

May 4, 2009

Laurie Burt, Commissioner
Massachusetts Department of Environmental Protection
1 Winter Street
Boston, MA 02108

Re: 2008 Clean Water Act Section 303(d) List Approval

Dear Commissioner Burt:

Thank you for your final submittal of the 2008 Clean Water Act Section 303(d) list, Massachusetts Year 2008 Integrated List of Waters - Category 5, dated December 24, 2008. 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' 2008 Section 303(d) list and supporting documentation. Based on this review, EPA has determined that Massachusetts' 2008 Section 303(d) list of water quality limited segments still requiring total maximum daily loads (TMDLs) meets the requirements of §303(d) of the Clean Water Act (CWA) and EPA's implementing regulations. Therefore, EPA hereby approves Massachusetts' decision to include the waters in Category 5, on its Section 303(d) list, as well as Massachusetts' decision to remove specific waters from the 2008 Section 303(d) list.

Massachusetts' 2008 Section 303(d) list includes a list of those waters for which technology-based and other required controls for point and nonpoint sources are not stringent enough to attain or maintain compliance with the State's Water Quality Standards. The submittal presents Massachusetts' TMDL strategy which describes a priority setting approach for which TMDLs will be completed and submitted over time. The statutory and regulatory requirements, and EPA's review of Massachusetts' compliance with each requirement, are described in detail in the enclosed approval document.

Massachusetts completed a public participation process for the 2008 Section 303(d) list during which the public was given the opportunity to review and comment on the Section 303(d) list. As a result of this effort, Massachusetts has considered public comments in the development of the final list. A summary of the public comments and Massachusetts' response to those comments were included in the December 24, 2008 submittal.

I would like to thank your staff for their assistance in working with my staff in finalizing the 2008 Section 303(d) list. We look forward to continued cooperation with MassDEP in implementing the requirements under Section 303(d) of the Clean Water Act. Please feel free to contact me or Steve Silva at 617-918-1561, if you have any questions or comments on our review.

Sincerely,

/s/

Ken Moraff, Acting Director
Office of Ecosystem Protection

Enclosure

cc:

Glenn Haas, MassDEP
Rick Dunn, MassDEP
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Ann Williams, EPA
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EPA - NEW ENGLAND'S REVIEW OF MASSACHUSETTS 2008 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 water bodies 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 water body and still ensure attainment and maintenance of water quality standards. Furthermore, a TMDL must also allocate that acceptable pollutant load among all potential sources.

EPA has conducted a complete review of Massachusetts' 2008 §303(d) list and supporting documentation and information and, based on this review, EPA has determined that Massachusetts' list of water quality limited segments (WQLSs) still requiring total maximum daily loads (TMDLs) meets the requirements of §303(d) of the Clean Water Act and EPA's implementing regulations. Therefore, by this order, EPA hereby approves Massachusetts' 2008 final §303(d) list, submitted to EPA on December 24, 2008 as part of its final *Massachusetts Year 2008 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).

Massachusetts formulated its list utilizing EPA's October 12, 2006 memorandum on *Information Concerning 2008 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions* which recommended that the 2008 integrated water quality reports follow the *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act* issued July 29, 2005 (US EPA, 2005)(available at <http://www.epa.gov/owow/tmdl/2006IRG/>) as supplemented by the October 12, 2006 memo and attachments. 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 §305(b). The integrated listing format allows states to provide the status of all assessed waters in a single multi-part list. States choosing this option may 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.

The Integrated List presents the individual categories of Massachusetts' waters for the 2008 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 purpose of this review document is to describe the rationale for EPA's approval of Massachusetts' 2008 §303(d) 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

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 §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 §303(d) listing requirements apply to waters impaired by point and/or non-point sources, pursuant to EPA's long-standing interpretation of §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 §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 §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 §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 2006 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. 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 §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 §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 §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' SECTION 303(d) SUBMISSION

EPA New England reviewed Massachusetts' Final 2008 §303(d) list dated December 24, 2008. The submittal includes the components identified below.

