



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**REGION I**  
**5 POST OFFICE SQUARE, SUITE 100**  
**BOSTON, MASSACHUSETTS 02109-3912**

May 20, 2020

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

Re: Approval of the Final Pathogen TMDL for Islands Watersheds

Dear Commissioner Suuberg:

Thank you for your Department's submittal of the TMDL analysis for the Islands Watersheds on May 15, 2020. 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 Islands Watersheds", Control #254.1, April 2020, and it is my pleasure to approve the 11 Pathogen TMDLs and 9 protective TMDLs to apply to the surface waters of the watersheds 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 Ralph Abele at (617) 918-1629 or have your staff contact Ivy Mlsna of my staff at (617) 918-1311.

Sincerely,

/s/

Kenneth Moraff, Director  
Water Division

Enclosure

cc:  
Laura Blake, MA DEP  
Barbara Kickham, MA DEP  
Ralph Abele, US EPA  
Ivy Mlsna, US EPA

## EPA NEW ENGLAND'S TMDL REVIEW

**DATE:** May 20, 2020

**TMDL:** Final Pathogen TMDL for the Islands Watershed

**STATUS:** Final

**IMPAIRMENT/POLLUTANT:** 11 Pathogen TMDLs, 9 Pathogen Pollution Prevention TMDLs (See Attachment 1)

**BACKGROUND:** EPA Region 1 received the *Final Pathogen Total Maximum Daily Loads for the Islands Watershed* (Control Number: CN 254.1) with a transmittal letter dated April 22, 2020. In addition to the Final Pathogen TMDL itself, the submittal included, either directly or in reference, the following documents:

- Public Meeting Information and Response to Comments, Appendix A
- Massachusetts Surface Water Quality Standards (WQS)
- Massachusetts Year 2014 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), December 2015.  
<http://www.mass.gov/eea/docs/dep/water/resources/07v5/14list2.pdf>
- 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 § 303(d) of the Clean Water Act and EPA's implementing regulations in 40 CFR Part 130.

**REVIEWERS:** Ivy Mlsna (617-918-1311) e-mail: [mlsna.ivy@epa.gov](mailto:mlsna.ivy@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 which are required by regulation. The TMDL submittal should also contain a description of any important assumptions made in developing the TMDL, such as: (1) the assumed distribution of land use in the watershed; (2) population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources; (3) present and future growth trends, if taken into consideration in preparing the TMDL; and, (4) explanation and analytical basis for expressing the TMDL through surrogate measures, if applicable. Surrogate measures are parameters such as percent fines and turbidity for sediment impairments, or chlorophyll a and phosphorus loadings for excess algae.*

#### **A. Description of Waterbody, Priority Ranking, and Background Information**

The Islands Watershed (or coastal drainage area) includes Nantucket, Martha's Vineyard and the Elizabeth Islands. Nantucket is a 49 square mile (mi<sup>2</sup>) island surrounded by the Atlantic Ocean. The Town of Nantucket, which is a county as well, encompasses the entire island. It is a combination of moraines and outwash plain resulting primarily from the last episode of glaciation that affected the Northeastern United States about 15,000 years ago, with elevations up to approximately 100 feet above sea level and 94 miles of shoreline. On Nantucket, nitrogen and pathogen overloading occurs as the result of faulty septic systems leaching into groundwater, and enriched fertilizers and other agricultural additives that collect in stormwater runoff; both groundwater and runoff eventually reach the coast. Additional pathogen pollution can enter estuaries from failing septic and wastewater systems, boat sewage, and animal wastes.

Martha's Vineyard is a 96 mi<sup>2</sup> island consisting of six towns: Chilmark, Edgartown, Gay Head, Oak Bluffs, Tisbury and West Tisbury. The maximum elevation on Martha's Vineyard is roughly 300 feet. There are approximately 125 miles of shoreline, ranging from nine miles in West Tisbury to 49 miles in Edgartown. On Martha's Vineyard, the majority of residents dispose of wastewater via on-site septic systems. Only those residents and businesses in downtown Oak Bluffs, Edgartown, and Tisbury are served by wastewater collection systems with central sewage treatment. Nitrogen in the form of nitrate, as well as pathogens, travel with groundwater to springs and seeps along the shore and shallow tidal areas in the ponds, with nitrates generating the growth of microscopic plants and algae. When these are stimulated to excess levels of growth, the capability of the system to support eelgrass, shellfish and finfish is harmed. Pathogens in shellfish can be harmful for human consumption.

The Elizabeth Islands are a chain of fifteen islands encompassing 13.6 mi<sup>2</sup> with approximately 54

miles of tidal shoreline in the town of Gosnold, Dukes County. One family owns and manages all but two of the islands (Cuttyhunk and Penikese). Most of the Elizabeth Islands are grassy with areas of low woods or shrub growth.

