose of §303(d) listing. Massachusetts reported that it lacked the necessary water quality data to predict future trends in water quality and identify waters that are currently in attainment but that are expected to be in nonattainment by April 2006.

In preparing the 2004 §303(d) list, Massachusetts used all existing and readily available water quality-related data and information including those sources identified in 40 CFR §130.7(b)(5): (i) most recent §305(b) report; (ii) dilution calculations and predictive models; (iii) water quality problems reported by local, state, or federal agencies; members of the public; or academic institutions; and (iv) Section 319 non-point source assessments. Massachusetts relied on these and additional sources of information (identified in Part 1 of the integrated list) to prepare the individual watershed assessment reports which together with the 2002 §303(d) list provide the basis for compiling the 2004 §303(d) list. Following is a brief description of the sources used by Massachusetts to prepare the 2004 §303(d) list including those sources identified in 40 CFR §130.7(b)(5).

Consistent with the 2004 EPA Integrated Listing guidance, the 2004 Integrated List represents an update of the 2002 submittal based, primarily, on new assessments completed for the Deerfield, Millers, Ipswich, and Shawsheen watersheds and the Islands and Buzzards Bay coastal drainage areas. Changes to waters in watersheds other than these are few in number and are documented in the integrated list. The changes that occurred between the final 2002, draft 2004 and final 2004 Integrated List are indicated in Appendix 1. A complete list of the MADEP watershed assessments embodied in the 2004 categorization of waters can be found in the Bibliography.

Most Recent 305(b) Report. The *Massachusetts Year 2004 Integrated List of Waters* represents Massachusetts' 2004 §305(b) report. As discussed above, the 2004 §303(d) list (Category 5) is a subset of the integrated list. Therefore, all waters that Massachusetts has determined to be impaired or threatened because of pollutants and for which a TMDL has not yet been completed are included on the 2004 §303(d) list (Category 5).

Dilution Calculations and Predictive Models. The integrated list discusses how Massachusetts considers the results of predictive models and dilution calculations in conducting use assessments. For example, Massachusetts uses dilution calculations to assess potential impairments resulting from effluent toxicity testing of point sources. Additionally, all waters which receive discharges from CSOs are automatically listed for pathogens even if water quality data are not available. As an on-going practice, the EPA, in coordination with Massachusetts, routinely uses dilution calculations to evaluate attainment/non-attainment of WQS resulting from point source discharges of toxics (e.g., metals, ammonia, etc).

Water Quality Problems Reported by Local, State, or Federal Agencies; Members of the Public; or Academic Institutions. Massachusetts actively solicits external sources of information and water quality data to perform assessments. Sources of information used in developing the 2004 §303(d) list include federal agencies, state agencies, local governments, academic institutions, and watershed associations. The following partial list of sources illustrates that Massachusetts considered information from a variety of sources to identify waters on the 2004 §303(d) list.

1. Massachusetts Division of Marine Fisheries
2. Massachusetts Division of Fisheries and Wildlife
3. Massachusetts Department of Environmental Management
4. Massachusetts DEP, Water Supply Program
5. Massachusetts DEP, Wetlands and Waterways program
6. Massachusetts DEP, Watershed Permitting Program
7. Massachusetts DEP, Wastewater Management Program
8. Massachusetts Coastal Zone Management
9. Massachusetts Department of Public Health
10. Massachusetts Water Resources Authority
11. Metropolitan District Commission
12. U.S. Environmental Protection Agency - New England Region
13. U.S. Geological Survey
14. U.S. Fish and Wildlife Service
15. Communities conducting CSO Facility Planning
16. Massachusetts Clean Lakes Program
17. Woods Hole Oceanographic Institute
18. Charles River Watershed Association
19. University of Massachusetts-Dartmouth
20. Coalition of Buzzards Bay
21. National Park Service-Cape Cod National Seashore
22. The Neponset River Watershed Association
23. NPDES Discharge Monitoring Reports

Water quality information obtained from these and other agencies or groups was considered in the development of the 2004 §303(d) list. Typically the sources of data used for assessments are cited in the individual watershed assessment reports. However, MA DEP also relied on water quality-related data and information that was submitted during the public comment period for the

2004 §303(d) list. In those cases where valid water quality-related data was provided during the public comment period and used as the basis for listing a water or pollutant on the final 2004 §303(d) list, the source of this information is identified in *Massachusetts Year 2004 Integrated List of Waters and A TMDL Alternative Regulatory Pathway Proposal for the Management of Selected Mercury - Impaired Waters, Public Comments and Responses*.

Section 319 Nonpoint Source Assessments. Massachusetts has properly listed waters with non-point sources causing or expected to cause impairment, consistent with Section 303(d) and EPA guidance. Section 303(d) lists are to include all WQLSs still needing TMDLs, regardless of whether the source of the impairment is a point and/or non-point source. EPA's long-standing interpretation is that Section 303(d) applies to waters impacted by point and/or non-point sources. In Pronsolino v. Marcus, the District Court for the Northern District of California held that Section 303(d) of the Clean Water Act authorizes EPA to identify and establish total maximum daily loads for waters impaired by non-point sources. Pronsolino v. Marcus, 91 F. Supp. 2d 1337, 1347 (N.D.Ca. 2000). This decision was affirmed by the 9th Circuit court of appeals in Pronsolino v. Natri, 291 F.3d 1123 (9th Cir. 2002), cert. denied, 123 S. Ct. 2573 (2003). See also EPA's 2004 Integrated Reporting Guidance.

In the development of the 2004 §303(d) list, waters identified by the Commonwealth as impaired or threatened in non-point assessments performed by the Commonwealth, in accordance with Section 319 of the CWA, were included on the §303(d) list. The Commonwealth properly listed waters with non-point sources causing or expected to cause impairment, consistent with Section 303(d) and EPA guidance. The majority of waters identified on the 2004 §303(d) list are impaired solely by non-point sources of pollution.

Massachusetts considered its state NPS Assessment Report (1989) submitted to EPA in accordance with Section 319 of the CWA, in the development of its 1992 §303(d) list. All waters identified as having potential water quality problems resulting from NPS pollution were included on the 1992 §305(b) list of impaired and threatened waters and subsequently on the 1992 §303(d) list. Most of these assessments were based on very little information, and in many cases on no water quality monitoring data at all.

These waters were then carried forward in the development of the 1994, 1996, 1998 and 2002 §303(d) lists unless new monitoring data indicated the water/pollutant was in attainment with water quality standards. NPS impaired waters remaining on the 2002 Section 303(d) list were again carried forward to the 2004 §303(d) list unless (1) new monitoring data indicated the water/pollutant was in attainment with water quality standards or (2) if it was determined that the cause of the impairment was not due to a pollutant. Those waters removed from the §303(d) list in 2004 have been identified and Massachusetts has provided explanations for the de-listings.

EPA has reviewed Massachusetts' description of the data and information it considered, its methodology for identifying waters, and selected individual watershed assessment reports. EPA concludes that the Commonwealth properly assembled and evaluated all existing and readily available water quality-related data and information, including data and information relating to the categories of waters specified in 40 CFR §130.7(b)(5).

In addition, the Commonwealth provided in its listing methodology its rationale for not relying on particular existing and readily available water quality-related data and information. In a relatively few cases, waters/pollutants were not added to the 2004 §303(d) list where some information might indicate a potential impairment but the information was determined to be insufficient for the purpose of listing on the §303(d) list and not consistent with the requirements of the Commonwealth's water quality standards. Massachusetts' rationale for not relying on available water quality-related data and information to support §303(d) listing decisions is based entirely on concerns with the quality of the data (i.e., either there was a lack of quality assurance/quality control (QA/QC) documentation provided or that the information was incomplete).

Consistent with Massachusetts' concerns over the validity of water quality data, Massachusetts also considers anecdotal information to be insufficient for the purpose of listing waterbodies or pollutants on the 2004 §303(d) list. All of the data and information are reviewed, but if information does not meet the Commonwealth's listing criteria, the waterbody is not included on the CWA Section 303(d) list. So, where insufficient information exists, the waterbodies are placed in an "alert status" which signifies that a waterbody is targeted for specific monitoring and follow-up assessment during the next scheduled round of monitoring for the watershed as part of the Commonwealth's ongoing watershed assessment program.

For the 2004 list, Massachusetts analyzed relevant data and information for each waterbody that has been assessed since the 2002 §303(d) list was published and determined whether there was sufficient, reliable data to support listing. The Commonwealth's use of this listing methodology is reasonable and consistent with EPA's regulations. The regulations require states to "assemble and evaluate" all relevant water quality-related data and information and, as discussed above, Massachusetts did so for each of its assessed waterbodies. The regulations permit states to decide to not use any particular data and information as a basis for listing, provided they have a reasonable rationale in doing so. Massachusetts reviews all reasonably available data and information. Its decision to not rely on external data without adequate QA/QC documentation is reasonable, in light of the uncertainty about the reliability of such information.

EPA has reviewed the Commonwealth's rationale and has concluded that Massachusetts has reasonably used its discretion to screen un-validated data and information. Massachusetts will continue to apply its existing analytical monitoring framework to target future monitoring activities to collect valid data and verify whether impairments exist.

