



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region 1  
5 Post Office Square, Suite 100  
Boston, MA 02109-3912

February 24, 2021

Martin Suuberg, Commissioner  
Department of Environmental Protection  
One Winter Street  
Boston, MA 02108

Re: Approval of the Final Pathogen TMDL for the Parker River Watershed

Dear Commissioner Suuberg:

Thank you for your Department's submittal of the TMDL analysis for the Parker River Watershed received electronically on January 25, 2021. We appreciate your efforts and involvement with our office to finalize these TMDLs. The U.S. Environmental Protection Agency (EPA) has reviewed the document entitled "Final Pathogen TMDL for the Parker River Watershed January 2021", Control #258.1, and it is my pleasure to approve the 9 Pathogen TMDLs to apply to the surface waters of the watershed as described in the TMDL document. EPA has determined, as set forth in the enclosed review document, that these TMDLs meet the requirements of Section 303(d) of the Clean Water Act (CWA) and EPA's implementing regulations at 40 Code of Federal Regulations (CFR) Part 130.

MassDEP's efforts will help restore water quality and prevent further degradation of these, and adjacent, waterbody segments. My staff and I look forward to continued cooperation with the Massachusetts DEP in exercising our shared responsibility of implementing the requirements under Section 303(d) of the CWA. If you have any questions regarding this approval, please contact Andrea Traviglia at (617) 918-1993 or have your staff contact Toby Stover at (617) 918-1604.

Sincerely,

/s/

Kenneth Moraff, Director  
Water Division

Enclosure

cc:

Laura Blake, MassDEP  
Barbara Kickham, MassDEP  
Mel Cote, US EPA  
Andrea Traviglia, US EPA  
Ivy Mlsna, US EPA

## EPA NEW ENGLAND'S TMDL REVIEW

**TMDL:** Pathogen Total Maximum Daily Load (TMDL) for the Parker River Watershed

**STATUS:** Final

**IMPAIRMENT/POLLUTANT:** 9 fecal coliform TMDLs, 9 enterococci Preventative TMDLs (See Attachment 1)

Waterbodies within the Parker River watershed are not meeting criteria for bacterial pathogens (fecal coliform, *Escherichia coli* (*E. coli*) and enterococci) which is causing impairment of the Primary Contact Recreation and Shellfishing designated uses.

**BACKGROUND:** This TMDL for pathogens in the Parker River watershed applies to nine bacteria-impaired estuarine waterbody segments currently listed as Category 5 waters on the 2016 Massachusetts' 303(d) list. Additionally, this TMDL applies as preventative TMDLs to non-impaired segments in the watershed as these segments are subject to the same stressors and sources as the impaired segments. This document provides TMDL implementation information to stakeholders as well as the framework for future TMDLs. In accordance with EPA regulations [40 CFR 130.7 (c) (ii)], MassDEP conducted a public comment period in 2005 and notified interested parties and stakeholders. In addition to the Final Pathogen TMDL itself, the electronic submittal included, either directly or in reference, the following documents:

- Letter of Transmission
- Appendix A: Response to Comments on Draft TMDL
- Appendix B: EPA Memorandum: TMDLs and WLA
- Appendix C: Summary of TMDLs in the Parker River Watershed
- Massachusetts Surface Water Quality Standards (WQS)
- Massachusetts Year 2016 Integrated List of Waters: Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act (CN 450.1), January 2020.  
<https://www.mass.gov/doc/final-massachusetts-year-2016-integrated-list-of-waters/download>
- U.S. EPA Memorandum: *Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Stormwater Sources and NPDES Permit Requirements Based on Those WLAs*
- U.S. EPA November 26, 2014 Memorandum: *Revisions to the November 22, 2002 Memorandum "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Stormwater Sources and NPDES Permit Requirements Based on Those WLAs"*

The following review explains how the TMDL submission meets the statutory and regulatory requirements of TMDLs in accordance with Section 303(d) of the Clean Water Act, and [40 CFR Part 130].