The document discusses a total of 10 waterbodies requiring a TMDL for bacteria impairment. These waterbodies were identified and publicly noticed in the Draft TMDL in accordance with what was reported in the 2002 Integrated List of Waters (§303(d) list). Subsequent to the Draft TMDL, four waterbodies [Edgartown Great Pond, (MA97-17), Menemsha Pond (MA97-06), Oyster Pond (MA97-13), and Westend Pond (MA97-20)] are no longer listed as impaired for pathogens and are therefore not discussed in the document. Additionally, since the publication of the draft TMDL, an additional two waterbodies [Katama Bay (MA97-16), and Long Pond (MA97-29)] in the TMDL study area have been added as pathogen impaired segments that are listed in the 2016 Integrated List of Impaired Waters. However, these segments were not public noticed with the draft so only the 10 remaining segments originally listed in the 2002 Integrated List of Waters (§303(d) list) for Pathogen impairment (based on fecal coliform data), that are currently identified as Category 5 waters (MassDEP 2020), are discussed in the final TMDL. The two additional impaired segments will be addressed later via an addendum. Each segment subject to this TMDL are within estuary areas that are classified as SA, designated for shellfishing.

On the Islands, there is a potential for contamination from illicit connections (e.g., wastewater pipes connected to stormwater drainage). A key to finding illicit connections, failing infrastructure, et cetera is to conduct dry weather bacteria source tracking in those segments where data show elevated levels of bacteria. Identification and remediation of dry weather bacteria sources is usually more straightforward and successful than tracking and eliminating wet weather sources. If anthropogenic bacteria sources are found and eliminated, it should result in a dramatic reduction of pathogen levels in impacted segments under both dry and wet-weather conditions.

## **B. Pollutant of Concern**

The terms “pathogens” and “bacteria” are used to refer to bacteriological data collected and analyzed for Fecal coliform, *E. coli* or Enterococci. The Massachusetts Surface WQS, 314 CMR 4.0, were revised in 2007, replacing Fecal coliform as the water quality indicator for pathogens in both fresh and marine waters with *E. coli* for fresh water and Enterococci for marine waters (MassDEP 2007). Fecal coliform is the water quality indicator used by the Massachusetts Division of Marine Fisheries (DMF) for shellfish harvesting in coastal-estuarine segments. Readily available data for the impaired (Category 5) segments in the Islands Watershed are listed in tables in Section 4 of the TMDL document.

## **C. Pollutant Sources**

Sources of indicator bacteria in the Islands Watershed were found to be many and varied, although most are believed to be stormwater related. In Section 5 of the TMDL document, Table 5-1 provides a general compilation of likely bacteria sources in the Islands Watershed including failing septic systems, certain recreational activities, wildlife including birds as well as domestic pets and animals, and overland stormwater runoff.

Roughly 85% of the buildings in the Islands watershed (including residences and businesses) utilize on-site septic systems for human waste disposal. Only two towns (Nantucket and Edgartown) have municipal wastewater treatment plants, and only a small percentage of the towns are sewered. Septic

system failures, or poorly performing systems, contribute to the bacterial contamination issue throughout the Islands. Stormwater runoff from wet weather events can carry this contamination into surface and ground water aquifers, particularly in and around densely populated areas.

While the stated goal in the TMDL is to meet the water quality standard at the point of discharge, it is also MassDEP's expectation that for stormwater, an approach is needed that includes prioritization of outfalls and the application of Best Management Practices (BMPs) to achieve water quality standards. Given the vast potential number of bacteria sources and the difficulty of identifying and removing them from sources such as stormwater, an iterative process will be required. Table 6-1 of the TMDL document provides a prioritized list of pathogen-impaired segments that will require additional bacterial source tracking work and stepwise implementation of structural and non-structural BMPs.

**Assessment:** EPA Region 1 concludes that the TMDL document meets the requirements for describing the TMDL waterbody segments, pollutant of concern, identifying and characterizing sources of impairment, and priority ranking.

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

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

Section 3.0 of the TMDL document describes the water quality classifications for the Islands watershed, which contains waterbodies designated as Class B, SA and SB. According to the Massachusetts WQS, these waters should be suitable for the following uses: (1) habitat for fish, other aquatic life, wildlife, (2) primary and secondary contact recreation, (3) shellfish harvesting in approved areas, and (4) should have consistently good aesthetic value (Class A and SA waters should have excellent aesthetic value). The pathogen impairments (exceedances of fecal coliform, enterococci, and *E. coli* bacteria criteria) associated with the waterbodies in this report affect primary contact recreation and shellfishing uses. Because 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. 16-17, TMDL document). Additionally, the Massachusetts Department of Public Health has established minimum standards for bathing beaches, which have been adopted by the MassDEP as state surface WQS for fresh water and will apply to this TMDL.