1. Massachusetts Year 2008 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. Water Resources of Massachusetts
 - c. Costs and Benefits of Clean Water

- d. Key Elements of the Massachusetts Water Quality Management Program
 - i. Watershed-based Monitoring, Assessment and Implementation
 - ii. The Total Maximum Daily Load (TMDL) Program
 - iii. The Wastewater Discharge Permitting and Stormwater Program
 - iv. The Water-withdrawal Permitting Program
 - v. The Nonpoint Source Program
 - vi. The State Revolving Fund (SRF) Program
 - e. Massachusetts Wetlands Protection and Assessment Programs
 - i. The Wetlands Regulatory Program
 - ii. Wetlands Loss
 - iii. Wetlands Monitoring and Assessment Strategy
 - f. The Massachusetts Surface Water Quality Standards
 - g. General Approach to Assessing Massachusetts' Waters
 - i. Sources of Information
 - ii. Assessment Procedure
 - iii. Assessment Documentation
 - h. Development of the 2008 Integrated List
 - i. List Categories 1 – 4
 - ii. List Category 5 – The 303(d) List of Impaired Waters
 - iii. Biological Assessments
 - iv. Fish Consumption Advisories
 - v. Waters Impaired by Mercury
 - vi. Predictive Models and Evaluated Information
 - vii. Shared Waters
 - viii. Prioritizing Waters for TMDL Development
 - i. Bibliography
 - j. Category 1 Waters – “Waters attaining all designated uses”
 - k. Category 2 Waters – “Attaining some uses; other uses not assessed”
 - l. Category 3 Waters – “No uses assessed”
 - m. Category 4a Waters – “TMDL is completed”
 - n. Category 4c Waters – “Impairment not caused by a pollutant”
 - o. Category 5 Waters – “Waters requiring a TMDL”
 - p. Appendix 1 – Waters covered by TMDLs
 - q. Appendix 2 – Water body segments and Integrated List categories by major watershed
 - r. Appendix 3 – Category 5 and 4c Impairments *added* to the 2008 Integrated List
 - s. Appendix 4 – 2006 §303(d) Listed Impairments and Segments *removed* from the 2008 Integrated List
2. Massachusetts Year 2008 Integrated List of Waters: Responses to public comments pertaining to the proposed listing of the condition of Massachusetts' waters pursuant to Sections 303(d) and 305(b) of the Clean Water Act

Public Review of Massachusetts' 2008 Section 303(d) List

Massachusetts conducted a public participation process in which it provided the public the opportunity to review and comment on the 2008 draft CWA §303(d) list. On April 23, 2008, the *Proposed Massachusetts Year 2008 Integrated List of Waters* was noticed in the *Massachusetts Environmental Monitor*. It was also posted on the Massachusetts Department of Environmental Protection's (MassDEP) website and provided directly to over 50 different watershed associations and other public interest groups. The document was also available at MassDEP's Worcester office. The public comment period ended on June 6, 2008.

MassDEP received a total of five comment letters on the Proposed Massachusetts Year 2008 Integrated List of Waters. MassDEP revised the list based on comments received during the public comment period. 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' 2008 §303(d) submittal addresses each of the requirements specified in §303(d) of the CWA and EPA's implementing regulations 40 CFR §130.7. Specifically, Massachusetts' 2008 §303(d) list identifies all known WQLS and associated pollutants that still require development of TMDLs. The submittal provides 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 2008 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 §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 §303(d) list in compliance with §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 2008 §303(d) list as a subset of its *Massachusetts Year 2008 Integrated List of Waters*. The Integrated List satisfies Massachusetts' obligation to report the status of water quality of Massachusetts water bodies as required by §305(b) of the Act. The Massachusetts 2008 Integrated List is comprised of five categories of waters that are consistent with the suggested categories in EPA's *2006 Integrated Water Quality Monitoring and Assessment Report Guidance*. Category 5 of the 2008 Integrated List represents Massachusetts' 2008 §303(d) list and this is the category that EPA is approving.

Massachusetts developed the 2008 §303(d) list (Category 5) by updating the 2006 §303(d) list using all §305(b) water quality assessments that have been completed since the 2006 §303(d) list was published. Previously unlisted water bodies that were determined to be impaired for one or more uses were added to the 2008 §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 2008 §303(d) list were used in the development of the Integrated List. Since the 2006 §303(d) list was essentially updated to reflect new data, any water body and pollutant that was previously listed on the 2006 §303(d) list and for which a new §305(b) assessment had not yet been conducted is included on the 2008 §303(d) list.