Basis for Section 303(d) Non-Mercury De-listings

Massachusetts has demonstrated, to EPA's satisfaction, good cause for not including on the 2004 Section 303(d) list certain waters that had been identified on the 2002 Section 303(d) list. Massachusetts' Section 303(d) submittal describes the basis for removing waterbodies from the Section 303(d) list. Also, Massachusetts provided an accounting and tracking of every waterbody that was included on the 2002 list but not included on the 2004 Section 303(d) list. EPA reviewed this list and the Commonwealth's rationale for the de-listings. Waterbody segments were removed from the list because (1) new water quality-related information indicates that the waterbody is now in attainment with Water Quality Standards; (2) the cause of the impairment was determined to be not associated with a pollutant (e.g., related to flow alterations); (3) there were errors in the original listings or a determination that there was insufficient information to support Section 303(d) listing; or (4) TMDLs were completed and approved by EPA. Appendix 1 of this memorandum indicates changes that occurred between the final 2002, draft 2004 and final 2004 Integrated List. In addition, a group of waterbody segments are identified differently as a result administrative changes made by Massachusetts during the development of the 2004 §303(d) list.

Attainment of Massachusetts Water Quality Standards. Four waterbodies were removed from the 2004 §303(d) list because new water quality data showed that the waterbodies in question are now meeting the applicable water quality standards. Massachusetts evaluated the new data and conducted use-attainment assessments for these waters in accordance with the approach used for all waters and outlined in the listing methodology. In approximately 24 cases the waterbodies remain on the §303(d) list based on the failure to attain other applicable water quality standards. These changes are reflected in Appendix 1, which indicates the changes that occurred between the final 2002, draft 2004 and final 2004 Integrated List. Footnote 2 of Appendix 1 indicates which waterbodies are no longer impaired for a given pollutant, but remain in Category 5 due to other impairments.

Impairment Not Related to Pollutant Loading. As was identified in the EPA's review of the 2002 Integrated List, multiple waterbody segment impairments were again not related to pollutant loading. The vast majority of the de-listed waterbodies are lakes. Most of the de-listed lakes are reported to have excessive native macrophyte or rooted plant growth. For these lakes, Massachusetts conducted a review of the individual water quality assessments for each lake and determined that the rooted plant growth in the de-listed lakes is not associated with pollutant loading (e.g., nutrients or sediments). Massachusetts believes that the plant growth in these lakes is most likely due to the natural morphometry of the lakes which typically include extensive shallow areas that are conducive for rooted plant growth. However, not all lakes with abundant rooted plant growth were de-listed. In cases where nutrients or sediments were identified as a contributing factor to the plant growth, the lakes remained on the list. EPA agrees that if data show that no pollutant is associated with the impairment of the waterbody, then such waterbodies may be de-listed. Appendix 1 indicates changes that occurred between the final 2002, draft 2004 and final 2004 Integrated List. Footnote 3 of Appendix 1 indicates which of the 23 waterbodies are impaired due to reasons other than pollutant loadings.

Insufficient Information to Support §303(d) Listing. Massachusetts identified additional waterbody segments that have been removed from the §303(d) list due to new data that showed that these waterbodies met the criteria for aquatic life, primary and secondary recreational uses and aesthetics. These waterbodies were moved to Category 2 because available data and/or information indicate that some, but not all of the designated uses are supported. Appendix 1 sets out the changes that occurred between the final 2002, draft 2004 and final 2004 Integrated List. Footnote 5 of Appendix 1 indicates which of the five waterbodies were delisted due to new data that showed some, but not all, designated uses were met.

Approved TMDLs. Historically, Massachusetts has de-listed many waters for which TMDLs have been established and approved by EPA. Many of these waters are identified in Category 4A. However, if the waters are impaired for causes other than for which the TMDLs were developed, then the waters are included on the §303(d) list (if the cause is a pollutant), or in Category 4C if the cause is not a pollutant. In Category 4C, the pollutant/stressor for which the TMDL has been developed is identified in brackets along with the control number for the approved TMDL document. Appendix 1 indicates changes that occurred between the final 2002, draft 2004 and final 2004 Integrated List. Footnote 6 of Appendix 1 indicates which of the two waterbodies were delisted due to having an approved TMDL.

Administrative Changes. An additional group of waterbody segments are identified differently as a result of administrative changes made by Massachusetts during the development of the 2004 §303(d) list. Specifically, Massachusetts revised waterbody segment identification numbers for a limited number of waterbody segments. In all cases, these waterbodies are included on the 2004 §303(d) list but with different waterbody identification numbers. Appendix 1 sets forth the changes that occurred between the final 2002, draft 2004 and final 2004 Integrated List. Footnote 4 of Appendix 1 indicates which of the eight waterbody listings were changed due to administrative changes.

Waters Nominated by the Public

During the public review period, a number of waterbodies were nominated for inclusion on the 2004 Section 303(d) list. Massachusetts reviewed and considered all comments, as well as all water quality related information submitted by the public and any new fish consumption health advisories. Massachusetts has documented the public comments received and the Commonwealth's responses in *Massachusetts Year 2004 Integrated List of Waters and A TMDL Alternative Regulatory Pathway Proposal for the Management of Selected Mercury - Impaired Waters, Public Comments and Responses*. As a result of the public comments, Massachusetts added many waterbodies to the 2004 Section 303(d) list. Massachusetts also decided to not list several waterbodies that were nominated by members of the public. The rationales for not listing specific waterbodies are provided in the *Public Comment Responsiveness Document*. (For example, see pages 4 and 5 of the *Public Comment Responsiveness Document*.) EPA has

reviewed this document and has concluded that Massachusetts' decision, with respect to these waterbodies, is sufficient for not including those waterbodies identified by the public on the 2004 list.

Massachusetts' two primary reasons for not listing waters based on the information received are that (1) the external data submitted did not satisfy Massachusetts' submission requirements for using external data and/or (2) insufficient information was provided to confirm that an impairment exists and to support a §303(d) listing decision. Massachusetts' requirements for using external data are described in the listing methodology included in the draft list that was distributed for public review. The purpose of Massachusetts' requirements is to ensure that water quality-related information submitted from external sources is of sufficient quality to support listing decisions. In all cases where Massachusetts decided to not rely on external sources of information to list waterbodies, the submitted information did not provide the necessary quality assurance/quality control documentation that Massachusetts requires. EPA has reviewed Massachusetts' listing methodology which outlines the Commonwealth's requirements for using external data for §303(d) listing purposes. EPA believes it is appropriate for states to have discretion in establishing minimum requirements for accepting water quality-related data from external sources. Furthermore, EPA has concluded that it is reasonable to not list a water on the §303(d) list if the supporting information is not validated and it is uncertain whether the information is reflective of actual conditions.

As discussed more fully below, Massachusetts also found that some nutrient-related information cited or provided by the public did not provide evidence that an impairment exists. Although Massachusetts' 2004 §303(d) list includes many waterbodies with nutrients as a pollutant, Massachusetts requires additional corroborating information beyond nutrient data to determine whether an impairment exists. Massachusetts' Water Quality Standards do not include numeric nutrient criteria. Rather they contain narrative criteria that relate to "cultural eutrophication." Therefore, Massachusetts relies on responsive indicators such as dissolved oxygen or algae (or chlorophyll *a*) along with nutrient data to determine impairment status. It is very possible that a waterbody may have high nutrient levels, yet may not be undergoing cultural eutrophication because of site-specific factors (e.g., light limitation, retention time, and high dissolved organic matter content that may limit nutrient availability for plant growth). EPA has concluded that Massachusetts' rationale for not listing waters on the §303(d) list based solely on nutrient data is reasonable and consistent with the Commonwealth's current Water Quality Standards.

As a result of water quality-related information submitted during the public comment period, Massachusetts added several estuaries to the 2004 §303(d) list that were determined to be undergoing cultural eutrophication. Waters were added to the 2004 §303(d) list where there were nutrient data and other information (e.g., eel grass loss) that confirmed that eutrophication is taking place. If only nutrient data were available for a waterbody, then Massachusetts determined that insufficient information was available to determine impairment status and the water was not listed. Future monitoring is planned for all coastal embayments to determine impairment status and to complete TMDLs where necessary. Appendix 1 indicates changes that occurred between the final 2002, draft 2004 and final 2004 Integrated List. Footnote 7 of Appendix 1 indicates the 13 waterbodies and impairments that were nominated by the public to

be listed in Category 5 and were included in this category by Massachusetts, and six new listings based on fish consumption health advisories.

