



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
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BOSTON, MASSACHUSETTS 02109-3912

September 23, 2021

Brian Kavanah, Director
Bureau of Water Quality
Maine Department of Environmental Protection
#17 State House Station
Augusta, ME 04333-0017

Re: Approval of Maine Statewide TMDL for Nonpoint Source (NPS) Pollution 2021 Addendum

Dear Mr. Kavanah:

Thank you for submitting the final *Maine Statewide Total Maximum Daily Load (TMDL) for Nonpoint Source (NPS) Pollution 2021 Addendum*. The purpose of these TMDLs for sediment, phosphorus, and nitrogen is to address the impaired aquatic life use in fourteen freshwater stream segments located in rural/suburban areas of several different watershed drainage areas across Maine, as listed and identified in Appendix 1 of the attached approval document.

The U.S. Environmental Protection Agency (EPA) hereby approves Maine's September 9, 2021 submittal of these NPS TMDLs. EPA has determined that these TMDLs meet the requirements of §303(d) of the Clean Water Act (CWA) and of EPA's implementing regulations (40 CFR Part 130). Attached is a copy of our approval documentation.

My staff and I look forward to continued cooperation with the ME DEP in exercising our shared responsibility of implementing the requirements under Section 303(d) of the CWA.

Sincerely,

/s/

Ken Moraff, Director
Water Division

Cc (electronic): Wendy Garland, ME DEP
Susanne Meidel, ME DEP
Kristen Fiendel, ME DEP

**EPA REGION 1
TOTAL MAXIMUM DAILY LOAD (TMDL) REVIEW**

DATE: September 23, 2021

TMDL: **Maine Statewide TMDL for Nonpoint Source Pollution Addendum**
Multiple counties, Maine; HUC: multiple; ME ID#: 14 different rural/suburban stream segments; 2016 303(d) listings: aquatic life use impairment

STATUS: Final

IMPAIRMENT/POLLUTANT: Aquatic life use impairment measured by Class A and B, aquatic life criteria (low dissolved oxygen, biological assessments using benthic macroinvertebrates and/or algae); primary sources are rural/suburban nonpoint source runoff and nutrient enrichment from a number of diffuse anthropogenic sources, including stormwater runoff. Area loading based TMDLs are established for **total suspended sediment (TSS)**, **total phosphorus (TP)**, and **total nitrogen (TN)**.

BACKGROUND:

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.

REVIEWER: Eric Perkins (617-918-1602), e-mail: perkins.eric@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.

Introduction

Maine's Statewide TMDL for Nonpoint Source Pollution Addendum (herein after referred to as the Addendum) presents details on TMDLs for 14 freshwater stream segments impaired for aquatic life and/or dissolved oxygen due to nutrients and sediment. The Addendum builds on the EPA-approved *Maine Statewide Total Maximum Daily Load for Nonpoint Source (NPS) Pollution* (<http://www.maine.gov/dep/water/monitoring/tmdl/tmdl2.html>) (herein after referred to as the 2016 TMDL Report), which was prepared by the Maine Department of Environmental Protection (ME DEP) and approved by the U.S. Environmental Protection Agency (USEPA) on August 9, 2016. The Addendum contains the watershed-specific information for 14 stream segments (identified in Appendix 1 of this document) impaired by nonpoint source (NPS) pollution within their watersheds. The Addendum contains the information

necessary to add NPS TMDLs under the umbrella of the existing 2016 TMDL Report and references background information and required TMDL elements from the 2016 TMDL Report.

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 Addendum provides watershed descriptions of 13 impaired segments listed in Maine's approved 2016 303(d) list as high priorities for TMDL development and one segment (Craig Brook) that ME DEP is proposing to list in the combined 2018-2020-2022 303(d) list currently under development. These are characterized as small, rural/suburban streams, and are located within several different watersheds from southern to central Maine. Individual TMDL summaries for the 14 stream segments included in the Addendum (Appendix B) detail each waterbody's name, location, assessment unit identifier, receiving waterbody, listing cause(s), segment size, TMDL priority ranking, and stream classification, which determines the applicable water quality criteria. Site-specific maps and data are provided for each impaired stream segment as well.