In preparing the 2008 §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) §319 non-point source assessments. Massachusetts relied on these and additional sources of information (identified in the section of the Integrated List entitled, “General Approach to Assessing Massachusetts’ Waters) to prepare the individual watershed assessment reports which together with the 2006 §303(d) list provide the basis for compiling the 2008 §303(d) list. Following is a brief description of the sources used by Massachusetts to prepare the 2008 §303(d) list including those sources identified in 40 CFR §130.7(b)(5).

Consistent with the 2006 EPA Integrated Listing guidance, the 2008 Integrated List represents an update of the 2006 submittal based, primarily, on new assessments completed for the Charles, Connecticut, Hudson, Housatonic, and Ten Mile Watersheds and the North Coastal Drainage Basin. Changes to waters in watersheds other than these are few in number and are documented in the Integrated List. A complete list of the MassDEP watershed assessments embodied in the 2008 categorization of waters can be found in the Bibliography. Appendix 1 summarizes all of the waters covered by TMDLs; Appendix 2 lists water body segments and Integrated List categories by major watershed; Appendix 3 identifies the Category 5 and 4c impairments added to the Integrated List; and Appendix 4 lists the impairments and segments removed from the §303(d) list (Category 5) between the final 2006 and 2008 Integrated Lists. MassDEP added 46 water body segments, which included 136 impairments, to Category 5; and it removed 46 impairments and sixteen water body segments from Category 5, for the reasons discussed further below.

Most Recent Section 305(b) Report. The *Massachusetts Year 2006 Integrated List of Waters* represents Massachusetts’ 2008 §305(b) report. As discussed above, the 2008 §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 2008 §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 combined sewer overflows (CSOs) are automatically listed for pathogens even if water quality data are not available.

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 2008 §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 2006 §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 development of the 2008 §303(d) list. Typically the sources of data used for assessments are

cited in the individual watershed assessment reports. However, MassDEP also relied on water quality-related data and information that was submitted during the public comment period for the 2008 §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 2008 §303(d) list, the source of this information is identified in *Massachusetts Year 2008 Integrated List of Waters, Responses to Public Comments*.

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 2006 §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. 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 water bodies or pollutants on the 2008 §303(d) list. All of the data and information are reviewed, but if information does not meet the Commonwealth's listing criteria, the water body is not included on the CWA §303(d) list. So, where insufficient data and/or information exists, the water bodies are placed in an "alert status" which signifies that a water body 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 2008 list, Massachusetts analyzed relevant data and information for each water body that has been assessed since the 2006 §303(d) list was published and determined whether there were 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 water bodies. 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 unvalidated 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) De-listings

Massachusetts has demonstrated, to EPA's satisfaction, good cause for not including on the 2008 §303(d) list certain waters that had been identified on the 2006 §303(d) list. Massachusetts' §303(d) submittal describes the basis for removing water bodies from the §303(d) list. Also, Massachusetts provided an accounting and tracking of every water body that was included on the 2006 list but not included on the 2008 §303(d) list. EPA reviewed this list and the Commonwealth's rationale for the de-listings. Water body segments were removed from the list because (1) new water quality-related information indicates that the water body is now in attainment with Water Quality Standards for uses which have been assessed; (2) the cause of the impairment was determined to be not associated with a pollutant (e.g., related to flow alterations or exotic species); or (3) TMDLs were completed and approved by EPA. A total of 187 pollutant and 11 non-pollutant impairments were removed from the 2008 §303(d) list. Seventy-two water body segments were removed from list and placed in a category other than Category 5 of the Integrated Report. Appendix 4 of the Integrated List report indicates the impairments and water body segments removed between the final 2006 and final 2008 Integrated Lists. In addition, a few water body segments are identified differently as a result of administrative changes made by Massachusetts during the development of the 2008 §303(d) list.