The rationale for not listing specific waterbody segments nominated by the public is provided below. The Coalition for Buzzards Bay submitted additional data and information on seventeen segments that led to the addition of six waterbody segments/stressors to the 2004 §303(d) list. The remaining 11 waterbody segments were not included on the 2004 §303(d) list for the following reasons. As stated on page 6 of the *Public Comment Responsiveness Document*, six waterbody segments (Little Buttermilk Bay, West End Pond (Cuttyhunk), Wild Harbor, Wild Harbor River, Little Sippewisset Marsh and Mattapoissett River) were not added to the 2004 §303(d) list because there were insufficient data or information to support inclusion on the 2004 §303(d) list. Four additional waterbody segments (Nasketucket Bay, Inner Aucoot Cove, Broad Marsh River and Sippican Harbor) were not included because either there were very little data and information to support the decision or the consistency of the sampling locations were questionable. In addition, other information collected by the Dartmouth School for Marine Science and Technology did not indicate an impairment and there were stable eel grass beds in these areas – an indicator which MA DEP places substantial emphasis on when assessing coastal embayments. Finally, Onset Bay/East River is on the 2004 §303(d) list for "pathogens" and "other habitat alterations;" however, MA DEP states there is inconclusive data to support listing this segment for nutrients. Nevertheless, as a consequence of this segment being part of the 89 embayments covered under the Massachusetts Estuaries Project, in conversations with MA DEP they have indicated that this segment will undergo nutrient TMDL development regardless of its impairment status. EPA concurs with MA DEP's assessment not to list the waterbody segments identified above.

The Mystic River Watershed Association recommended several waterbody segments for inclusion on the 2004 §303(d) list for one or more of the following pollutants: nutrients, pathogens and /or arsenic. Based on the information submitted, three segments were added to the 2004 §303(d) list – Winn Brook for pathogens, Mill Creek for pathogens, and the Aberjona River (segment MA 71-01) for arsenic. The rationale for listing and not listing the waterbodies can be found on pages 12 through 15 of the *Public Comment Responsiveness Document*. Generally, pollutants associated with these waterbody segments fall into two categories: nutrients and pathogens.

Nutrients: As discussed above, there are no numerical standards for nutrients in the Massachusetts Surface Water Quality Standards and the MA DEP does not place waters on the 303(d) list solely on the basis of nutrient concentration data. Narrative criteria for nutrients at 314 CMR 4.05 (5)(c) and the antidegradation provisions at 314 CMR 4.04(5) prohibit the discharge from point sources of nutrients in amounts that would promote the accelerated growth of algae or aquatic plants (“encourage cultural eutrophication”) and require best management practices for the control of nonpoint sources of nutrients. On a case-by-case basis the MA DEP will use evidence of eutrophic conditions, such as wide ranges in dissolved oxygen concentration, elevated chlorophyll values or biological surveys (in combination with nutrient concentrations) that reveal algae or plant “bloom” conditions that result in one or more impaired uses, to add waters to the 2004 303(d) list. In light of the narrative criteria, EPA believes it is

reasonable for MA DEP to conclude that nutrient concentrations above normal background levels do not, in and of themselves, constitute use impairment. Therefore, EPA concurs that MA DEP's decision not to list Winn Brook, Malden River and Mill Brook for nutrients was reasonable.

Pathogens: The rationale MA DEP used, and EPA concurs with, for not including Wellington Brook on the 2004 §303(d) list for pathogens is that there were insufficient data and information, including questions concerning the quality assurance of the samples collected and sampling locations (as stated on pages 13 and 14 of the *Public Comment Responsiveness Document*) to justify placing the waterbody segment on the list consistent with the Commonwealth's water quality standards.

Tim Watts indicated in public comments that the Taunton River segment (MA 62-01) should be listed. A combination of samples (some of which indicated elevated concentrations) and observations do not necessarily mean the waterbody is impaired. At the time the 2004 §303(d) list was prepared, information about the Taunton River was incomplete to allow conclusions to be drawn. We concur with MA DEP's decision to not list the segment on that basis. In conversations with MA DEP, a review of the most recent data subsequent to the 2004 list submitted, indicated no toxicity impairment.

The Mystic River Watershed Association also nominated the Upper Mystic Lake as impaired for arsenic to be included on the 2004 §303(d) list. EPA concurs with MA DEP's decision not to list the waterbody segment because the information on the levels of arsenic (in contrast with the Aberjona River which did get listed for arsenic) were minimally above those associated with risks to invertebrates and no risk to other receptors including fish. Therefore, it is reasonable for MA DEP to conclude that there was not sufficient information to demonstrate a use impairment for arsenic for Upper Mystic Lake.

The Neponset River Watershed Association nominated several water body segments to the 2004 §303(d) list for pathogens and other categories. (See pages 15 through 21 in *Public Comment Responsiveness Document* for MA DEP's rationale for not including specific waterbodies on the 2004 §303(d) list). Pecunit, Steep Hill, Spring and Beaver Brooks were nominated to be placed in Category 4a – impaired but covered by an EPA approved TMDL. All of these segments did not have sufficient data and information to justify placing the waterbody segments on the list or in Category 4a consistent with the Commonwealth's water quality standards. One other segment, MA73-31 and was nominated to be in Category 4a. This segment was already listed in Category 4a and thus a TMDL has already been developed for this segment. Similarly, MA73-16 was nominated to be placed in the 2004 §303(d) list, but it is already covered in Category 4a by an EPA approved TMDL.

The Neponset River Watershed Association proposed that 18 stream segments (see page 19 and 20 in *Public Comment Responsiveness Document* for a complete list of these segments) be included on the 2004 §303(d) list for nutrients. However, as stated above, there are no numerical standards for nutrients in the Massachusetts. Based on the Surface Water Quality Standards, MA

DEP does not place waters on the 303(d) list solely on the basis of nutrient concentration data. Therefore, EPA concurs with MA DEP's decision not to list these 18 waterbody segments.

In addition, the Neponset River Watershed Association nominated five waterbody segments to the 2004 §303(d) list for either flow alterations, lack of a riparian buffer, and channelization. EPA concurs with MA DEP's rationale not to list these waterbody segments because the CWA §303(d) list is for segments impaired by pollutants and not pollution such as stream flow alterations. While trash and debris can be pollutants and subject to TMDL development, based on discussions with MA DEP, the trash and debris is predominately on the banks of the river and appears to be sporadic and not currently contributing to use impairment. EPA agrees with MA DEP that the trash and debris be removed. Further, based on follow-up conversations, MA DEP believes that the most appropriate approach to address this issue is through outreach to local residents about good stream stewardship.

The Neponset River Watershed Association also nominated Massapoag Lake to the 2004 §303(d) list for mercury. Although MA DEP placed this waterbody in Category 4c because of its Mercury Proposal (see below: Response to Proposal to Place Mercury-Impaired Waters in Category 4b Section), EPA proposes to disapprove the Mercury Proposal and place this lake and 89 other waterbodies on the the 2004 §303(d) list for mercury.

Five other waterbody segments -- Beaver Meadow, Pine Tree, Pequid and Traphole Brooks and the Upper Mainstem Neponset River were nominated by the Neponset River Watershed Association to be included on the 2004 §303(d) list for other pollutants and stressors, but these segments had insufficient data and information to justify placing the waterbody segments on the list consistent with the water quality standards. For example, MA DEP's decision not to list Beaver Meadow, Pequid and Traphole Brooks was reasonable because macroinvertebrate and fish population surveys in these segments supported aquatic life use. Pine Tree Brook was "not assessed" for aquatic life in the most recent water quality assessment report, thus there was insufficient information to list this waterbody segment. The Upper Mainstem Neponset River (MA 73-01) meets all uses except for fish consumption. Even though there have been color problems in the past, there appears to be insufficient data to support listing for color. In light of the assessment, it is reasonable to conclude that color is not presently causing or contributing to a use impairment.

Priority Ranking and Targeted Waters

EPA has also reviewed the Commonwealth's priority ranking of listed waters for TMDL development, and concludes that the Commonwealth properly took into account the severity of pollution and the uses to be made of such waters. The regulations at 40 CFR §130.7(b)(4) require states to prioritize waters on their §303(d) lists for TMDL development, and also to identify those WQLSs targeted for TMDL development in the next two years. In prioritizing and targeting waters, states must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters. See CWA Section 303(d)(1)(A). As long as these factors are taken into account, the CWA provides that states establish priorities. States may consider other factors relevant to prioritizing waters for TMDL development, including immediate

programmatic needs, vulnerability of particular waters as aquatic habitats, recreational, economic, and aesthetic importance of particular waters, degree of public interest and support, and state or national policies and priorities. See 57 Fed. Reg. 33040, 33044-45 (July 24, 1992).

Targeted Waters. The 2004 §303(d) submission identifies several targeted waterbodies where TMDL work is either ongoing or planned for the near future (see page 23 of the Integrated List). These include the development of over 100 nutrient TMDLs in estuaries in Southeastern Massachusetts, multiple nutrient TMDLs on waterbody segments in the Nashua River watershed and Quaboag and South Ponds located in the Chicopee watershed. In addition, several more TMDL and monitoring projects in support of TMDL development are set out in MA DEP's Work Plan (see <http://www.mass.gov/dep/brp/epp/sg/cw/rstrwqwp.htm>). Waters targeted for TMDL development during the next 2 years reflect a variety of serious water quality problems affecting various designated uses. For many of the targeted waters the public has expressed its interest for the Commonwealth to begin TMDL development. In addition, MA DEP is working on pathogen TMDLs for all waterbody segments in Massachusetts – approximately 356 TMDLs.