B. Pollutant of Concern and Pollutant Sources

The 2016 TMDL Report and the Addendum describe the primary pollutants of concern for the impaired streams: **total phosphorus, total nitrogen, sediment**. For watershed modeling purposes, all three pollutants are used as primary contributors to and surrogates for the nutrient enrichment and/or DO impairment assessed in these 14 stream segments. Maine DEP explains that disturbed and bare soil contributes sediment, phosphorus and nitrogen when washed into streams. Elevated nutrient loading and sediment accumulation contribute to excess algal growth which consumes oxygen during respiration and depresses dissolved oxygen levels. Excess sediment contribution to streams is also a significant contributor to aquatic habitat degradation (p. 10, 2016 TMDL Report).

The waterbodies addressed in Maine's 2016 TMDL Report and the Addendum are primarily impaired by NPS pollution resulting from human activities within the stream watersheds. NPS pollution results from storm events creating runoff of pollutants from roads and development and other land uses in rural/suburban areas, and "cannot be traced back to a specific source; rather it often comes from a number of diffuse sources within a watershed"

(p. 4, 2016 TMDL report). The report also explains the role of Maine's NPS Management Program that works with local stakeholders to protect and restore surface and groundwater impaired by pollutants associated with NPS runoff.

Maine's December 2015 public review draft of the 2016 TMDL Report included nine impaired streams located in towns with portions of some watershed areas subject to Maine's MS4 general permit. In response to public comments about the implications of the NPS TMDL for MS4 permittees, the overlap between NPS TMDL watersheds and municipalities with designated urbanized areas under Maine's Stormwater Program (and subject to coverage under Maine's MS4 general permit) is described and presented in maps in Appendix 4 of the 2016 TMDL report. Those nine impaired streams were removed from the final 2016 TMDL submittal. ME DEP stated in the final 2016 TMDL report that the Department intended to include those impaired waters in a future amendment of the TMDL, pending further internal discussion and outreach to affected municipalities. That additional discussion and outreach has now occurred, and those nine watersheds are among the 14 stream segments included in the Addendum. While MS4 areas are addressed differently from a regulatory perspective, the stormwater runoff from these areas behaves just the way stormwater runoff from non-regulated areas behaves – it behaves like the NPS pollution sources described above.

Assessment: EPA Region 1 concludes that the 2016 TMDL report and the Addendum meet the requirements for describing the TMDL waterbody segments, pollutant of concern, and priority ranking, and identifying and characterizing sources of impairment.

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

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

The 2016 TMDL report describes the applicable water quality standards and their underlying designated uses, criteria, and antidegradation policy (see pp. 11-13, 2016 TMDL Report). ME DEP explains that the water quality standards relevant to this statewide TMDL report and Addendum include the designated use of "habitat for fish and aquatic life" (aquatic life support) for each of the classification levels, and the relevant water quality criteria assigned to each water class. According to Maine's water classification program, freshwater rivers and streams are classified as Class AA, A, B, or C, and offer different levels of protection (see Table 1 pp.7-8, 2016 TMDL Report). In order for a waterbody to attain its classification, all applicable surface water quality standards must be met. Each classification of freshwater rivers and streams includes designated uses (Table 2 p. 12, 2016 TMDL Report); narrative and/or numeric water quality criteria for dissolved oxygen (DO), habitat, and aquatic life (all applicable to the NPS TMDLs) (Table 3 p. 13, 2016 TMDL Report); and antidegradation provisions (designed to protect and maintain all water uses and water quality). "The classes providing the most protection and least risk of impairment have the most stringent water quality criteria" (p. 12, 2016 TMDL Report). Water quality classification and water quality standards of all surface

waters of the State of Maine have been established by the Maine Legislature at Title 38 MRSA 464-468.