**Reviewer:** Toby Stover (617-918-1604) [stover.toby@epa.gov](mailto:stover.toby@epa.gov)

## REVIEW ELEMENTS OF TMDLS

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

### **1. Description of Waterbody, Pollutant of Concern, Pollutant Sources and Priority Ranking**

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

This TMDL is for nine estuarine segments in the Parker River watershed. The main segment descriptions are located in Table ES-1 (Main TMDL document), Table 4-3 (Main TMDL document), Section 2.0 (Main TMDL document), Section 4.1 (Main TMDL document) and the land use categories, watershed delineations, bathymetry and MA No-Discharge Zones and are visually depicted in Table 2-1, Figure 2-1, Figure 2-2 and Figure 2-3 of the TMDL document. These waterbody segments are listed on the 2016 Massachusetts Integrated List of Waters as impaired for Primary Contact Recreation Use and Shellfishing Use due to exceedances of the state water quality standards for pathogens (TMDL Document Section 3.0) as measured by the indicator bacteria fecal coliform, enterococci and *E. coli*. Bacteria in concentrations above water quality standards indicate conditions that can potentially cause illness and disease in humans, can cause shellfish to become unsafe to consume and may require a higher level of treatment for drinking water sources. Under Section 303(d) of the Clean Water Act, states are required to compile a list of impaired waterbodies in their biennial water quality report to Congress and to develop TMDLs for these waters so that they will achieve water quality standards. 3

Potential sources of pathogens that are causing exceedances of the criteria are from several different point and nonpoint sources. These sources include failed septic systems, stormwater, improper disposal

from marinas and boats, cesspools, domestic and feral animals, wastewater treatment facilities, agricultural sources, waterfowl and illicit wastewater connections (TMDL Document Section 5.0).

The Priority Ranking for the impaired segment has been labeled “medium” by MassDEP (TMDL Document Section 6.0). Priority ranking is based on when the segment was listed as impaired and the resources available on an annual basis (See MassDEP’s Consolidated Assessment and Listing Methodology (CALM) document) to develop TMDLs for impaired waterbodies.

**Assessment:** EPA concludes that the TMDL document meets the requirements for describing the waterbody segments, pollutants of concern, identifying and characterizing sources of impairment and priority ranking. The site-specific information provided in this submission, in conjunction with the documentation on Massachusetts Water Quality Standards used to set the bacterial targets, satisfies the requirements for TMDL submission.

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

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

Water quality standards and classification for all surface waters have been established in state statute at 314 CMR 4.00. Revisions to the WQS were in transition during the development of statewide pathogen TMDLs and were formally changed after the draft reports were produced. The new bacteria indicator standards are presented in Table ES-2 and 7-1 and can be found at:

<https://www.mass.gov/regulations/314-CMR-4-the-massachusetts-surface-water-quality-standards>. The water quality standards for these classifications are included in the TMDL document in Section 3.0. In 2007, Massachusetts revised its freshwater standards by replacing fecal coliform with *E. coli* and enterococci as the regulated indicator bacteria in freshwater systems, as recommended by the EPA in the “Ambient Water Quality Criteria for Bacteria – 1986” and “2012 Recreational Water Quality Criteria” documents (US EPA 1986 and US EPA 2012). Fecal coliform remains the indicator organism for shellfishing areas, which are classified by the Massachusetts Division of Marine Fisheries (pgs. 11- 12, TMDL document). Additionally, the Massachusetts Department of Public Health has established minimum standards for bathing beaches (pgs. 12-13, TMDL document), which have been adopted by the MassDEP as state surface WQS for fresh water and will apply to this TMDL. The classifications and standards for both DPH bathing beaches and DMF have been integrated into MassDEP’s CALM document for monitoring, assessing and listing of Massachusetts waterbodies.

Massachusetts Surface Water Quality Standards set the following limits for bacterial concentrations by waterbody classification:

- **Class A:** Unfiltered water supply intakes – either fecal coliform shall not exceed 20 colony forming units, or cfu, per 100 ml in all samples taken in any six month period, or total coliform shall not exceed 100 cfu/100 ml in 90% of the samples in any six- month period.
- **Class SA:** Shellfishing Approved- geometric mean for fecal coliform shall not exceed 14 cfu/100 mL, and 10% of the samples shall not exceed 28 cfu/100 mL;
- **Class SB:** Shellfishing Approved (but not necessarily open)- geometric mean for fecal coliform shall not exceed 88 cfu/100 mL, and 10% of samples shall not exceed 260 cfu/100 mL;
- **Class SA and SB Beaches and non-designated shellfish areas:** geometric mean for enterococci shall not exceed 33 cfu/100 mL, and a single sample shall not exceed 104 cfu/ 100 mL for the purposes of beach closure.
- **Class B –Beaches-** geometric average for *E. coli* shall not exceed 126 cfu/100 mL, and a single sample shall not exceed 235 cfu/100 mL