Priority Rankings. Massachusetts has established priorities for TMDL development for all listed waters, presented within the context of its watershed approach and the five year rotating basin schedule. The initial TMDL prioritization is also linked to the type of pollutant/impairment. Under the Commonwealth's watershed approach, the goal is to adhere to the following schedule for a given watershed:

- Year 1 - Information gathering/ reconnaissance
- Year 2 - Information development/monitoring
- Year 3 - Assessment/ Development of TMDLs
- Year 4 - Implement control actions
- Year 5 - Evaluate control actions

In order to set priorities for TMDL development MA DEP evaluated the causes and locations of impairments across the Commonwealth. The data on causes of impairments in assessed waters overwhelmingly indicates that the major causes of impairment are excess nutrients and pathogens. Nutrient impairment and its secondary effects such as low dissolved oxygen and noxious aquatic plants have been identified as the cause of impairment in approximately 37% of the Commonwealth's waters. The biggest single cause of impairment is pathogens, which has been identified as a problem in roughly 23% of the Commonwealth's assessed waters. Combined these two causes account for roughly 60% of the impairments in Massachusetts. As a result, Massachusetts has placed a high priority on these issues for TMDL development in the coming years.

EPA acknowledges the issues raised by Save the Bay, but considers the priority ranking of the waterbodies within Massachusetts to be reasonable and in accordance with the CWA, EPA's regulations and guidance.

In conclusion, EPA finds the TMDL prioritization and targeting approach used by Massachusetts

to be reasonable considering all factors including the large number of waters on the list and the overall pace at which TMDLs will be developed. See EPA's *Guidance for 2004 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act*. Massachusetts' watershed approach provides watershed-based priority rankings for §303(d) listed waters. In addition, it provides a framework in which meaningful priority rankings will be established for each listed water. In targeting waterbodies for TMDL development, Massachusetts continues to take into account the severity of the pollution and the uses to be made of such waters. EPA expects that individual priority rankings, set in year 3 of the rotating basin schedule, will be reflected in subsequent §303(d) lists.

Any other reasonable information requested by the Regional Administrator

Massachusetts has been very responsive to any questions or comments raised by EPA - New England.

Waterbodies on Tribal Lands

EPA's approval of Massachusetts' Section 303(d) list extends to all water bodies on the list with the exception of those waters, if any, that are within Indian Country, as defined in 18 U.S.C. Section 1151. EPA is taking no action to approve or disapprove the Commonwealth's list with respect to those waters at this time. EPA, or eligible Indian Tribes, as appropriate, will retain responsibilities under Section 303(d) for those waters.

Waters Covered by the Alternative Regulatory Pathway for Mercury

All of the New England states, including Massachusetts, currently have statewide fish consumption advisories in effect due to high levels of mercury in fish tissue. Most of the states also include on their §303(d) Lists individual lakes and ponds where the fish collected from these water bodies exceed state safe consumption levels for mercury. In many cases, atmospheric deposition is the only known mercury sources impairing these waterbodies. Out-of-state and out-of-region sources are major contributors to this atmospheric deposition. Massachusetts proposes to address lakes and ponds impaired by atmospheric mercury deposition under what the Commonwealth refers to as an "alternative regulatory pathway" and to place such waters into Category 4(b), rather than keep them on the §303(d) list for TMDL development. Because of the unique attributes of mercury source inputs and impacts, Massachusetts restricted its alternative proposal to waterbodies impaired solely by air deposition sources. By placing the waters in Category 4(b), Massachusetts continued to identify these waterbodies as impaired but decided not to include them on the Section 303(d) list or to develop TMDLs, because the Commonwealth believes it has adopted and is effectively implementing mercury reduction strategies addressing in-state mercury releases to the environment.

The Commonwealth proposed that 90 lakes and ponds¹ where atmospheric deposition of

¹ Some of the affected waterbodies are included in Category 5 as impaired by pollutant(s) other than mercury. As stated previously, Massachusetts proposes that 37 of the 90 waterbodies will remain in other categories of the 2004 Integrated List; 53 waterbodies are proposed to be moved to Category 4b.

mercury is the only known source of anthropogenic mercury loading to these waterbodies, be placed in Category “4(b)” of the Integrated List. See Appendix 2 for the list of affected waters. EPA regulations require states to list water quality limited segments still requiring TMDLs where certain controls, including other pollution control requirements “required by local, State, or Federal authority” are insufficient to achieve applicable water quality standards. (See 40 CFR §130.7(b)(1)(iii)). EPA’s 2004 Integrated Report Guidance recommends that states include in Category 4(b) of their Integrated Reports all waters for which such other controls are sufficient to implement applicable standards within a reasonable period of time. The Commonwealth proposes to rely on its comprehensive mercury reduction program and national and international mercury control efforts as the other control requirements that would form the basis for the Commonwealth’s decision not to include the waterbodies in Category 5.

The 90 waterbodies in the Massachusetts’ alternative mercury proposal are all lakes and ponds within the Commonwealth’s jurisdiction, where the Commonwealth has determined that the main source of mercury is atmospheric deposition. According to the Commonwealth’s Mercury Proposal (page 6),

[The] ...only apparent source of mercury appears to be from both near-field and far-field atmospheric deposition, which accounts for the widespread contamination of fish in lakes and ponds throughout the northeastern United States and eastern Canada. The specific percent reduction needed to achieve the fish consumption use is extremely difficult to define because the process by which mercury moves from the atmosphere through the food chain (water, sediment, and bioaccumulation in fish) is not well defined nor easily modeled. Mercury is not only a non-point source pollutant that is atmospherically driven, it exhibits complex biogeochemical dynamics and bioaccumulative properties, as well. Nonetheless, an estimate of 84 to 90% or greater reduction has been derived.

Table 1 on page 7 of the Mercury Proposal sets forth the mercury emissions by source category based on data collected in the mid 1990s for anthropogenic sources in the United States.² “Sources inside the Region” refers to sources in New York, New Jersey, Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, and Maine.

² Source: Northeast States and Eastern Canadian Provinces Mercury Study, A Framework for Action, Feb. 1998 (NESCAUM, NEWMOA, NEIWPC, EMAN).

**Table 1 (from page 7 of the Mercury Proposal)
Contribution of Northeast Sources, out-of Region U.S. Sources, and the Global Reservoir
to Modeled Deposition in the Northeast (kg/yr)**

Sources Inside Region	3,787	47%
U.S. Sources Outside Region	2,419	30%
Global Reservoir	1,809	23%
Total Deposition	8,015	100%

Massachusetts’ proposal states that sources of mercury from within these states account for 47%, U.S sources outside of these states accounts for 30%, and 23% of the mercury deposition originates from the global reservoir. EPA recognizes that the relative mercury contributions of local, national, global and natural sources to mercury levels in fish tissue will vary significantly among waterbodies.

Response to Proposal to Place Mercury-Impaired Waters in Category 4b

EPA regulations require states to list water quality limited segments still requiring TMDLs where certain controls, including other pollution control requirements “required by local, State, or Federal authority” are insufficient to achieve applicable water quality standards. (See 40 CFR §130.7(b)(1)(iii)). EPA’s 2004 Integrated Report Guidance recommends that states include in Category 4(b) of their Integrated Reports all waters for which such other controls are sufficient to implement applicable standards within a reasonable period of time. The Commonwealth proposes to rely on its comprehensive mercury reduction program and national and international mercury control efforts as the other control requirements that would form the basis for the Commonwealth’s decision not to include the waterbodies in Category 5.

EPA has determined that Massachusetts has not demonstrated that other pollution control requirements required by state, local, or federal law are sufficient to meet the applicable WQS for mercury in the waterbodies identified in Appendix 1. Consequently, EPA disapproves the Commonwealth’s decision to not include such waters on the Massachusetts 2004 §303(d) list. EPA intends to add the waters in Appendix 1 to the Massachusetts §303(d) list as impaired by mercury, and will be soliciting public comment on the inclusion of such waters in Category 5. After considering comments received from the public, EPA will make any appropriate revisions to its decision to add the waters to the list and will transmit to the Commonwealth the list of waters added. Consistent with the comments below, Massachusetts may consider listing these mercury-impaired waters into a new sub-category -- “Category 5m” -- of its current Category 5 list.

While Massachusetts describes its strong mercury reduction program, as well as the New-England wide mercury reduction efforts, Massachusetts has not demonstrated that other pollution control requirements exist that are sufficient to implement the Commonwealth's water quality standards for mercury within a reasonable period of time. See 40 C.F.R. 130.7(b)(1)(iii). In spite of the strong state, regional, and federal mercury reduction efforts, it will be difficult to achieve water quality standards due in part to the contributions from non-U.S. sources (i.e., the global reservoir). Massachusetts indicates in its submission that the total reductions needed to meet the Commonwealth's water quality standard (0.3 ppm methylmercury in fish tissue) range from 57 to greater than 90 percent (see pages 6, 10 and 11 of the Mercury Proposal). However, Massachusetts' estimates show that almost a quarter of the mercury loading in the Commonwealth originate outside the United States. Specifically, Massachusetts indicates that mercury contributions include at least 23 percent from international and background sources, which are not subject to state or federal regulation and therefore are assumed to remain at those levels. EPA's own estimates indicate that an even larger share of deposition comes from non-U.S. sources. (See <http://www.epa.gov/air/mercuryrule/> and <http://www.epa.gov/ttn/atw/utility/TSD-112-final.pdf>, page 48.) Therefore, EPA concludes that Massachusetts has not demonstrated that there are other control requirements sufficient to achieve the reductions in mercury the Commonwealth estimates are needed to implement the applicable water quality standard.