The applicable narrative and numeric water quality standards criteria for the Addendum submittal include dissolved oxygen numeric criteria, and narrative and numeric biological criteria for rivers and streams (see p. 13 of the 2016 TMDL report).¹ The numeric dissolved oxygen criteria for Class and A and B waters is 7 ppm; 75% saturation (see. p. 13 of the 2016 TMDL report). Of the 14 impaired stream segments submitted in the Addendum, eight Class B waters are impaired for DO alone; one Class B water is impaired for both benthic macroinvertebrates and periphyton (algae); three Class B waters are impaired for periphyton (algae) alone; one Class A water is impaired for periphyton (algae) alone; and one Class B water is impaired only for benthic macroinvertebrates.

As mentioned above, ME DEP uses three pollutants of concern (phosphorus, nitrogen, and sediments) as surrogate measures of nonpoint source pollutant impacts resulting in violation of the State's water quality criteria for streams. Since Maine does not have numeric water quality standards for the surrogate pollutants, numeric water quality targets for phosphorus, nitrogen, and sediments are established by modeling the runoff pollutant loads from five appropriate non-impaired (attainment) streams with watersheds comprised of similar land uses (see p. 4 of the Addendum and p. 14 of the 2016 TMDL report). All five of the chosen attainment streams are Class B waters.

Assessment: EPA Region 1 concludes that ME DEP has properly presented its water quality standards and has made a reasonable interpretation of the narrative water quality criteria in the standards when setting the numeric water quality targets by using streams in attainment with the appropriate water quality standards, and with similar overall characteristics for reference watersheds. EPA finds that ME DEP's selection of reference (attainment) watersheds is based on reasonable and appropriate technical criteria.

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.

ME DEP used a comparative attainment approach to establish the pollutant loading capacities for nutrients and sediment by determining the loading capacities in appropriate attainment streams,

as explained above (see p.4 of the Addendum). The following loading capacities for nutrients and sediment applicable to the impaired segments are set at numeric target levels using the annual unit area loads of each pollutant, averaged among five appropriate attainment streams located in different watershed areas of Maine: TP (0.16 kg/ha/year), TN (2.46 kg/ha/year) and TSS (65.7 kg/ha/year). "The difference between pollutant loading in impaired and attainment watersheds represents the percent reduction needed in each impaired watershed" (see p. 11 Appendix 2 of the 2016 TMDL report).

As indicated by the units above for each of these pollutant loads, the loading capacities are expressed primarily as annual unit area loads, rather than daily loads, in order to "normalize the spatial and temporal variation associated with instream nonpoint source pollutant concentrations" (see Table 4, p. 14, and pages 14-15 of the 2016 TMDL report.). These loading capacities are set to protect water quality and support uses during critical conditions, which are defined as environmental conditions that induce a stress response in aquatic life (p. 16, TMDL report). These stressful conditions may occur throughout the year, at various flows, and depend on the biological requirements of the life stage of resident aquatic organisms. Complexities of critical conditions in flowing water impaired by NPS runoff are a major consideration in expressing the TMDL in terms of annual loads. The TMDL loads can also be expressed in terms of daily maximum loads (see Table 4, 1st footnote, p. 14 of the 2016 TMDL report – this footnote also applies to the Addendum TMDL loads).

In such a comparative attainment approach, identical modeling procedures must be applied to all watersheds in the analyses (see Appendix 2 of the 2016 TMDL report). For the Addendum streams, the same modeling procedures were used as those described in the 2016 TMDL report, except that the *Model My Watershed* model (an update to MapShed) was used to estimate pollutant loadings associated with each of the five unimpaired reference streams, and with the impaired portions of the streams addressed in the Addendum (see p. 4 of the Addendum). The difference between the reference watershed average and each impaired stream is the pollutant load reduction needed to achieve water quality criteria (established to protect aquatic life use) for each of the nonpoint source pollutants of concern (see documentation in Appendix 1 of the 2016 TMDL report).

The *Model My Watershed* model is an established midrange modeling tool that uses hydrology, land cover, soils, topography, weather, pollutant discharges, and other critical environmental characteristics in order to model sediment and nutrient transport within a watershed, and to compute flow and pollutant loads.