The TMDL document discusses the impaired segments of the Islands watershed in Table 4-4 and in Section 4.0 of the TMDL document (pages 18-29). The water quality classification for each segment, as well as waterbody type, size, and description of uses, monitoring activities, and impairment status is adequately discussed. The water quality criteria applicable to the relevant surface water classifications are included in the TMDL document in Table 7-1. The EPA-approved numeric water quality criteria for each segment are the targets upon which both the daily concentration and load TMDL targets of the Islands watershed TMDLs are based. MassDEP believes it is appropriate to express indicator bacteria TMDLs proportional to flow. Because the Water Quality Standard is also expressed in terms of the concentration of colony-forming organisms per 100 mL, the acceptable daily load or TMDL for each estuary is the product of the contributing watershed runoff and the water quality standard criterion, which is the same approach used for any pollutant with a numerical criterion. The TMDL is based on volume and the concentration of the applicable Massachusetts water quality standard criterion for bacteria. Once the volume is estimated, the total maximum daily load of bacteria in colony-forming units per day is derived by multiplying the estimated runoff volume by the water quality standard criterion for the indicator bacteria (see Tables 7-3 and 7-4 of the TMDL document).

The TMDL document is based on water quality standards current as of the publication date of these TMDLs. If the pathogen criteria change in the future, MassDEP intends to revise the TMDL by addendum to reflect the revised criteria.

**Assessment:** EPA concludes that MassDEP has properly described and interpreted the applicable water quality standards to set the TMDL targets as indicated in Section 3.0 of the TMDL document. Section 4.0 describes each water body segment, including the water body's designated use, applicable WQS, and a summary of data. Section 5.0 and 6.0 discuss sources of pathogens when available and other characteristics such as which segments and sources of pathogens are a priority. MassDEP is directly applying the numeric criteria in its WQS to derive the TMDL targets.

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

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

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

The TMDL document developed TMDL daily targets as both daily concentration for all potential pathogen sources by category and surface water classification, as well as by estimating the total maximum daily load for each river segment as a function of flow and embayments through the calculation of long-term average runoff values. This is a similar approach as used in the Charles River TMDL for pathogens. As discussed in Section 7.2 (Waste Loads Allocations and Load Allocations as Daily Concentration), MassDEP believes that the simplest and most readily understood method of meeting the TMDL is to meet the water quality standards at the point of discharge. These approaches have been used by states for TMDL development and approved by EPA in the past. Water quality targets for the Islands watershed are displayed in Table 7-2 of the TMDL.

In the first approach utilized, MassDEP chose to express the loading capacity in terms of concentrations. These can be seen in Table 7-1 in the TMDL document (and included in this document as Attachment 2). MassDEP believes that expressing a loading capacity for bacteria in terms of concentrations set equal to the Commonwealth's adopted criteria provides the clearest and most understandable expression of water quality goals to the public and to groups that conduct water quality monitoring. The TMDL document describes the general source reductions needed to achieve WQS by land use type as an example, as indicated in Tables 5-2 and 5-3 of the TMDL document. In addition, specific water body segment data are provided that indicate the range in magnitude of the pathogen concentrations for each impaired segment. These can be found by watershed grouping in Section 4.0.

Loading capacity for the Islands watershed was expressed based on flow, however MassDEP is of the opinion that this method is more difficult for the public to understand because the "allowable" loading number of pathogenic organisms varies with flow over time and season. This method also yields loading numbers that are often in the billions and trillions of bacteria per day and therefore do not directly relate to Water Quality Standards, furthering the difficulty of interpretation. The TMDL document summarizes the fecal coliform and enterococci TMDL for each of the 10 marine waterbody segments in Tables 7-3 and 7-4, respectively. For the detailed methodology, please refer to Section 7.3 of the TMDL document.

**Assessment:** TMDLs can be expressed in various ways, including in terms of multiple TMDL targets, or by some "other appropriate measure." 40 C.F.R. § 130.2(i). The target loading capacities expressed in the TMDL document are set at levels which assure WQS will be met (criteria at point of discharge and loading based on meeting ambient water quality criteria). The concentration loading capacity is based on the concentration criteria for each water body. If all sources of pathogens are below the water quality criteria then it follows that the receiving water will meet the WQS for bacteria.

The allowable total bacteria load on an annualized basis was calculated as the water quality standard (14 CFU/100 ml of fecal coliform for Class SA shellfishing) times the estimated annual runoff associated with impervious areas within the 200-foot buffer zone. The daily load of pathogens in CFU/day is then calculated by dividing the allowable annual load by 365 days.

All of the loading capacity targets are directly linked to the Commonwealth's WQS' bacteria criteria and the bacteria levels (pollutants) that must be reduced to achieve full primary contact recreation of the water bodies covered by this TMDL.