Although EPA is adding the mercury-impaired waters identified in Appendix A to the §303(d) list, EPA recognizes the significant efforts of Massachusetts to address the Commonwealth's mercury sources. Massachusetts is a leader among states in developing a comprehensive and aggressive mercury reduction program. As noted in the Commonwealth's submission, Massachusetts' mercury programs include strong regulatory controls on major mercury emitters, located within the Commonwealth, and pollution prevention programs for sources such as municipal waste combustors, dentists, and schools.

EPA also notes that Massachusetts may determine that the Appendix 1 waters can be scheduled as a lower priority for TMDL development (i.e., later in the Commonwealth's schedule), based on other relevant factors such as the Commonwealth's ongoing commitment to mercury reduction. Thus, as the state of the science and modeling of mercury advances and becomes more definitive, EPA is supportive of efforts by Massachusetts where robust mercury control efforts are ongoing to place these waterbodies as a lower priority for TMDL development. EPA recommends that Massachusetts identify mercury-impaired waters in a separate category of the §303(d) list, in order to highlight the Commonwealth's efforts for waters impaired by mercury. EPA will encourage Massachusetts to track its mercury-impaired waters separately from its other TMDL targets within Category 5 (e.g., a Sub-Category "5m"). Such tracking would also provide the Commonwealth and EPA with information that could be used to more adequately characterize the expected pace of TMDL development and the resources that may be necessary to improve the quality of the Commonwealth's waters. EPA is also willing to provide assistance to Massachusetts in air deposition modeling and other technical approaches to mercury TMDLs. EPA is working with states to determine how such an approach to listing, prioritization, and tracking could apply nationally to achieve better environmental progress.

EPA acknowledges the importance of addressing the air emissions of mercury, as evidenced by efforts at the national level to address sources of mercury, the strong regional efforts endorsed by the New England Governors and Eastern Canadian Premiers, and the New England Mercury Modeling Project which we have supported with funding. We appreciate the complexities associated with developing and implementing TMDLs for mercury-impaired waters, particularly where the primary source is atmospheric deposition from out-of-state sources. EPA is committed to developing a longer-term national framework for listing mercury impaired waters and developing mercury TMDLs, an effort in which we will involve Massachusetts and other states in the future.

Appendix 1

303(d) (Category 5) Changes from 2002 to 2004 Integrated List Cycles¹

Waterbody Name	Segment	2002	2004	Notes	2004 Disapproval of Proposed Category 4b to Address Mercury Impairments; Returned to Category 5m Or Other Category If There Are Multiple Impairments
Buzzards Bay					
Agawam River (9558725)	MA95-29_2002	5	5	Retained in Category 5 ("pathogens", "nutrients", "noxious aquatic plants", "other habitat alterations") Add "unionized ammonia", "unknown toxicity"	
Beaverdam Creek (9558925)	MA95-53_2002	5	5	Retained in Category 5 ("pathogens", "nutrients") Add "other habitat alterations"	
Buttermilk Bay (95901)	MA95-01_2002	5	5	Retained in Category 5 ("pathogens") Add "other habitat alterations"	
Cornell Pond (95031)	MA95031_2002	5	5	Retained in Category 5 ("priority organics") "Metals" [CN176.0].	5
Crane Brook Bog Pond (95033)	MA95033_2002	3	5	Added to Category 5 due to "nutrients", "noxious aquatic plants" and "(exotic species)"	
East Branch Westport River (9560025)	MA95-41_2002	5	5	Retained in Category 5 ("pathogens", "nutrients") Add "other habitat alterations"	
Eel Pond (96075)	MA95-48_2002	5	5	Retained in Category 5 ("pathogens") Add "nutrients"	
Hammett Cove (95922)	MA95-56_2002	5	5	Retained in Category 5 ("pathogens", "nutrients") Add "other habitat alterations"	
Long Pond (95097)	MA95097_2002	5	4b	"Metals" [CN176.0].	5m
New Bedford Harbor (95920)	MA95-42_2002	5	5	Retained in Category 5 ("nutrients", "organic enrichment/low DO", "pathogens", "priority organics", "metals") Add "oil & grease", "taste/odor/color", "objectionable deposits"	
New Bedford Reservoir (95110)	MA95110_2002	4c	5	Added to Category 5 due to "nutrients", "organic enrichment/low DO", and "(exotic species)"	
Noquochoke Lake (95113)	MA95113_2002	5	5	Retained in Category 5 ("exotic species"), "priority organics", "noxious aquatic plants", "turbidity") Add "pathogens" "Metals" [CN176.0].	5
Noquochoke Lake (95170)	MA95170_2002	5	5	Retained in Category 5 ("exotic species"), "priority organics", "noxious aquatic plants", "turbidity") "Metals" [CN176.0].	5
Noquochoke Lake (95171)	MA95171_2002	5	5	Retained in Category 5 ("exotic species"), "priority organics", "noxious aquatic plants", "turbidity") "Metals" [CN176.0].	5

¹ Note: The red highlighted text reflects changes from the 2002 303(d) to the 2004 303(d) List. The green highlighted text reflects changes that occurred between the Proposed (Draft) 2004 303(d) List and the proposed Final 2004 303(d) List.

² Footnote 2 indicates which waterbodies are not impaired for a given pollutant, but remain in category 5 due to other impairments.

³ Footnote 3 of indicates which waterbodies are impaired due to a non-pollutant loading.

⁴ Footnote 4 indicates which waterbodies were de-listed due to administrative changes.

⁵ Footnote 5 indicates which waterbodies were delisted due to new data and moved to Category 2 that showed some, but not all of the designated uses supported.

⁶ Footnote 6 indicates which waterbodies were de-listed due to having an approved TMDL.

⁷ Footnote 7 indicates waterbodies and impairments that were nominated by the public to be listed in Category 5 and were included in the §303(d) Listing by Massachusetts and any new fish consumption health advisories.

Waterbody Name	Segment	2002	2004	Notes	2004 Disapproval of Proposed Category 4b to Address Mercury Impairments; Returned to Category 5m Or Other Category If There Are Multiple Impairments
Onset Bay (95902)	MA95-02_2002	5	5	Retained in Category 5 ("pathogens") Add "other habitat alterations"	
Outer New Bedford Harbor (95916)	MA95-63_2002	5	5	Retained in Category 5 ("nutrients", "organic enrichment/low DO", "pathogens", "priority organics", "metals") Add "non-priority organics"	
Parker Mills Pond (95115)	MA95115_2002	4c	5	Add to Category 5 ("nutrients") Also "(exotic species)"	
Pocasset Harbor (95908)	MA95-17_2002	5	5	Retained in Category 5 ("pathogens") Add "other habitat alterations"	
Slocums River (9559800)	MA95-34_2002	5	5	Retained in Category 5 ("pathogens", "nutrients") Add "other habitat alterations"	
Snell Creek (9560075)	MA95-44_2002	3	5	Added to Category 5 due to "pathogens"	
Snipatuit Pond (95137)	MA95137_2002	5	4b	"Metals" [CN176.0],	5m
Turner Pond ^{2,3} (95151)	MA95151_2002	5	4b	"Metals" [CN176.0], Remove "turbidity" (color due to natural causes)	5m
Wareham River (9558600)	MA95-03_2002	5	5	Retained in Category 5 ("pathogens", "nutrients") Add "other habitat alterations"	
West Branch Westport River (9559950)	MA95-37_2002	5	5	Retained in Category 5 ("pathogens", "nutrients") Add "other habitat alterations"	
West Falmouth Harbor (95912)	MA95-22_2002	5	5	Retained in Category 5 ("pathogens", "nutrients") Add "other habitat alterations"	
Westport River (9559925)	MA95-54_2002	5	5	Retained in Category 5 ("pathogens", "nutrients") Add "other habitat alterations"	
Weweantic River (9558900)	MA95-05_2002	5	5	Retained in Category 5 ("pathogens", "nutrients") Add "other habitat alterations"	
White Island Pond (95166)	MA95166_2002	5	5	Retained in Category 5 ("nutrients", "organic enrichment/low DO", "noxious aquatic plants") Add "exotic species" and "turbidity"	
Wild Harbor (95911)	MA95-20_2002	2	5	Added to Category 5 due to "pathogens"	
Buzzards Bay (Open water outside New Bedford Harbor)	MA95-62	--	5	New segment. Add to Category 5 ("priority organics", "pathogens")	
Mattapoisett River	MA95-60	--	5	New segment. Add to Category 5 ("pathogens")	
Eel Pond	MA95-61	--	5	New segment. Add to Category 5 ("pathogens", "nutrients")	
Snell Creek	MA95-59	--	5	New segment – includes part of old segment 95-45 - Added to Category 5 due to "pathogens"	
Bread and Cheese Brook	MA95-58	--	5	New segment. Add to Category 5 ("pathogens")	
Little Bay	MA95-64	--	5	New segment. Add to Category 5 ("pathogens")	
Little River	MA95-66	--	5	New segment. Add to Category 5 ("nutrients")	
Nasketucket Bay	MA95-65	--	5	New segment. Add to Category 5 ("pathogens")	
Nasketucket River	MA95-67	--	5	New segment. Add to Category 5 ("nutrients")	
Deerfield					
Davis Mine Brook (3315250)	MA33-18_2002	5	5	Retained in Category 5 ("pH") Remove "other habitat alterations"	
Deerfield River ^{4,5} (3312900)	MA33-01_2002	5	2	Segment redefined to begin at the outlet of Sherman Reservoir. New data indicate aquatic life, primary and secondary contact recreation and aesthetics supported. Fish consumption use not assessed.	