All model simulations were conducted over a 10-15-year period (depending on weather data availability) in order to capture sufficient hydrologic and weather conditions to account for typical variations in nutrient loading conditions. These simulations include those for the attainment watersheds and the 14 impaired stream segments listed in Table 1 of the Addendum. ME DEP explains the assumptions, strength and weaknesses of the analytical process involving the modeling and comparative reference stream approach to evaluating loading capacities (pp. 15-16, and Appendix 2, 2016 TMDL report). These analytical methods are widely recognized as appropriate for NPS-impaired stream TMDL assessments.

Assessment: Since NPS runoff occurs throughout the year, with different environmental effects, at both low and high flows, critical conditions for aquatic life protection are not limited to particular flow conditions or time of year. EPA concludes that critical conditions are adequately accounted for by the range of aquatic life use impacts under varying critical conditions at

different flows. EPA Region 1 concludes that the loading capacities have been appropriately set at levels necessary to attain and maintain applicable water quality standards. The TMDLs are based on a reasonable and widely accepted approach for establishing the relationship between pollutant loading and water quality in NPS-impaired watersheds.

TMDL Time Increment/ Daily Loading

EPA's November 15, 2006, guidance entitled "Establishing TMDL 'Daily' Loads in Light of the Decision by the U.S. Court of Appeals for the D.C. Circuit in Friends of the Earth, Inc. v. EPA, et al., No.05-5015, (April 25, 2006) and Implications for NPDES Permits," recommends that TMDL submittals express allocations in terms of daily time increments. In this case, the TMDL targets are expressed primarily in terms of an annual load, but daily load increments are provided as well. The annual load provides a mechanism to address the daily and seasonal variation associated with NPS loads. EPA Region 1 concurs with expressing the TMDLs primarily as annual loads based on the reasons provided by ME DEP (critical conditions occurring at various flows and pollutant loads throughout the year).

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.

ME DEP allocates each of the loading capacities for the 14 NPS-impaired stream segments as the "load allocation," a single categorical (gross) allotment, to existing and future nonpoint sources and to natural background: TP (0.16 kg/acre/year), TN (2.46 kg/acre/year) and TSS (65.7 kg/acre/year) (see Addendum Tables 2-4 and Appendix B). Necessary load reductions for each impaired stream are provided in Appendix B of the Addendum. Due to the limited and general nature of the available information in these watersheds, ME DEP explains that "it is not feasible to separate the loading contributions from nonpoint sources, non-regulated stormwater, and natural background" (p. 19, 2016 TMDL report). ME DEP also points out that future population growth needs to be assessed and addressed on a watershed basis to account for new development, in order to ensure future attainment of TMDL targets (p. 17 of the 2016 TMDL report and Appendix B of the Addendum).

Assessment: EPA Region 1 concludes that the load allocations for TP, TN, and TSS are adequately specified in the TMDL report at levels necessary to attain and maintain water quality standards. The degrees of load reductions necessary to achieve the in-stream phosphorus, nitrogen, and sediment levels are based on estimates of current loadings, and the need to address future loadings is discussed.

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.

Some of the stream segments in the Addendum include areas that are covered by Municipal Separate Storm Sewer System (MS4) permits. In the 2016 TMDL report, ME DEP states that, "For each impaired waterbody addressed by these TMDLs, LAs (for background sources, nonpoint sources, and non-regulated stormwater) are given the same TP, TN, and TSS allocations as the WLAs for sources regulated under the Maine Pollutant Discharge Elimination System (MEPDES) because the TMDLs are expressed in terms of annual unit area loads" (p. 18, 2016 TMDL report). This TMDL approach is used because, unlike point source discharges with TMDLs expressed in lbs/day of pollutant applied at a maximum discharge flow volume, NPS discharges and overland flow of stormwater (regulated or unregulated) are very difficult to quantify, and it makes more sense to apportion pollutant loads on an easily identifiable land area basis.

Stormwater associated with construction site activities affecting over one acre, located anywhere in the State of Maine, would be subject to the MEPDES stormwater permit program (Construction General Permit), although those activities are expected to be short term and infrequent.

Assessment: EPA Region 1 concurs that the WLA component of the TMDLs is appropriately set equal to the LA component of the TMDLs because ME DEP's apportionment of pollutant loads is allocated on the same identifiable land area basis.