Massachusetts Division of Marine Fisheries has the following designations for shellfish growing areas:

- **Approved** "...open for harvest of shellfish for direct human consumption subject to local rules and regulations..." An approved area is open all the time and closes only due to hurricanes or other major coastwide events."
- **Conditionally Approved** "...subject to intermittent microbiological pollution..." During the time the area is open, it is "...for harvest of shellfish for direct human consumption subject to local rules and regulations..." A conditionally approved area is closed some of the time due to runoff from rainfall or seasonally poor water quality. When open, shellfish harvested are treated as from an approved area."
- **Restricted** "...area contains a "limited degree of pollution." It is open for "harvest of shellfish with depuration subject to local rules and state regulations" or for the relay of shellfish. A restricted area is used by DMF for the relay of shellfish to a less contaminated area."
- **Conditionally Restricted** "...subject to intermittent microbiological pollution..." During the time area is restricted, it is only open for "the harvest of shellfish with depuration subject to local rules and state regulations." A conditionally restricted area is closed some of the time due to runoff from rainfall or seasonally poor water quality. When open, only soft shell clams may be harvested by specially licensed diggers (Master/Subordinate Diggers) and transported to the DMF Shellfish Purification Plant for depuration (purification)."
- **Prohibited** – "Closed for harvest of shellfish."

Massachusetts Department of Public Health has the following standards for bathing beaches:

- **Marine Waters** - No single enterococci sample shall exceed 104 colonies per 100 mL and the geometric mean of the most recent five enterococci levels within the same bathing season shall not exceed 35 colonies per 100 mL.

- **Freshwaters** - No single *E. coli* sample shall exceed 235 colonies per 100 mL and the geometric mean of the most recent five *E. coli* samples within the same bathing season shall not exceed 126 colonies per 100 mL; or (2) No single enterococci sample shall exceed 61 colonies per 100 mL and the geometric mean of the most recent five enterococci samples within the same bathing season shall not exceed 33 colonies per 100 mL.

**Assessment:** EPA concludes that MassDEP has properly presented and applied WQS for pathogens to set the appropriate targets. MassDEP is directly applying the numeric standards for bacterial concentrations from the Massachusetts Surface Water Quality Standards as well as the numeric standards for bathing beaches from the Massachusetts Department of Public Health and Beach Act standards to derive the TMDL targets. Additionally, MassDEP is applying the narrative standards for shellfish growing areas from DMF regulations. This is a reasonable approach and is in line with MA water quality standards, DPH standards and DMF standards.

### 3. Loading Capacity - Linking Water Quality and Pollutant Sources

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

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

This TMDL sets the loading capacity for each waterbody equal to the water quality standard for bacterial concentration based on source type and the waterbody classification. The loading capacity of each estuary segment was determined using the bacterial concentration in conjunction with the volume of runoff contribution to each estuary segment from the contributing watershed. Table 7-1 identifies potential sources and categorizes them appropriately as either belonging to the Waste Load Allocation (point source) or the Load Allocation (non-point source) portion of the TMDL and sets the appropriate bacteria concentration target based on waterbody classification. Waste Load Allocations are based on

the water quality standard concentration at the end of the pipe or discharge point, while Load Allocations are based on the water quality standard for bacteria in the waterbody. All loading from illicit discharges or malfunctioning systems is set to zero. Stormwater loading contributions were separated into Waste Load and Load Allocations based on the area of impervious and pervious for each contributing watershed with the percentage of impervious area contribution assigned to the Waste Load Allocation and the percentage of pervious area contribution assigned to the Load Allocation.