Waterbody Name	Segment	2002	2004	Notes	2004 Disapproval of Proposed Category 4b to Address Mercury Impairments; Returned to Category 5m Or Other Category If There Are Multiple Impairments
Deerfield River ^{4, 5} (3312900)	MA33-02_2002	5	2	New data indicate aquatic life, primary and secondary contact recreational uses, and aesthetics are all supported. TRC no longer an issue. Metals originally listed based on data on dilution water obtained by permittee – DWM policy is to no longer use these data due to questions about clean techniques, etc.	
Green River ⁴ (3312925)	MA33-09_2002	5	NA	Segment reconfigured – now included in 33-28, 33-29 and part of 33-30	
Green River ⁴ (3312925)	MA33-10_2002	5	NA	Segment reconfigured – now included in 33-30	
North River ⁵ (3314100)	MA33-06_2002	5	2	New data indicate aquatic life, primary and secondary contact recreational uses, and aesthetics are all supported.	
Plainfield Pond ^{2, 3} (33017)	MA33017_2002	5	4b	"Metals" [CN176.0] Remove "noxious aquatic plants" based on reevaluating past information and determining that this is naturally occurring.	5m
South River (3313650)	MA33-08_2002	5	5	Although the 2000 assessment supported primary and secondary contact recreation, the alert status does not appear to support removing "pathogens" as a stressor. "Cause unknown" can be removed.	
Tannery Pond ⁴ (33020)	MA33020_2002	5	4c	Erroneously listed in Category 5 in 2002 ("flow alteration")	
Green River	MA33-30	NA	5	New segment – includes part of segment 33-09 and all of 33-10 – Primary contact recreation not supported due to "pathogens". "Cause unknown", "unionized ammonia", and "metals" can be removed. Note: metals originally listed based on dilution water analyses for Greenfield POTW toxicity tests and/or predicted from violation of permit copper limits. Discharge now relocated, and DWM policy is to no longer use these data due to questions about clean techniques, etc.	
Ipswich					
Crystal Pond (92013)	MA92013_2002	5	5	Retained in Category 5 ("noxious aquatic plants") Add "nutrients" and "turbidity"	
Devils Dishfull Pond (92015)	MA92015_2002	5	5	Retained in Category 5 ("noxious aquatic plants", "turbidity") Add "nutrients", "organic enrichment/low DO", "exotic species"	
Hood Pond (92025)	MA92025_2002	5	4b	"Metals" [CN176.0]	5m
Howlett Brook (9253750)	MA92-17_2002	5	5	Retained in Category 5 ("pathogens") Add "cause unknown"	
Lowe Pond (92034)	MA92034_2002	5	4c	"Metals" [CN176.0] (Exotic species*)	5m
Ipswich River (9253500)	MA92-06_2002	5	5	Retained in Category 5 ("flow alteration") Add "organic enrichment/low DO", "nutrients"	
Martins Pond (92038)	MA92038_2002	5	5	Retained in Category 5 ("noxious aquatic plants", "turbidity", "exotic species") Add [CN176.0] to "Metals"	5
Miles River (9253650)	MA92-03_2002	5	5	Retained in Category 5 ("organic enrichment/low DO", "pathogens") Add "cause unknown"	
Mill Pond (92041)	MA92041_2002	5	4b	"Metals" [CN176.0]	5m
Silver Lake ⁷ (92059)	MA92059_2002	2	5	New Fish health advisory. "Metals" [CN176.0], "Pesticides"	5

Wenham Lake ⁷ (92073)	MA92073_2002	2	5	New Fish health advisory. "Metals" [CN176.0], "Pesticides"	5
Islands					
Gibbs Pond (97028)	MA97028_2002	5	4b	"Metals" [CN176.0]	5m
Katama Bay (97908)	MA97-16_2002	2	5	Added to Category 5 due to "pathogens"	
Lagoon Pond (97044)	MA97-11_2002	2	5	Added to Category 5 due to "pathogens" and "other habitat alterations"	
Miacomet Pond (97055)	MA97055_2002	5	4b	"Metals" [CN176.0]	5m
Menemsha Pond ⁵ (97054)	MA97-06_2002	5	2	New data from 2000 assessment indicate that this segment supporting shellfish, primary and secondary contact recreational uses.	
Oyster Pond ⁴ (97069)	MA97-13_2002	5	3	Was listed for "pathogens" – now subject to a shellfish management closure.	
Polpis Harbor (97909)	MA97-26_2002	5	5	Retained in Category 5 ("pathogens", "nutrients") Add "other habitat alterations"	
Sengekontacket ⁵ Pond (97083)	MA97-10_2002	5	2	New data from 2000 assessment found this segment supporting shellfish and primary and secondary contact recreational uses.	
Seths Pond (97085)	MA97085_2002	3	5	Primary contact use listed impaired due to "noxious aquatic plants" and "turbidity"	
Lake Tashmoo (97095)	MA97-12_2002	3	5	Aquatic life use impaired based on eelgrass loss ("other habitat alterations")	
Tom Nevers Pond (97097)	MA97097	5	4b	"Metals" [CN176.0]	5m
Madaket Harbor	MA97-27	NA	5	New segment – shellfish use impaired by "pathogens"	
Hither Creek	MA97-28	NA	5	New segment – aquatic life use impaired by "nutrients" and "organic enrichment/low DO"	
Long Pond	MA97-29	NA	5	New segment – aquatic life use impaired by "nutrients", "organic enrichment/low DO." Primary contact use impaired by "pathogens" and "turbidity".	
Millers					
Bents Pond ⁶ (35007)	MA35007_2002	5	4a	Final TMDL approved for "noxious aquatic plants" and "turbidity" [2/5/03 CN123.2]	
Boyce Brook (3523400)	MA35-17_2002	3	5	Added to Category 5 due to "metals" and "priority organics".	
Lake Denison (35017)	MA35017_2002	5	4b	Final TMDL approved for "organic enrichment/low DO". [2/5/03 CN123.2] Add [CN176.0] to "Metals"	5m
East Branch Tully River (3523275)	MA35-12_2002	5	5	Retained in Category 5 ("metals", "priority organics") Remove "cause unknown".	
Gales Pond (35024)	MA35024_2002	5	5	Retained in Category 5 ("turbidity") Add [CN176.0] to "Metals"	5
Hilchey Pond ⁶ (35029)	MA35029_2002	5	4a	Final TMDL approved for "turbidity" [2/5/03 CN123.2]	
Keyup Brook (3522375)	MA35-16_2002	3	5	Add to Category 5 ("metals", "priority organics")	
Laurel Lake ^{2,3} (35035)	MA35035_2002	5	5	Retained in Category 5 ("organic enrichment/low DO") Remove "noxious aquatic plants" based on a reevaluation of the 1996 synoptic survey (naturally occurring)	
Lawrence Brook (3523325)	MA35-13_2002	5	5	Retained in Category 5 ("metals", "priority organics") Remove "cause unknown".	
Millers River ² (3522150)	MA35-01_2002	5	5	Retained in Category 5 ("metals", "nutrients", "priority organics", "pathogens") Add "unknown toxicity".	
Millers River ² (3522150)	MA35-03_2002	5	5	Retained in Category 5 ("metals", "priority organics", "nutrients") Remove "salinity/TDS/chloride" and "suspended solids" based on new data	