#### **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.*

There are many different potential sources of indicator bacteria on the Islands. Most of the bacteria sources are believed to be related to marinas and boating activities, wildlife (particularly birds) and failing septic systems. Some of this pollution is potentially exacerbated by stormwater. Table 7-1 presents the TMDL indicator bacteria WLAs and LAs for the various source categories as daily concentration targets for the Islands. In the case of stormwater, it is often difficult to identify and distinguish between point source discharges that are subject to NPDES regulation and those that are not. Therefore, EPA has stated that it is permissible to include all point source stormwater discharges in the WLA portion of the TMDL; MassDEP has taken this approach. In the Islands Watershed TMDL, it was assumed that no runoff occurs from pervious areas and therefore a load allocation was not applicable. A buffer area of 200 feet was chosen as a reasonable estimate of the area likely to contribute stormwater discharges directly to each embayment. Within this 200 ft area it was assumed that all precipitation (45 inches per year, approximate) runs directly off impervious areas into the water body, while runoff from pervious surfaces is negligible (e.g., 0 inches/yr) because of the medium-to-coarse sandy soils. For any illicit sources, including illicit discharges to stormwater systems and sewer system overflows (SSOs), the goal is complete elimination (100% reduction).

**Assessment:** EPA concludes that the TMDL document sufficiently addresses the calculation of the load allocations, as demonstrated by the foregoing and by the TMDL's administrative record.

#### **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 Islands have several small-scale, package wastewater treatment plants (WWTPs) and no active NPDES-permit related wastewater discharges. NPDES wastewater discharge WLAs are set at the water quality standards. All piped discharges are, by definition, point sources regardless of whether they are currently subject to the requirements of NPDES permits, and bacterial contamination from all piped discharges are set at the applicable WQS. There are numerous stormwater discharges from drainage systems in the watershed, particularly in populated areas. A WLA set equal to the WQS has been assigned to that portion of stormwater flows that discharge to surface waters via storm drains.

**Assessment:** EPA concludes that the TMDL document sufficiently addresses the calculation of the waste load allocations, as demonstrated by the foregoing and by the TMDL's administrative record.

## **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.*

MassDEP employs an implicit MOS in the Islands watershed TMDLs, described in the TMDL document on pages 49-50. There are three factors that contribute to the margin of safety inherent in the approach used to develop this TMDL including:

- 1) The TMDL does not account for mixing in the receiving waters and assumes that zero dilution is available. This is a conservative measure because generally, influent waters mix with receiving waters and dilute below the water quality standard where the receiving water concentration does not exceed the TMDL concentration.
- 2) Attaining WQS at the point of discharge does not account for losses due to die-off and settling of indicator bacteria that are known to occur; and
- 3) The TMDL assumes all runoff from impervious areas from the contributing watershed will enter the impaired segments and does not consider areas of disconnected areas or places where the impervious surfaces are not continually connected.

**Assessment:** EPA concludes that the approach used in developing the TMDL provides for an adequate implicit MOS, as demonstrated by the foregoing and by the TMDL's administrative record.

## **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).*

TMDLs must account for season variation, and pathogen sources may be driven by a mixture of continuous and wet-weather driven sources such that no single critical condition will be protective for all other conditions. To ensure attainment independently of seasonal and climatic conditions, the

TMDL has set the target equal to water quality standards for all known and suspected source categories. This will be protective of the surface water quality regardless of season or weather event.

**Assessment:** The pathogen TMDL applies across all seasons and weather events such that, when implemented, the TMDL targets will reduce pathogen concentrations equal to water quality standards. EPA concludes that the TMDL documents be adequately addressed seasonal variability.

## 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.*

The pathogen TMDL for the Islands watershed is not a phased TMDL, therefore a monitoring plan is not required in order to assure that data is available for updating the TMDL in the near future. However, the document does include the outline of a long-term monitoring plan. Components as stated in the TMDL in Section 9.0 include:

1. Continue current monitoring activities in the Islands Watershed,
2. Focus on water bodies where data are insufficient to determine if use criteria are supported,
3. Monitor areas where BMPs and other control strategies have been implemented or discharges have been removed to assess the effectiveness of the action,
4. Assemble data collected by all monitoring entities into a comprehensive report, and
5. Add/remove/modify BMPs as justified based on monitoring results.

**Assessment:** EPA concludes that the anticipated monitoring is sufficient to evaluate the adequacy of the TMDL and attainment of water quality standards, although is not a required element of EPA's TMDL approval process.

## 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.*

In a detailed discussion in Section 8 of the TMDL, MassDEP suggests a basin-wide implementation strategy that it asserts should include a mandatory program for implementing stormwater BMPs and eliminating illicit discharges. These implementation tasks are outlined in Table 8-1 of the TMDL document and discusses entities likely responsible for taking action. Table 6-1 in the TMDL sets levels of priority for restoration of each impaired segment in the Islands watershed, which will aid in focusing efforts over time. There are numerous organizations on Nantucket and Martha's Vineyard concerned with improving water quality and conserving the islands' natural resources. Many of these organizations have already made strides towards monitoring and/or reducing fecal coliform levels in their waterbodies.

Elevated dry weather bacteria concentrations could be the result of illicit sewer connections, leaking sewer pipes, or failing septic systems. Illicit sanitary sewer connections and leaking sewer pipes are assumed to be an infrequent occurrence on the Islands. However, these sources are illegal and must be eliminated, so first priority will be given to bacteria source tracking activities to investigate potential illicit bacteria sources in segments impaired by bacteria during dry weather.