**Assessment:** EPA concludes that the loading capacity which was calculated using the water quality bacteria concentration standards based on waterbody classification and runoff from the contributing watershed, has been appropriately set at a level necessary to attain and maintain applicable water quality standards. This approach is consistent with how loads are calculated for pollutants with numeric water quality criteria and observed conditions. The resulting TMDL is based on a reasonable approach for establishing the relationship between pollutant loading and water quality.

#### **4. Load Allocations (LAs)**

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

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

The Load Allocation (LA) relates to existing and future nonpoint sources, natural background, and stormwater runoff not subject to NPDES permitting. The nonpoint sources of bacteria discharging to these nine estuarine segments include diffuse stormwater, domestic animals, wildlife, agriculture, failing septic systems and waterfowl. The Load Allocations for these TMDLs were calculated by using the number of colony-forming units of bacteria per milliliter in conjunction with annual precipitation, land area and pervious surface within the 200 foot buffer zone to a waterbody in order to calculate the load per year. This value was then divided by 365 to arrive at the daily load for the waterbody. See TMDL Table 7-3 for calculated Load Allocations (cfu/day) by embayment for the Parker River watershed. See Attachment 2 to this document for a description of concentration-based targets.

**Assessment:** EPA concludes that MassDEP has identified and allocated appropriate bacterial loads to nonpoint sources of pollution within the watershed.

#### **5. Wasteload Allocations (WLAs)**

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

*background will result in attainment of the applicable water quality standard, and all point sources will be removed.*

*In preparing the wasteload allocations, it is not necessary that each individual point source be assigned a portion of the allocation of pollutant loading capacity. When the source is a minor discharger of the pollutant of concern or if the source is contained within an aggregated general permit, an aggregated WLA can be assigned to the group of facilities. But it is necessary to allocate the loading capacity among individual point sources as necessary to meet the water quality standard.*

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

The Waste Load Allocation accounts for all sources within the watershed that are attributed to point sources of bacteria pollution. The point sources of bacteria discharging to these nine estuarine segments include wastewater treatment facilities, MS4 regulated stormwater, illicit sewage connections, illicit boat and marina sewage disposal, leaking sanitary systems, and Combined Sewer Overflows (CSOs). The Waste Load Allocations for these TMDLs were calculated by using the number of colony-forming units of bacteria per milliliter in conjunction with annual precipitation, land area and impervious surface within the 200 foot buffer zone to a waterbody in order to calculate the load per year. This value was then divided by 365 to arrive at the daily load for the waterbody. See TMDL Table 7-3 for calculated Waste Load Allocations (cfu/day) by embayment for the Parker River watershed. See Attachment 2 to this document for a description of concentration-based targets.

**Assessment:** EPA concludes that MassDEP has identified and allocated appropriate bacterial loads to point sources of pollution within the watershed.

## **6. Margin of Safety (MOS)**

*The statute and regulations require that a TMDL include a margin of safety to account for any lack of knowledge concerning the relationship between load and wasteload allocations and water quality (CWA § 303(d)(1)(C), 40 C.F.R. § 130.7(c)(1)). EPA guidance explains that the MOS may be implicit, i.e., incorporated into the TMDL through conservative assumptions in the analysis, or explicit, i.e., expressed in the TMDL as loadings set aside for the MOS. If the MOS is implicit, the conservative assumptions in the analysis that account for the MOS must be described. If the MOS is explicit, the loading set aside for the MOS must be identified.*

These TMDLs use an implicit Margin of Safety (MOS) which is based on three conservative assumptions (Section 7.5). The first assumption is that there is no mixing in receiving waters and that there is no dilution available within receiving waters of bacterial pollution. This premise assumes that there is no additional capacity for loading within a waterbody. The second assumption is that there is no die off or settling of bacteria within a waterbody after discharge to that waterbody. Die off and settling are typical within receiving waters. The third assumption is that all of the impervious runoff within a contributing watershed makes it into the impaired segment. This assumes that all of the impervious area is all directly connected to the waterbody which is not likely to occur.



**Assessment:** EPA concurs that an adequate margin of safety is provided by the implicit MOS due to several conservative assumptions that were part of the TMDL allocations.

## 7. Seasonal Variation

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

These TMDLs are set for year-round conditions as the TMDL bacterial loads are set at the water quality standards regardless of season. Seasonal variability is also accounted for in the sampling data as samples are taken at various points in the year in all seasons.