Attainment of Massachusetts Water Quality Standards. Ninety-nine pollutant impairments in fifty-five water body segments were removed from the 2008 §303(d) list. New water quality data and/or Department of Public Health fish consumption advisories showed attainment of the applicable water quality standards for which uses have been assessed. MassDEP completed new detailed watershed assessment reports for six major watersheds during this listing cycle. They are the Charles, Connecticut, Hudson, Housatonic, and Ten Mile river watersheds and the North Coastal drainage area. MassDEP references these and twenty-six other watershed assessment reports in the Integrated Report. The watershed assessment reports can be found on MassDEP's website at <http://www.mass.gov/dep/water/resources/wqassess.htm>. The watershed assessment reports present a summary of all existing and readily available data and information pertaining to a waterbody segment and, if sufficient information exists, a determination with regard to whether or not individual designated uses are supported. The detailed watershed reports and information provided by the public provided the bases for MassDEP's 2008 delistings. 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. EPA agrees that MassDEP has demonstrated that de-listing is appropriate for these segments/impairments based on standards being attained.

| Nine of these segments were moved from Category 5 to Category 2. MassDEP places waters in Category 2 when some uses are being attained, but others remain unassessed. Two of the segments were moved into Category 4C because they are no longer impaired by a pollutant, pathogens, but remain impaired by flow alteration or aquatic plants. Forty-four of the segments remain in Category 5. Despite attaining water quality standards for one or more listed pollutants, they remain impaired for additional pollutants for which one or more TMDLs are required. 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. These waters will continue to be reassessed during the MassDEP's five-year rotating basin schedule and can be listed again for the pollutant in question if it is found to have reappeared. EPA agrees that MassDEP has demonstrated that de-listing is appropriate for these segments/impairments based on standards being attained.

Impairments Not Related to Pollutant Loading. MassDEP has removed eleven non-pollutant impairments in ten water body segments from Category 5. These non-pollutant causes of impairment were "flow alteration" or "other habitat alterations." Two of the water body segments were placed into Category 2 because new assessments determined that flow alteration was not impairing the segments, however not all their other uses were assessed. Eight of the water body segments remain in Category 5 because pollutants still remain that will require TMDLs for those segments.

EPA agrees that if data show that no pollutant is associated with the particular impairment of the water body, then such impairment may be de-listed. In these cases, MassDEP has demonstrated a reasonable basis for removing the non-pollutant impairment from the list.

Approved TMDLs. Massachusetts has de-listed eighty-eight pollutant impairments in eighty-eight different water body segments for which TMDLs have been established and approved by EPA. Forty-seven of these segments are identified in Category 4A. A TMDL has been completed for all the known pollutant impairments. Fifteen of the segments are placed in Category 4C, because they remain impaired for something other than a pollutant. Twenty-six of the segments are still impaired for other pollutants other than for the ones for which the TMDLs were developed. These segments remain in Category 5.

Administrative Changes. An additional group of twelve water body segments are identified differently as a result of administrative changes made by Massachusetts during the development of the 2008 §303(d) list. Specifically, Massachusetts redefined the geographic extent of nine water body segments, however eight of those remain in Category 5 for other impairments. One of the nine segments has been moved to Category 2 because the impaired portion of the original segment is now included as part of another water body segment. Errors in the original listings were corrected for two segments. MassDEP also delisted one segment that should have been delisted in a prior cycle.

Waters Nominated by the Public

During the public review period, a number of water bodies were nominated for inclusion on the 2008 §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 2008 Integrated List of Waters, Responses to Public Comments Pertaining to the Proposed Listing of the Condition of Massachusetts' Waters Pursuant to Sections 303(d) and 305(b) of the Clean Water Act*. As a result of the public comments, Massachusetts added four water body segments to the 2008 §303(d) list. Inner Aucoot Cove (MA95-71), Inner Sippican Harbor (MA95-70), and Wild Harbor River (MA95-

68) were added to Category 5 based upon documents/data provided by the Coalition for Buzzards Bay. The Jones River (MA94-12_2006) was added to Category 5 based upon combined public comment from the Jones River Watershed Association, Mass Audubon, and Taunton River Watershed Alliance. Impairments/stressors associated with water body segments already on the list were modified based upon public comment. Specifically, the impairment causes were refined for Trout Brook, Fuller Brook, and the Connecticut River between the Deerfield River and the Holyoke Dam. Massachusetts also decided to not list a number of water bodies and impairments/stressors that were nominated by members of the public. The rationales for not listing specific water bodies and impairments/stressors are provided in the *Responses to Public Comments* document. EPA has reviewed this document and has concluded that Massachusetts' decision not to include those water bodies identified by the public on the 2008 Integrated List is reasonable for the reasons discussed below.

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 water bodies, the submitted information either did not provide the necessary quality assurance/quality control documentation that Massachusetts requires, or it was not comprehensive enough to support listing (e.g., an insufficient number of samples).