Stormwater runoff represents the (probable) major source of pathogens in the Islands Watershed, and the current level of control is inadequate for standards to be attained in at least several segments. Stormwater runoff can be categorized as: 1) point source discharges, and 2) non-point source discharges (including sheet flow and direct runoff). Many point source stormwater discharges are regulated under the Municipal Separate Storm Sewer Systems (MS4) NPDES Phase I and Phase II permitting programs, when discharged to a water of the United States. It should be pointed out that none of the communities on the Islands are required to be covered under these NPDES stormwater permitting programs. However, the communities in the Islands Watershed can choose to follow any of the program guidelines to reduce pollutants in stormwater discharges. It may not be cost effective or even possible to track and identify all wet weather sources of bacteria, therefore segments impaired during wet weather will be evaluated for stormwater BMP implementation opportunities starting with intensive application of less costly non-structural practices (such as street sweeping, and/or managerial strategies using local controls). Periodic monitoring to evaluate the effectiveness of these practices will be performed and, depending on the degree of success of the non-structural stormwater BMPs, more expensive structural controls may be necessary to meet water quality standards. This adaptive management approach to controlling stormwater contamination is the most practical and cost-effective strategy to reduce pathogen loadings as well as loadings of other storm water pollutants (e.g., nutrients and sediments) contributing to use impairment in the Islands watershed.

There are five wastewater treatment plants (WWTP) in the Islands watershed with groundwater discharges: Nantucket-Surfside; Nantucket-Siasconset; Edgartown; Oak Bluffs; and Tisbury. The NPDES permitting program regulates WWTP discharges when treated effluent is discharged to surface water. The town of Gosnold has the only NPDES surface water permit in the Islands Watershed for an ocean discharge (from the south side of Cuttyhunk Island); another NPDES (minor) permit is for the US Coast Guard facility in Chilmark, which discharges to Menemsha Creek. No active discharges are occurring at either location and both permits are likely to be terminated. Each WWTP has an effluent limit included in its NPDES or groundwater discharge permit. MassDEP and EPA have historically required wastewater treatment plants to meet criteria-based concentration effluent limits at the point of discharge and will continue to do so, consistent with the TMDL.

**Assessment:** MassDEP has addressed the implementation plan. Although EPA is not approving the implementation plan, EPA has concluded that it outlines a reasonable approach to implementation, as demonstrated by the foregoing and by the TMDL's administrative record.

## 10. Reasonable Assurances

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

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

The TMDL targets for point sources in this TMDL are not less stringent based on any assumed nonpoint source reductions in the future, so documentation of reasonable assurance in the TMDL is not a requirement. However, MassDEP addresses the concept of reasonable assurance insofar as it relates to overall TMDL implementation in Section 10.0 of the TMDL. Reasonable assurances that the TMDL will be implemented in the Islands Watershed include application and enforcement of current regulations, availability of financial incentives including low or no-interest loans to communities for wastewater treatment facilities through the State Revolving Fund (SRF), and oversight by the various local, state and federal programs for pollution control. Stormwater NPDES permit coverage is designed to address discharges from municipal-owned stormwater drainage systems. Enforcement of regulations controlling non-point discharges includes local enforcement of the state Wetlands and Rivers Protection Acts, Title 5 regulations for septic systems and various local regulations including zoning regulations. Financial incentives may include federal monies available under the CWA Section 319 NPS program and the CWA Section 604(b) and 104(b)(3) programs.

The several regulatory tools, provided to MassDEP through its authority to address point and non-point sources of pollution through the Massachusetts Clean Water Act: The MA Clean Water Act (M.G.L. Chapter 21, sections 26-53) are discussed in depth in Section 10.1. These include MassDEP's Surface Water Quality Standards (314 CMR 4.00), Ground Water Discharge Permit Program (314 CMR 5.00), River Protection Act (MGL c 258 Acts of 1996, and Regulation of Plant Nutrients (330 CMR 31.00).

**Assessment:** Because MassDEP did not increase WLAs based on expected LA reductions, reasonable assurance is not required. However, EPA acknowledges MassDEP's reasonable assurance discussion for the record.

## 11. Public Participation

*EPA policy is that there must be full and meaningful public participation in the TMDL development process. Each*

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

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

The public participation process for the Islands watershed pathogen TMDL is described in Section 11.0 of the TMDL document. MassDEP publicly announced the draft TMDL and copies were distributed to key stakeholders. Two public meetings were held at 3 p.m. and 7 p.m. at the Cape Cod Commission office (CCC), Barnstable on 7/23/2005 to present the Bacteria TMDL and to collect public comments. The public comment period began on July 23, 2005 and ended on August 26, 2005. Comments received at the public meetings and received in writing within a 30-day comment period following the public meeting were considered by MassDEP. The attendance list, public comments from the meeting, written comments received by MassDEP, and the MassDEP responses are included in Appendix A of the TMDL document. MassDEP fully addressed all comments received in Appendix A of the TMDL document.