**Assessment:** EPA concludes that the TMDL is protective of water quality under all conditions during all seasons throughout the year.

## 8. Monitoring Plan

*EPA's 1991 document, Guidance for Water Quality-Based Decisions: The TMDL Process (EPA 440/4-91-001), and EPA's 2006 guidance, Clarification Regarding "Phased" Total Maximum Daily Loads, recommend a monitoring plan when a TMDL is developed using the phased approach. The guidance indicates that a State may use the phased approach for situations where TMDLs need to be developed despite significant data uncertainty and where the State expects that the loading capacity and allocation scheme will be revised in the near future. EPA's guidance provides that a TMDL developed under the phased approach should include, in addition to the other TMDL elements, a monitoring plan that describes the additional data to be collected and a scheduled timeframe for revision of the TMDL.*

Bacterial monitoring is ongoing within the watershed and is being carried out by a multitude of organizations including: MassDEP, Office of Coastal Zone Management, Merrimack Valley Planning Commission, Massachusetts Audubon Society, Marine Biological Laboratory Marine Ecosystem Research Center, Parker River Clean Water Association, Division of Marine Fisheries and communities within the Parker River watershed. Another aspect of these monitoring efforts has been to identify sources of bacteria and implement actions to reduce and or eliminate these sources. The monitoring plan (Section 9.0) calls for ongoing monitoring utilizing an EPA approved Quality Assurance Project Plan (QAPP), monitoring of segments where data is lacking, monitoring of Best Management Practices (BMPs) and areas where illicit connections have been removed, assemble all available data into a comprehensive report and add or remove BMPs as needed based on monitoring results.

**Assessment:** EPA concludes that the continued monitoring by MassDEP and others is sufficient to evaluate the adequacy of the TMDLs and attainment of Water Quality Standards, although not a required element for TMDL approval. EPA is taking no action on the monitoring plan.

## 9. Implementation Plans

*On August 8, 1997, Bob Perciasepe (EPA Assistant Administrator for the Office of Water) issued a memorandum, "New Policies for Establishing and Implementing Total Maximum Daily Loads (TMDLs)," that directs Regions to work in partnership with States/Tribes to achieve nonpoint source load allocations established for 303(d)-listed waters impaired solely or primarily by nonpoint sources. To this end, the memorandum asks that Regions assist States/Tribes in developing implementation plans that*

*include reasonable assurances that the nonpoint source load allocations established in TMDLs for waters impaired solely or primarily by nonpoint sources will in fact be achieved. The memorandum also includes a discussion of renewed focus on the public participation process and recognition of other relevant watershed management processes used in the TMDL process. Although implementation plans are not approved by EPA, they help establish the basis for EPA's approval of TMDLs.*

An implementation plan is provided in the submission (TMDL Section 8.0) which summarizes the major identified sources of pollution and gives general and specific recommendations for abating them. Table 8-1 identifies the list of tasks required for successful implementation of the TMDLs and what organization is responsible for each task or tasks. The plan discusses several types of best management practices to reduce runoff from stormwater, agriculture and other non-point sources of pollution as well as recommendations on how to address illicit sewage connections and failing sewer and septic system infrastructure. Additionally, there are recommendations on how to address recreational impacts from boat discharges and marina facilities. The plan also discusses the opportunities that may be provided by the Clean Water Act Section 319 program for nonpoint source pollution abatement as well as other programs and grant funding opportunities.

**Assessment:** MassDEP has addressed the implementation plan, although it is not required for TMDL approval. EPA is taking no action on the implementation plan.

## **10. Reasonable Assurances**

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

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

Reasonable assurance is not required for this TMDL because point sources are not given a less stringent wasteload allocation based on the assumption of future nonpoint source load reductions. Although not required, the TMDL cites several additional elements of reasonable assurance:

- Massachusetts Clean Water Act, Wetlands Protection Act, Rivers Protection Act, groundwater discharge program, plant nutrient regulations
- Federal Clean Water Act and associated programs
- Massachusetts Water Quality Standards
- Tools to address CSOs

- Tools to address failed septic systems
- Additional tools to address stormwater
- Financial tools

**Assessment:** MassDEP has addressed reasonable assurance, although it is not required for TMDL approval. EPA is taking no action on reasonable assurance.