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 use 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. At the same time, we note that there are a number of watershed groups that are attempting to satisfy Massachusetts' listing criteria, and have even received MassDEP's approval of their sampling protocols, but have nevertheless failed to submit data that MassDEP felt it could rely on. We strongly encourage MassDEP to continue to do outreach to these organizations and clarify what exactly MassDEP needs in order to accept data for listing decision purposes.

Although MassDEP did not list all waters and/or impairments/stressors nominated by the public for inclusion on the §303(d) list, MassDEP did place many water body segments in Category 3, which means there is insufficient data and/or information to make a use support determination. In addition, MassDEP identified five segments in the Connecticut River with an "alert status" due, in part, to the risk that fish tissue contaminants (including mercury) pose to fish-eating wildlife. This means that the water bodies may be showing some indication of water quality impairment, but there is insufficient information to place the water body segment on the §303(d) list. For these water bodies, the "alert status" will signify during the next assessment process that there is a water quality issue that needs to be addressed. Identifying a water body in an

“alert status” does not affect its listing status. There were many issues raised by the Connecticut River Watershed Council and EPA concurs with MassDEP’s responses to the Council’s questions. EPA recommends that, to the extent resources allow, MassDEP continue to monitor the in-stream biota in the Connecticut River in response to the significant concerns raised by the Council regarding the potential for bioaccumulation of mercury in fish-eating wildlife. EPA, along with the Council, also encourages MassDEP to consider prioritizing the waters that receive NPDES discharges for monitoring in its rotating watershed management cycle.

There were several specific comments regarding the listing of water body segments for nutrients. There are no numerical standards for nutrients in the Massachusetts Surface Water Quality Standards and the MassDEP 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) prohibit nutrients in amounts that would cause or contribute to the impairment of existing and designated uses. On a case-by-case basis the MassDEP will use evidence of eutrophic conditions, such as wide ranges in dissolved oxygen concentration, elevated chlorophyll *a* 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 2008 303(d) list. In light of the narrative criteria, EPA believes it is reasonable for MassDEP to conclude that nutrient concentrations above normal background levels do not, in and of themselves, constitute use impairment. It is possible that a water body 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). The Coalition for Buzzards Bay and the Charles River Watershed Association raised particular concerns regarding nutrient impairment of specific water bodies. In response to these concerns, EPA recommends that MassDEP work with the Coalition for Buzzards Bay to ensure that the data gathered by the Coalition will be sufficiently representative for nutrient assessment of Wild Harbor. EPA also recommends that MassDEP continue to evaluate any evidence of eutrophic conditions that may be indicative of nutrient impairment in the Charles River Watershed.

There were also several questions regarding the listing of segments for pathogens. EPA concurs with the rationale MassDEP used for not including those segments on the 2008 §303(d) list for pathogens. The Charles River Watershed Association expressed concern relative to possible pathogen impairments in four tributary brooks in the Charles River watershed. One of these streams, Sawmill Brook, is addressed by the Pathogen TMDL for the Charles River Watershed which EPA approved on May 22, 2007. MassDEP completed the new Charles River 2002-2006 Watershed Water Quality Assessment Report in April 2008. MassDEP will continue to identify and address pathogen impairments in the Charles River Watershed using the new assessment report and during implementation of the TMDL. The Mystic River Watershed Association submitted data showing elevated pathogen levels in four brooks in the watershed. MassDEP explained that there is insufficient data and information, including questions concerning the quality assurance of the samples collected and sampling locations to justify placing the water body segments on the list. Massachusetts indicated in its response to comments that new assessments of the Boston Harbor Watersheds (i.e., Mystic, Neponset, Weymouth, and Weir) will be initiated in 2009 as resources allow. EPA recommends that MassDEP work with

MyRWA to improve quality assurance so that data MyRWA gathers may be relied upon for future pathogen assessments in the watershed.

The Mystic River Watershed Association requested that MassDEP assess Bellevue Pond, Cummings Brook, Hill's Pond, Sales Creek, Shaker Glen Brook, Spot Pond and Upper Mystic Lake as they are listed in Category 3 as having none of their uses assessed. MassDEP has indicated in their response to the comments that they will attempt to honor the request to the extent that they are able, however they note that it will not be possible to monitor all waters in the watershed.