**Assessment:** EPA concludes that MassDEP has done a sufficient job of involving the public in the development of the TMDL, provided adequate opportunities for the public to comment and has addressed the comments received as set forth in the response to comment section of the TMDL document.

## **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.*

**Assessment:** On April 22, 2020, MassDEP submitted the Final Pathogen TMDL for the Islands Watersheds (Control #254.1) and associated documents for EPA approval. The documents contained all the elements necessary to approve the TMDL

**Attachment 1:**

**Appendix D: Summary of TMDLs Developed**

**Table D1: Summary of TMDLs Developed - Final Pathogen TMDL for the Islands Watershed**

Segment ID	Name	Impaired Use	Cause	TMDL Type (Cause)
MA97-01	Nantucket Harbor	Shellfish Harvesting	Fecal Coliform	Restoration (Fecal Coliform), Preventative (Enterococci)
MA97-02	Sesachacha Pond	Shellfish Harvesting	Fecal Coliform	Restoration (Fecal Coliform), Preventative (Enterococci)
MA97-05	Chilmark Pond	Shellfish Harvesting	Fecal Coliform	Restoration (Fecal Coliform), (Enterococci)
MA97-07	Oak Bluffs Harbor	Shellfish Harvesting	Fecal Coliform	Restoration (Fecal Coliform), Preventative (Enterococci)
MA97-13	Sengekontacket Pond	Shellfish Harvesting	Fecal Coliform	Restoration (Fecal Coliform), Preventative (Enterococci)
MA97-09	Vineyard Haven Harbor	Shellfish Harvesting	Fecal Coliform	Restoration (Fecal Coliform), Preventative (Enterococci)
MA97-15	Edgartown Harbor	Shellfish Harvesting	Fecal Coliform	Restoration (Fecal Coliform), Preventative (Enterococci)
MA97-18	Tisbury Great Pond	Shellfish Harvesting	Fecal Coliform	Restoration (Fecal Coliform), Preventative (Enterococci)
MA97-21	Cuttyhunk Pond	Shellfish Harvesting	Fecal Coliform	Restoration (Fecal Coliform), Preventative (Enterococci)
MA97-26	Polpis Harbor	Shellfish Harvesting	Fecal Coliform	Restoration (Fecal Coliform), Preventative (Enterococci)

Pathogen Impaired Segments that were identified in the 2016 Integrated List of Waters (MassDEP 2020) are listed below. These segments were impaired after the public comment period for this TMDL and will be included in an addendum report.

Segment ID	Name	Impaired Use	Cause	TMDL Type
MA97-16	Katama Bay	Shellfish Harvesting	Fecal Coliform	Restoration (Fecal Coliform), Preventative (Enterococci)
MA97-29	Long Pond	Primary Contact Recreation	Fecal Coliform	Restoration (Fecal Coliform), Preventative (Enterococci)

**Attachment 2:**

**TMDL document Table 7-1 Waste Load Allocations (WLAs) and Load Allocations (LAs) As Daily Concentrations (CFU/100ml).**

Surface Water Classification	Pathogen Source	Waste Load Allocation Indicator Bacteria (cfu/100 mL) <sup>1</sup>	Load Allocation Indicator Bacteria (cfu/100 mL) <sup>1</sup>
A, B, SA, SB (prohibited)	Illicit discharges to storm drains	0	Not Applicable
	Leaking sanitary sewer lines	0	Not Applicable
	Failing septic systems	Not Applicable	0