## 11. Public Participation

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

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

Two public meetings were held at 3pm and 7pm at the Lawrence Heritage Park in Lawrence on 8/18/2005 to present information to the public and solicit feedback from the public. A public comment period followed from August 18, 2005 until September 12, 2005. MassDEP has provided the attendance list, public comments and MassDEP's responses to the public comments as Appendix A to the TMDL document.

**Assessment:** EPA concludes that MassDEP has appropriately involved the public during the development of the TMDL and has provided adequate opportunities for the public to comment on the TMDL.

## 12. Submittal Letter

*A submittal letter should be included with the TMDL analytical document, and should specify whether the TMDL is being submitted for a technical review or is a final submittal. Each final TMDL submitted to EPA must be accompanied by a submittal letter that explicitly states that the submittal is a final TMDL submitted under Section 303(d) of the Clean Water Act for EPA review and approval. This clearly establishes the State/Tribe's intent to submit, and EPA's duty to review, the TMDL under the statute. The submittal letter, whether for technical review or final submittal, should contain such information as the name and location of the waterbody, the pollutant(s) of concern, and the priority ranking of the waterbody.*

The letter of submission accompanying the *Final Pathogen TMDL for the Parker River Watershed January 2021* is dated January 21, 2021 and was received electronically by EPA on January 25, 2021. MassDEP clearly states that the Final TMDL document has been submitted to EPA for approval in accordance with Section 303(d) of the Clean Water Act. The submittal letter along with the appendices and public notice

provides all of the required documentation necessary for approval of the Parker River watershed pathogen TMDL.

**Assessment:** MassDEP’s letter of January 21, 2021 (received electronically on January 25, 2021) states that the TMDL is being formally submitted for EPA review and approval. 12

**Attachment 1:** Summary of TMDLs in Parker River Watershed.

Segment ID	Name	Class/Qualifier	Impaired Use	Cause	TMDL Type (Cause)
MA91-06	Eagle Hill River	SA, B/ORW	Primary Contact	Fecal Coliform	Restoration (Fecal Coliform), Preventative (Enterococci)
MA91-14	Egypt River	SA, B/ORW	Primary Contact	Fecal Coliform	Restoration (Fecal Coliform), Preventative (Enterococci)
MA91-11	Little River	SA, B/ORW	Primary Contact	Fecal Coliform	Restoration (Fecal Coliform), Preventative (Enterococci)
MA91-09	Mill River	SA/Shellfishing /ORW	Shellfish Harvesting	Fecal Coliform	Restoration (Fecal Coliform), Preventative (Enterococci)
MA91-03	Paine Creek	SA/ORW	Primary Contact	Fecal Coliform	Restoration (Fecal Coliform), Preventative (Enterococci)
MA91-02	Parker River	SA/Shellfishing /ORW	Shellfish Harvesting	Fecal Coliform	Restoration (Fecal Coliform),

					Preventative (Enterococci)
MA91-15	Plum Island River	SA/Shellfishing /ORW	Shellfish Harvesting	Fecal Coliform	Restoration (Fecal Coliform), Preventative (Enterococci)
MA91-12	Plum Island Sound	SA/Shellfishing /ORW	Shellfish Harvesting	Fecal Coliform	Restoration (Fecal Coliform), Preventative (Enterococci)
MA91-05	Rowley River	SA/Shellfishing /ORW	Shellfish Harvesting	Fecal Coliform	Restoration (Fecal Coliform), Preventative (Enterococci)