Millers River (3522150)	MA35-04_2002	5	5	Retained in Category 5 ("metals", "priority organics", "nutrients", "pathogens") Remove "unknown toxicity" based on new assessment.	
Mormon Hollow Brook (3522225)	MA35-15_2002	3	5	Add to Category 5 ("metals", "priority organics")	
Otter River (3523800)	MA35-06_2002	2	5	Added to Category 5 due to "metals" and "priority organics".	
Otter River (3523800)	MA35-07_2002	5	5	Retained in Category 5 ("nutrients", "organic enrichment/low DO", "other habitat alterations"). Add "metals", "priority organics", "turbidity".	
Otter River (3523800)	MA35-08_2002	5	5	Retained in Category 5 ("nutrients", "organic enrichment/low DO", "other habitat alterations", "metals", "priority organics", "salinity/TDS/chloride", "pathogens"). Add "turbidity", "taste/odor/color".	
Priest Brook ² (3524150)	MA35-10_2002	5	5	Retained in Category 5 ("metals", "priority organics") Remove "unknown toxicity" based on new toxicity data.	
Lake Rohunta (35070)	MA35070_2002	5	5	Retained in Category 5 ("noxious aquatic plants", "exotic species") Add [CN176.0] to "Metals"	5
Lake Rohunta (35106)	MA35106_2002	5	4c	"Metals" [CN176.0] (Exotic species*)	5m
Lake Rohunta (35107)	MA35107_2002	5	5	Retained in Category 5 ("noxious aquatic plants", "exotic species") Add [CN176.0] to "Metals"	5
Upper Naukeag Lake (35090)	MA35090_2002	5	4b	"Metals" [CN176.0]	5m
Upper Reservoir (35091)	MA35091_2002	5	4b	"Metals" [CN176.0]	5m
Whetstone Brook (3522450)	MA35-18_2002	3	5	Add to Category 5 ("metals", "priority organics")	
Whitney Pond ⁶ (35101)	MA35101_2002	5	5	Final TMDL approved for "noxious aquatic plants" and "turbidity"). [2/5/03 CN123.2] Remains in Category 5 ("metals")	
Millers River	MA35-20	--	5	New segment. Add to Category 5 ("metals")	
North Branch Millers River	MA35-21	--	5	New segment. Add to Category 5 ("metals")	
Lyons Brook	MA35-19	--	5	Add to Category 5 ("metals", "priority organics")	
Shawsheen					
Ames Pond (83001)	MA83001_2002	5	4b	"Metals" [CN176.0]	5m
Elm Brook (8349375)	MA83-05_2002	5	5	Retained in Category 5 ("turbidity", "pathogens"[TMDL complete CN122.0]) Add "other habitat alterations"	
Fosters Pond (83005)	MA83005_2002	5	5	Retained in Category 5 ("exotic species") – add "organic enrichment/low DO" Add [CN176.0] to "Metals"	5
Long Pond (83010)	MA83010_2002	5	5	Retained in Category 5 ("noxious aquatic plants", "nutrients") – add "organic enrichment/low DO", "turbidity" - TMDL in development	
Pomps Pond (83014)	MA83014_2002	5	4c	"Metals" [CN176.0] (Exotic species*)	5m
Rogers Brook (8349050)	MA83-04_2002	5	5	Retained in Category 5 ("turbidity", "pathogens"[TMDL complete CN122.0]) Add "other habitat alterations"	
Shawsheen River ^{2,3} (8349000)	MA83-01_2002	5	5	Retained in 5 ("organic enrichment/low DO", "pathogens"[TMDL complete CN122.0]) – remove "unknown toxicity" based on 2000 EPA chronic toxicity test results	
Shawsheen River ⁴ (8349000)	MA83-02_2002	5	NA	Segment reconfigured – now included in 83-17, 83-18, and part of 83-19	
Shawsheen River ⁴ (8349000)	MA83-03_2002	5	NA	Segment reconfigured – now included in 83-19	
Shawsheen River	MA83-17	NA	5	New segment – includes part of old segment 83-02 – Retained in 5 ("organic enrichment/low DO", "pathogens"[TMDL complete CN122.0]) – remove "unknown toxicity" based on 2000 EPA chronic toxicity test results	

Shawsheen River	MA83-18	NA	5	New segment – includes part of old segment 83-02 - Retained in 5 (“organic enrichment/low DO”, “metals”, “pathogens” [TMDL complete CN122.0]) – remove “unknown toxicity” based on 2000 EPA chronic toxicity test results	
Shawsheen River	MA83-19	NA	5	New segment – includes part of old segments 83-02 and 83-03 – Retained in 5 (“organic enrichment/low DO”, “pathogens” [TMDL complete CN122.0]) – remove “unknown toxicity” based on 2000 EPA chronic toxicity test results	
Miscellaneous watersheds					
Blackstone ²	MA51-06	5	5	Add “metals” as a stressor. Inadvertently omitted from the 2002 list. Extrapolated from sediment resuspension studies upstream at Rice City Pond and to be consistent with the Blackstone water quality assessment report and Rhode Island listing status. Remove “pH” as a stressor. First listed in 1992 as “threatened”. No new data from this segment, since 1992, but upstream data from 1998 suggest acceptable pH values. Consistent with the Blackstone water quality assessment report and Rhode Island listing status.	
2, 3	MA51091	5	5	Remove “noxious aquatic plants” (naturally occurring)	
	MA51170	5	4b	“Metals” [CN176.0]	5m
Boston Harbor: Mystic	MA7101	5	5	Retained in Category 5 for “Cause Unknown”, “Unionized Ammonia”, “Nutrients”, “Organic enrichment/Low DO”, (Other habitat alterations*), “Pathogens”. Add “Metals”	
	MA71040	5	5	Retained in Category 5 for “Nutrients”, “Organic enrichment/Low DO”, “Noxious aquatic plants”, (Exotic species*) New Fish health advisory. Add “Pesticides”	
7	MA71-08	--	5	New segment. “Pathogens”	
7	MA71-09	--	5	New segment. “Pathogens”	
Boston Harbor: Neponset ^{2, 3}	MA73002	5	5	Remove “noxious aquatic plants” (naturally occurring)	
	MA73030	4c	4c	“Metals” [CN176.0] (Exotic species*)	5m
	MA73062	5	4b	“Metals” [CN176.0]	5m
Cape Cod	MA96004	5	4b	“Metals” [CN176.0]	5m
	MA96126	5	4b	“Metals” [CN176.0]	5m
	MA96157	5	4b	“Metals” [CN176.0]	5m
	MA96194	5	4b	“Metals” [CN176.0]	5m
	MA96244	5	4b	“Metals” [CN176.0]	5m
	MA96289	5	5	Retained in Category 5 for “Organic enrichment/low DO” “Metals” [CN176.0]	5
	MA96302	5	4b	“Metals” [CN176.0]	5m
	MA96346	5	4b	“Metals” [CN176.0]	5m
	MA96333	5	4c	(Exotic species*) “Metals” [CN176.0]	5m
	MA96-68	--	5	New segment. “Pathogens”	
Charles	MA72043	5	3	Restoration project completed including stormwater BMPs and dredging. No post-project monitoring data	
2, 3	MA72140	5	5	Remove “noxious aquatic plants” – Problem with lake is two non-native species and PCBs	

	MA72008	5	5	Retained in Category 5 for "Nutrients", "Siltation", "Noxious aquatic plants" New Fish health advisory Add "Pesticides"	
	MA72096	5	5	Retained in Category 5 for "Noxious aquatic plants" and "Turbidity" "Metals" [CN176.0]	5
Chicopee ^{2,3}	MA36056	5	5	Retained in Category 5 for "organic enrichment/low DO" Remove "noxious aquatic plants" (naturally occurring)	
	MA36130	5	5	Add "Noxious Aquatic Plants" and "Nutrients"	
	MA36125	5	4b	"Metals" [CN176.0]	5m
	MA36129	5	4b	"Metals" [CN176.0]	5m
	MA36131	5	4c	"Metals" [CN176.0] (Exotic species*)	5m
Concord ^{2,3}	MA82044	5	5	Remove "noxious aquatic plants" (naturally occurring)	
2,3	MA82058	5	5	Remove "noxious aquatic plants" (naturally occurring)	
2,3	MA82060	5	5	Remove "noxious aquatic plants" (naturally occurring)	
2,3	MA82110	5	5	Remove "noxious aquatic plants" (naturally occurring)	
2,3	MA82120	5	5	Retained in Category 5 for "metals" Remove "noxious aquatic plants" – weed problem with lake is non-native species	
	MA82B-01	5	5	Add [CN201.0] to "Nutrients" and "Organic enrichment/low DO"	
	MA82B-02	5	5	Add [CN201.0] to "Nutrients" and "Organic enrichment/low DO"	
	MA82B-03	5	5	Add [CN201.0] to "Nutrients"	
	MA82B-04	5	5	Add [CN201.0] to "Nutrients" and "Organic enrichment/low DO"	
	MA82B-05	5	5	Add [CN201.0] to "Nutrients" and "Organic enrichment/low DO"	
	MA82B-06	5	5	Add [CN201.0] to "Nutrients" and "Organic enrichment/low DO"	
	MA82B-07	5	5	Add [CN201.0] to "Nutrients" and "Organic enrichment/low DO"	
	MA82004	5	5	Add [CN176.0] to "Metals"	5
	MA82011	5	4c	Add [CN176.0] to "Metals" (Exotic species*)	5m
	MA82088	5	4c	"Metals" [CN176.0] (Exotic species*)	5m
	MA82124	5	4b	"Metals" [CN176.0]	5m
	MA82106	5	4b	"Metals" [CN176.0]	5m
	MA82109	5	5	Add [CN176.0] to "Metals"	5
	MA82110	5	4c	"Metals" [CN176.0] (Exotic species*)	5m
	MA82120	5	5	Add [CN176.0] to "Metals"	5
Farmington ^{2,3}	MA31044	5	5	Remove "noxious aquatic plants" (naturally occurring) Leave "organic enrichment/low DO"	
	MA31004	5	5	Add [CN176.0] to "Metals"	5
	MA31027	5	4b	"Metals" [CN176.0]	5m
French ³	MA42039	5	3	Remove "noxious aquatic plants" (naturally occurring)	
	MA42005	5	4c	Add [CN176.0] to "Metals" (Exotic species*)	5m
Quinebaug ^{2,3}	MA41014	5	4c	Remove "noxious aquatic plants" (naturally occurring) "Metals" [CN176.0] (Exotic species*)	5m
2,3	MA41022	5	4b	Remove "noxious aquatic plants" (naturally occurring) "Metals" [CN176.0]	5m
Housatonic	MA21083	5	4c	"Metals" [CN176.0] (Exotic species*)	5m
Merrimack	MA84002	5	4b	"Metals" [CN176.0]	5m
	MA84006	5	4b	"Metals" [CN176.0]	5m
	MA84008	5	4b	"Metals" [CN176.0]	5m
	MA84010	5	4b	"Metals" [CN176.0]	5m
	MA84012	5	5	Add [CN176.0] to "Metals"	5
	MA84014	5	5	Add [CN176.0] to "Metals"	5
	MA84022	5	4b	"Metals" [CN176.0]	5m
	MA84025	5	4b	"Metals" [CN176.0]	5m
	MA84027	5	5	Add [CN176.0] to "Metals"	5
	MA84028	5	4b	"Metals" [CN176.0]	5m
	MA84031	5	4b	"Metals" [CN176.0]	5m