Surface Water Classification	Pathogen Source	Waste Load Allocation Indicator Bacteria (cfu/100 mL) <sup>1</sup>	Load Allocation Indicator Bacteria (cfu/100 mL) <sup>1</sup>
<b>A</b> (Includes filtered water supply)	Any regulated discharge- including stormwater runoff <sup>4</sup> subject to Phase I or II NPDES permits, NPDES wastewater treatment plant discharges <sup>7,9</sup> .	Either;  <i>E. coli</i> ≤geometric mean <sup>5</sup> 126 colonies per 100 mL; single sample ≤235 colonies per 100 mL <sup>11</sup> ; or b) Enterococci geometric mean <sup>5</sup> ≤ 33 colonies per 100 mL and single sample ≤ 61 colonies per 100 mL <sup>11</sup>	Not Applicable
	Nonpoint source stormwater runoff <sup>4</sup>	Not Applicable	Either  <i>E. coli</i> ≤geometric mean <sup>5</sup> 126 colonies per 100 mL; single sample ≤235 colonies per 100 mL; or Enterococci geometric mean <sup>5</sup> ≤ 33 colonies per 100 mL and single sample ≤ 61 colonies per 100 mL
<b>SA</b> (Approved for shellfishing)	Any regulated discharge - including stormwater runoff <sup>4</sup> subject to Phase I or II NPDES permits, NPDES wastewater treatment plant discharges <sup>7,9</sup> .	Fecal Coliform ≤ geometric mean, MPN, of 14 organisms per 100 mL nor shall 10% of the samples be ≥28 organisms per 100 mL	Not Applicable
	Nonpoint Source Stormwater Runoff <sup>4</sup>	Not Applicable	Fecal Coliform ≤ geometric mean, MPN, of 14 organisms per 100 mL nor shall 10% of the samples be ≥28 organisms per 100 mL
<b>SA &amp; SB</b> <sup>10</sup> (Beaches <sup>8</sup> and non-designated shellfish areas)	Any regulated discharge - including stormwater runoff <sup>4</sup> subject to Phase I or II NPDES permits, NPDES wastewater treatment plant discharges <sup>7,9</sup> .	Enterococci - geometric mean <sup>5</sup> ≤ 35 colonies per 100 mL and single sample ≤ 104 colonies per 100 mL <sup>11</sup>	Not Applicable
	Nonpoint Source Stormwater Runoff <sup>4</sup>	Not Applicable	Enterococci -geometric mean <sup>5</sup> ≤ 35 colonies per 100 mL and single sample ≤ 104 colonies per 100 mL
<b>SB</b> (Approved for shellfishing w/depuration)	Any regulated discharge - including stormwater runoff <sup>4</sup> subject to Phase I or II NPDES permits, NPDES wastewater treatment plant discharges <sup>7,9</sup> .	Fecal Coliform ≤ median or geometric mean, MPN, of 88 organisms per 100 mL nor shall 10% of the samples be ≥260 organisms per 100 mL <sup>11</sup>	Not Applicable
	Nonpoint Source Stormwater Runoff <sup>4</sup>	Not Applicable	Fecal Coliform ≤ median or geometric mean, MPN, of 88 organisms per 100 mL nor shall 10% of the samples be ≥260 organisms per 100 mL

Surface Water Classification	Pathogen Source	Waste Load Allocation Indicator Bacteria (cfu/100 mL) <sup>1</sup>	Load Allocation Indicator Bacteria (cfu/100 mL) <sup>1</sup>
<b>SB/CSO</b> (segments Boston Inner Harbor(MA 71-02) <sup>12</sup> , Chelsea River (MA 71-06), Mystic River (MA 71-03) <sup>12</sup> )	Any regulated discharge - including stormwater runoff <sup>4</sup> subject to Phase I or II NPDES permits, NPDES wastewater treatment plant discharges <sup>7,9</sup> , and combined sewer overflows <sup>6</sup> .	<b>For Non-CSO Discharges:</b> Enterococci - geometric mean <sup>5</sup> <= 35 colonies per 100 mL and single sample <= 104 colonies per 100 mL <sup>11</sup> <b>For CSO Discharges:</b> CSO activations and volumes limited to those included and identified in permitted MWRA Long-Term CSO Control Plans. <sup>12</sup>	Not Applicable
	Nonpoint Source Stormwater Runoff <sup>4</sup>	Not Applicable	Enterococci -geometric mean <sup>5</sup> <= 35 colonies per 100 mL and single sample <= 104 colonies per 100 mL
<b>B/CSO Variance</b> Alewife Brook (MA 71-04), Upper Mystic (MA71-02)	Combined Sewer Overflows	CSO activations and volumes limited to those included and identified in the permitted MWRA Long-Term CSO Control Plan. <sup>12</sup>	Not applicable

<sup>1</sup> Waste Load Allocation (WLA) and Load Allocation (LA) refer to fecal coliform densities unless specified in table.

<sup>2</sup> In all samples taken during any 6 month period

<sup>3</sup> In 90% of the samples taken in any six month period;

<sup>4</sup> The expectation for WLAs and LAs for stormwater discharges is that they will be achieved through the implementation of BMPs and other controls.

<sup>5</sup> Geometric mean of the 5 most recent samples is used at bathing beaches. For all other waters and during the non-bathing season the geometric mean of all samples taken within the most recent six months, typically based on a minimum of five samples.

<sup>6</sup> Or other applicable water quality standards for CSO's

<sup>7</sup> Or shall be consistent with the Waste Water Treatment Plant (WWTP) National Pollutant Discharge Elimination System (NPDES) permit.

<sup>8</sup> Massachusetts Department of Public Health regulations (105 CMR Section 445)

<sup>9</sup> Seasonal disinfection may be allowed by the Department on a case-by-case basis.

<sup>10</sup> Segments designated as CSO have a long term control plan in place.

<sup>11</sup> Threshold for beach closure. Beaches Environmental Assessment and Coastal Health (BEACH) Act amended the Clean Water Act in 2000.

<sup>12</sup> See Second Stipulation of the United States and the Massachusetts Water Resources Authority on "Responsibility and Legal Liability for Combined Sewer Overflow Control" filed in US District Court on March 15, 2006. (MWRA 2006).

Note: This table represents waste load and load allocations based on water quality standards current as of the publication date of these TMDLs. If the pathogen criteria change in the future, MassDEP intends to revise the TMDL by addendum to reflect the revised criteria.