Data for entry in EPA's National TMDL Tracking System									
TMDL Name *			Final Pathogen TMDL for the Parker River Watershed						
Number of TMDLs*			9 restoration TMDLs, 9 protection TMDLs						
Type of TMDLs*			Pathogens (fecal coliform, enterococcus)						
Number of listed causes/parameters (from 303(d) list)			9						
Lead State			Massachusetts (MA)						
TMDL Status			Final						
Individual TMDLs listed below									
TMDL ID#	TMDL Segment name	TMDL Segment ID #	TMDL, Protection Plan, OR Alternative*	TMDL Pollutant ID# & name	TMDL Impairment PARAMETERS/ Cause(s), ID# and name	Pollutant endpoint	Unlisted?	MA DEP Point Source & ID#	Listed for anything else?
R1_MA_2021_01	Eagle Hill River	MA91-06	TMDL	Fecal Coliform	Fecal Coliform	GM <=14 cfu/100mL 10% of samples NTE 28 cfu/100mL	N		
R1_MA_2021_01p	Eagle Hill River	MA91-06	PP	Enterococcus	None – preventative	GM <=35 cfu/100mL single sample <= 104 colonies/ 100 mL	Y		
R1_MA_2021_01	Egypt River	MA91-14	TMDL	Fecal Coliform	Fecal Coliform	GM <=14 cfu/100mL 10% of samples NTE 28 cfu/100mL	N		
R1_MA_2021_01p	Egypt River	MA91-14	PP	Enterococcus	None – preventative	GM <=35 cfu/100mL single sample <= 104 colonies/ 100 mL	Y		
R1_MA_2021_01	Little River	MA91-11	TMDL	Fecal Coliform	Fecal Coliform	GM <=14 cfu/100mL 10% of samples NTE 28 cfu/100mL	N		
R1_MA_2021	Little	MA91-11	PP	Enterococcus	None –	GM <=35 cfu/100mL	Y		

_01p	River				preventative	single sample <= 104 colonies/ 100 mL			
R1_MA_2021_01	Mill River	MA91-09	TMDL	Fecal Coliform	Fecal Coliform	GM <=14 cfu/100mL 10% of samples NTE 28 cfu/100mL	N		
R1_MA_2021_01p	Mill River	MA91-09	PP	Enterococcus	None – preventative	GM <=35 cfu/100mL single sample <= 104 colonies/ 100 mL	Y		
R1_MA_2021_01	Paine Creek	MA91-03	TMDL	Fecal Coliform	Fecal Coliform	GM <=14 cfu/100mL 10% of samples NTE 28 cfu/100mL	N		
R1_MA_2021_01p	Paine Creek	MA91-03	PP	Enterococcus	None – preventative	GM <=35 cfu/100mL single sample <= 104 colonies/ 100 mL	Y		
R1_MA_2021_01	Parker River	MA91-02	TMDL	Fecal Coliform	Fecal Coliform	GM <=14 cfu/100mL 10% of samples NTE 28 cfu/100mL	N		
R1_MA_2021_01p	Parker River	MA91-02	PP	Enterococcus	None – preventative	GM <=35 cfu/100mL single sample <= 104 colonies/ 100 mL	Y		
R1_MA_2021_01	Plum Island River	MA91-15	TMDL	Fecal Coliform	Fecal Coliform	GM <=14 cfu/100mL 10% of samples NTE 28 cfu/100mL	N		

R1_MA_2021_01p	Plum Island River	MA91-15	PP	Enterococcus	None – preventative	GM <=35 cfu/100mL single sample <= 104 colonies/ 100 mL	Y		
R1_MA_2021_01	Plum Island Sound	MA91-12	TMDL	Fecal Coliform	Fecal Coliform	GM <=14 cfu/100mL 10% of samples NTE 28 cfu/100mL	N		
R1_MA_2021_01p	Plum Island Sound	MA91-12	PP	Enterococcus	None – preventative	GM <=35 cfu/100mL single sample <= 104 colonies/ 100 mL	Y		
R1_MA_2021_01	Rowley River	MA91-05	TMDL	Fecal Coliform	Fecal Coliform	GM <=14 cfu/100mL 10% of samples NTE 28 cfu/100mL	N		
R1_MA_2021_01p	Rowley River	MA91-05	PP	Enterococcus	None – preventative	GM <=35 cfu/100mL single sample <= 104 colonies/ 100 mL	Y		
TMDL Type				Nonpoint Sources					
Establishment Date (approval)*				February 24, 2021					
Completion (final submission) Date				January 25, 2021					
Public Notice Date				August 18, 2005					
EPA Developed				No					
Towns affected* (in alphabetical order)				Boxford, Georgetown, Groveland, Ipswich, Newbury, Newburyport, North Andover, Rowley, West Newbury					

\*Abbreviations:  
TMDL = TMDL



Protection Plan = PP

Alternative Restoration Plan = ARP