	MA84032	5	5	Add [CN176.0] to "Metals"	5
	MA84087	5	5	Add [CN176.0] to "Metals"	5
	MA84041	5	4b	"Metals" [CN176.0]	5m
	MA84046	5	5	Add [CN176.0] to "Metals"	5
	MA84051	5	4b	"Metals" [CN176.0]	5m
	MA84059	5	4b	"Metals" [CN176.0]	5m
	MA84064	5	4b	"Metals" [CN176.0]	5m
Mount Hope Bay ²	MA61-06	5	5	Remove "cause unknown" as a stressor because causes are provided in assessment report	
²	MA61-07	5	5	Remove "cause unknown" as a stressor because causes are provided in assessment report	
	MA61011	5	4b	"Metals" [CN176.0]	5m
	MA61004	5	4b	"Metals" [CN176.0]	5m
Narragansett Bay	MA53001	5	4b	"Metals" [CN176.0]	5m
Nashua	MA81007	5	4c	"Metals" [CN176.0] (Exotic species*)	5m
	MA81031	5	4b	"Metals" [CN176.0]	5m
	MA81147	5	4b	"Metals" [CN176.0]	5m
	MA81151	5	4b	"Metals" [CN176.0]	5m
North Coastal ¹	MA93023	5	5	New Fish health advisory. "Pesticides"	
¹	MA93026	--	5	New segment. "Pesticides"	
Parker	MA91001	5	5	Add [CN176.0] to "Metals"	5
	MA91010	5	5	Add [CN176.0] to "Metals"	5
	MA91012	5	4b	"Metals" [CN176.0]	5m
South Coastal ³	MA94113	5	3	Remove "noxious aquatic plants" and "turbidity" (naturally occurring, tea-stained)	
	MA94178	5	4b	"Metals" [CN176.0]	5m
	MA94050	5	4b	"Metals" [CN176.0]	5m
	MA94054	5	4b	"Metals" [CN176.0]	5m
Taunton ^{2, 3}	MA62011	5	5	Remove "noxious aquatic plants" (naturally occurring) Leave "organic enrichment/low DO"	
³	MA62043	5	3	Remove "turbidity" (naturally occurring tea-stained color)	
³	MA62169	5	3	Remove "noxious aquatic plants" and "turbidity" (naturally occurring, tea-stained and iron)	
¹	MA62-32	5	5	Retained in Category 5 for "Pathogens" Add "Organic enrichment/low DO"	
	MA62218	5	4b	"Metals" [CN176.0]	5m
¹	MA62-05	5	5	Retained in Category 5 for "Siltation", "Pathogens", "Suspended solids", (Other habitat alterations*) Add "Organic enrichment/low DO"	
¹	MA62-06	5	5	Retained in Category 5 for "Cause unknown" and "Pathogens" Add "Organic enrichment/low DO"	
	MA62174	5	4b	"Metals" [CN176.0]	5m
Ten Mile ¹	MA52027	5	5	New Fish health advisory "Pesticides"	
Westfield ³	MA32053	5	3	Remove "noxious aquatic plants" and "turbidity" (naturally occurring, tea-stained)	
^{2, 3}	MA32055	5	5	Retained in Category 5 for "nutrients" and "organic enrichment/low DO". Remove "noxious aquatic plants" (plant coverage primarily non-native species)	

Appendix 2

Proposed Lakes and Ponds to be Managed by the Alternative Mercury Regulatory Pathway

WATER BODY	MUNICIPALITY	LIST CATEGORY
Aaron River Reservoir	Cohasset, Hingham	4B
Ames Pond	Tewksbury	4B
Ashumet Pond	Mashpee	4B
Assabet River Reservoir	Westborough	5
Lake Attitash	Amesbury, Merrimac	4B
Baldpate Pond	Boxford	5
Bare Hill Pond	Harvard	4C
Big Pond	Otis	5
Boons Pond	Stow, Hudson	4C
Buffumville Lake	Charlton, Oxford	4C
Burr's Pond	Seekonk	4B
Chadwicks Pond	Haverhill, Boxford	4B
Chebacco Lake	Hamilton, Essex	4C
Lake Cochichewick	North Andover	4B
Cornell Pond	Dartmouth	5
Crystal Lake	Haverhill	4B
Lake Dennison	Winchendon	4B
East Brimfield Reservoir	Brimfield	4C
Flint Pond	Tyngsborough	5
Forest Lake	Methuen	5
Fosters Pond	Andover	5
Gales Pond	Warwick	5
Gibbs Pond	Nantucket	4B
Great Herring Pond	Bourne, Plymouth	4B
Great South Pond	Plymouth	4B
Haggetts Pond	Andover	4B
Hamblin Pond	Barnstable	4B
Hickory Hills Lake	Lunenburg	4B
Holland Pond	Holland	4B
Hood Pond	Ipswich	4B
Hoveys Pond	Boxford	4B
Johns Pond	Mashpee	4B
Johnsons Pond	Groveland, Boxford	5
Kenoza Lake	Haverhill	4B
Lake Lashaway	North Brookfield, East Brookfield	4C
Lewin Brook Pond	Swansea	4B
Locust Pond	Tyngsborough	4B
Long Pond	Dracut, Tyngsborough	5
Long Pond	Rochester	4B
Lowe Pond	Boxford	4C
Martins Pond	North Reading	5
Mashpee Pond	Mashpee, Sandwich	4B
Massapoag Lake	Sharon	4C
Massapoag Pond	Dunstable, Groton, Tyngsborough	5

WATER BODY	MUNICIPALITY	LIST CATEGORY
Miacomet Pond	Nantucket	4B
Mill Pond	Burlington	4B
Millvale Reservoir	Haverhill	4B
Monponsett Pond	Halifax	4B
Newfield Pond	Chelmsford	5
Lake Nippenicket	Bridgewater	4C
Noquochoke Lake	Dartmouth	5
North Watuppa Lake	Fall River	4B
Nutting Lake	Billerica	4C
Otis Reservoir	Otis, Tolland, Blandford	4B
Pentucket Pond	Georgetown	5
Lake Pentucket	Haverhill	4B
Peters Pond	Sandwich	4B
Plainfield Pond	Plainfield	4B
Pomps Pond	Andover	4C
Pontoosuc Lake	Lanesborough, Pittsfield	4C
Populatic Pond	Norfolk	5
Pottapaug Pond Basin	Petersham	4B
Quabbin Reservoir	Petersham, Pelham, Ware, Hardwick, Shutesbury, Belchertown, New Salem	4B
Quacumquasit Pond	Brookfield, East Brookfield, Sturbridge	4C
Rock Pond	Georgetown	4B
Lake Rohunta	Athol, Orange, New Salem	5
Lake Saltonstall	Haverhill	4B
Sheep Pond	Brewster	5
Silver Lake	Wilmington	5
Snake Pond	Sandwich	4B
Snipatuit Pond	Rochester	4B
Somerset Reservoir	Somerset	4B
Stevens Pond	North Andover	4B
Sudbury Reservoir	Marlborough, Southborough	4B
Tom Nevers Pond	Nantucket	4B
Turner Pond	New Bedford, Dartmouth	4B
Upper Naukeag Lake	Ashburnham	4B
Upper Reservoir	Westminster	4B
Wachusett Reservoir	Boylston, West Boylston, Clinton, Sterling	4B
Waite Pond	Leicester	4B
Wakeby Pond	Mashpee/Sandwich	4B
Walden Pond	Concord	5
Lake Wampanoag	Ashburnham, Gardner	4B
Warners Pond	Concord	4C
Wenham Lake	Beverly	5
Wequaquet Lake	Barnstable	4C
Whitehall Reservoir	Hopkinton	5
Whiting Pond	North Attleborough, Plainville	4B
Wickaboag Pond	West Brookfield	4B
Willet Pond	Walpole, Westwood, Norwood	4B