<b>Data for entry in EPA's National TMDL Tracking System</b>								
TMDL Name *		<b>Final Pathogen TMDL for the Islands Watershed</b>						
Number of TMDLs*		11 TMDLs, 9 protection TMDLs						
Type of TMDLs*		Pathogens (fecal coliform, enterococcus)						
Number of listed causes/parameters (from 303(d) list)		10						
Lead State		Massachusetts (MA)						
TMDL Status		Final						
<b>Individual TMDLs listed below</b>								
TMDL ID#	TMDL Segment name	TMDL Segment ID #	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_20_20_03	Nantucket Harbor	MA97-01	500 (Fecal Coliform)	500 (Fecal Coliform)	GM <=14 cfu/100mL 10% of samples NTE 28 cfu/100mL GM <=38 cfu/100mL	N		Estuarine Bioassessments (472)
R1_MA_20_20_04P			466 (Enterococcus)	None – preventative				Nitrogen, Total (772)
R1_MA_20_20_03	Sesachacha Pond	MA97-02	500 (Fecal Coliform)	500 (Fecal Coliform)	GM <=14 cfu/100mL 10% of samples NTE 28 cfu/100mL GM <=38 cfu/100mL	N		
R1_MA_20_20_04P			466 (Enterococcus)	None – preventative				
R1_MA_20_20_03	Chilmark Pond	MA97-05	500 (Fecal Coliform)	500 (Fecal Coliform)	GM <=14 cfu/100mL 10% of samples NTE 28 cfu/100mL GM <=38 cfu/100mL	N		Nutrient/Eutrophication Biological Indicators (791)
			466 (Enterococcus)	466 (Enterococcus)				

R1_MA_20 20_03	Oak Bluffs Harbor	MA97-07	500 (Fecal Coliform)	500 (Fecal Coliform)	GM <=14 cfu/100mL  10% of samples NTE 28 cfu/100mL	N		Other anthropogenic substrate alterations (829)
R1_MA_20 20_04P			466 (Enterococcus)	None – preventative	GM <=38 cfu/100mL			
R1_MA_20 20_03	Sengekontacket Pond	MA97-10	500 (Fecal Coliform)	500 (Fecal Coliform)	GM <=14 cfu/100mL  10% of samples NTE 28 cfu/100mL	N		Nutrient/ Eutrophication Biological Indicators (791)  Estuarine Bioassessments (472)  Nitrogen, Total (772)  Dissolved Oxygen (449)
R1_MA_20 20_04P			466 (Enterococcus)	None – preventative	GM <=38 cfu/100mL			
R1_MA_20 20_03	Vineyard Haven Harbor	MA97-09	500 (Fecal Coliform)	500 (Fecal Coliform)	GM <=14 cfu/100mL  10% of samples NTE 28 cfu/100mL	N		Estuarine Bioassessments (472)
R1_MA_20 20_04P			466 (Enterococcus)	None – preventative	GM <=38 cfu/100mL			
R1_MA_20 20_03	Edgartown Harbor	MA97-15	500 (Fecal Coliform)	500 (Fecal Coliform)	GM <=14 cfu/100mL  10% of samples NTE 28 cfu/100mL	N		
R1_MA_20 20_04P			466 (Enterococcus)	None – preventative	GM <=38 cfu/100mL			
R1_MA_20 20_03	Tisbury Great Pond	MA97-18	500 (Fecal Coliform)	500 (Fecal Coliform)	GM <=14 cfu/100mL  10% of samples NTE 28 cfu/100mL	N		Nutrient/ Eutrophication Biological Indicators (791)

R1_MA_20 20_04P			466 (Enterococcus)	None – preventative	GM <=38 cfu/100mL			Estuarine Bioassessments (472)  Nitrogen, Total (772)  Dissolved Oxygen (449)
R1_MA_20 20_03	Cuttyhunk Pond	MA97-21	500 (Fecal Coliform)	500 (Fecal Coliform)	GM <=14 cfu/100mL  10% of samples NTE 28 cfu/100mL	N		
R1_MA_20 20_04P			466 (Enterococcus)	None – preventative	GM <=38 cfu/100mL			
R1_MA_20 20_03	Polpis Harbor	MA97-26	500 (Fecal Coliform)	500 (Fecal Coliform)	GM <=14 cfu/100mL  10% of samples NTE 28 cfu/100mL	N		Estuarine Bioassessments (472)  Nitrogen, Total (772)
R1_MA_20 20_04P			466 (Enterococcus)	None – preventative	GM <=38 cfu/100mL			
TMDL Type			Nonpoint Sources					
Establishment Date (approval)*			May 20, 2020					
Completion (final submission) Date			April 22, 2020					
Public Notice Date			July 23, 2005					
EPA Developed			No					
Towns affected* (in alphabetical order)			Chilmark, Edgartown, Gay Head, Gosnold, Nantucket, Oak Bluffs, Tisbury, West Tisbury					