Flow alteration of Massachusetts water bodies was raised as an issue of considerable concern by the Jones River Watershed Association, Mass Audubon, the Taunton River Watershed Alliance, and the Charles River Watershed Association. Flow alteration can result from a variety of causes, including water withdrawals (leading to low flows) and excess stormwater runoff (leading to high, flashy flows). As explained in EPA's *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act* issued July 29, 2005 (US EPA, 2005)(available at <http://www.epa.gov/owow/tmdl/2006IRG/>), waters that are impaired due solely to flow alteration and not to any associated pollutant, need not be listed on the §303(d) list. Rather, such waters should be listed in Category 4C. The §303(d) list is limited to waters impaired by "pollutants", whereas Category 4C includes waters impaired by other forms of pollution. Therefore, EPA agrees that MassDEP's decision not to list flow impaired waters was reasonable in the absence of any associated pollutant impairments. At the same time, EPA recognizes that flow impairment is a serious water quality issue and strongly encourages the MassDEP to continue to pursue the most effective and expeditious approach to addressing the impacts of water withdrawals and other flow alterations on the waters of the Commonwealth. EPA recommends that the specific concerns raised by the above public-interest groups be the focus of these efforts and that MassDEP continue to actively work with the public on this critical issue.

Section 319 Nonpoint Source Assessments. Massachusetts has properly listed waters with non-point sources causing, or expected to cause, impairment consistent with §303(d) and EPA guidance. Section 303(d) lists are to include all water quality limited segments 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 §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 §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 2006 Integrated Reporting Guidance.

In the development of the 2008 §303(d) list, waters identified by the Commonwealth as impaired or threatened in non-point assessments performed by the Commonwealth, in accordance with §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 §303(d)

and EPA guidance.

Massachusetts considered its NPS Assessment Report (1989) submitted to EPA in accordance with §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, 2002, 2004, and 2006 §303(d) lists unless new monitoring data indicated the water/pollutant was in attainment with water quality standards. NPS impaired waters remaining on the 2006 §303(d) list were again carried forward to the 2008 §303(d) list unless (1) new monitoring data indicated the water/pollutant was in attainment with water quality standards or (2) it was determined that the cause of the impairment was not due to a pollutant.

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 §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 2008 §303(d) submission identifies several targeted water bodies where TMDL work is either ongoing or planned for the near future (see pages 28 and 29 of the Integrated List). These include the development of TMDLs for nutrients in estuaries in Southeastern Massachusetts, TMDLs for pathogens by watershed throughout the Commonwealth, and TMDLs for nutrients for the Nashua and Upper Charles Rivers. In addition, several more TMDL and monitoring projects in support of TMDL development are set out on page 29 on the Integrated Report and in MassDEP's Work Plan under "Restore Degraded Water Quality" at: <http://mass.gov/dep/water/priorities/sggwhome.htm#restore>. 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.

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 MassDEP evaluated the causes and locations of impairments across the Commonwealth. The data on causes of impairments in assessed waters taken from the 2006 Integrated Report overwhelmingly indicated that the major causes of impairment are excess nutrients and pathogens. Excess nutrients and their associated effects, such as low dissolved oxygen and noxious aquatic plants, were identified as the cause of impairment in approximately 43% of the Commonwealth's waters. The biggest single cause of impairment was found to be pathogens, which was identified as a problem in roughly 23% of the Commonwealth's assessed waters. The Commonwealth's *Environmental Progress Report – Surface & Groundwater FY2009* <http://www.mass.gov/dep/water/priorities/09swgw.pdf> indicates that these two causes still account for roughly 66% of the impairments in Massachusetts. As a result, Massachusetts has placed, and will continue to place, a high priority on these issues for TMDL development in the coming years.

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 2006 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 of the listed water body segments. In targeting water bodies for TMDL development, Massachusetts continues to take into account the severity of the pollution and the uses to be made of such waters. Consistent with EPA's regulation (40 CFR §130.7(b)(4)), Massachusetts did identify the segments targeted for TMDL development in the next two years. 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 responsive to any questions or comments raised by EPA - New England during the development and review of the 2008 §303(d) list.

Water Bodies on Tribal Lands

EPA's approval of Massachusetts' 2008 §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. §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 §303(d) for those waters.