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.

The Maine Statewide NPS TMDLs include an implicit margin of safety (MOS) based on a conservative selection of numeric water quality targets, which were based on reference streams that attain appropriate water quality standards and criteria for aquatic life protection. There are also several conservative assumptions associated with the model, which provide a MOS to account for uncertainty, and ensure that water quality standards will be attained in the 14 stream segments identified in Table 1 of the Addendum. For example, the reference watersheds were assumed to be in attainment by a margin greater than zero (not at the border between attainment and impairment). "By setting the TMDL target equal to the reference watershed nutrient load, an

implicit margin of safety is therefore in place" (see p.2 Appendix 2 of the 2016 TMDL report).

Assessment: EPA Region 1 concludes that adequate MOS is provided. EPA believes a significant implicit MOS is provided in the conservative modeling assumptions used to establish the numeric water quality targets.

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)).

Seasonal variation for the impaired streams listed in Table 1 of the Addendum is considered in the allowable annual loads of nutrients and sediment, which are set to be protective of macroinvertebrates and other aquatic life under the influence of seasonal fluctuations in environmental conditions such as flow, rainfall, and runoff (p.17, 2016 TMDL report). ME DEP explains the various seasonal fluctuations in flow that influence the concentrations of nutrients and sediment, and how the TMDLs are protective during all seasons.

ME DEP also explains that the numeric targets are applicable year round because NPS pollution events that occur over the entire year contribute to the aquatic life impairments documented in the impaired streams, and that benefits realized from pollutant reductions in the watershed will occur in all seasons (p. 17, 2016 TMDL report).

Assessment: EPA Region 1 concludes that seasonal variation has been adequately accounted for because the TMDLs were developed to be protective year-round. Seasonal fluctuations in flow, and varying contributions of nutrients and sediment from snow and rainfall runoff are taken into account. In addition, nutrient and sediment controls are expected to be in place throughout the year so that these controls will reduce pollution whenever sources are active.

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.

ME DEP recommends stream monitoring be conducted as part of pre- and post-best management practice application assessments. As restoration plans proceed, ME DEP will check on progress towards attainment of Maine's water quality standards with both water chemistry (e.g., dissolved oxygen) and biological monitoring evaluations (page 19, 2016 TMDL report). Future monitoring will be conducted according to the Department's rotating basin sampling schedule.

Assessment: EPA Region 1 concludes that the anticipated monitoring by and in cooperation with ME DEP is sufficient to evaluate the adequacy of the TMDL and attainment of water quality standards.

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.

Each stream-specific report in the Addendum provides information on site-specific work to be done in the watershed to address the impairment issues (see the "Next Steps" sections within each stream-specific report in Appendix B of the Addendum).

Assessment: Addressed, though not required. EPA Region 1 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 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."

For each impaired waterbody addressed by these TMDLs, the LAs (for background sources, nonpoint sources, and non-regulated stormwater) are given the same TP, TN, and TSS allocations as the WLAs (for MEPDES regulated stormwater sources). The same load reductions are assigned to an acre of the watershed, whether that acre is located in an MS4 designated area, or not.

The "Next Steps" section of each watershed-specific report in Appendix B detail meaningful actions and commitments that support achievement of needed reductions.

Assessment: Reasonable assurance is not required in this case, since these TMDLs do not establish less stringent WLAs that rely on greater load reductions from nonpoint sources. Nevertheless, ME DEP has described a number of factors that provide some reasonable assurance that reductions will be achieved.

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 is described on page 9 of the TMDL report. A draft of the Addendum was posted for a 30-day public review period on ME DEP's website on August 3, 2021, and notice was emailed to the Department's public interest contact list. One comment was received and responded to, as described in Appendix A of the Addendum.

Prior to the public notice period, an informational public meeting was held via Microsoft Teams on January 20, 2021. Notification of the meeting was provided via email on December 20, 2020, to the Department's public interest contact list and potential stakeholders including municipalities, Soil and Water Conservation Districts, and many others. Nineteen stakeholders attended the meeting live and a recording of the meeting was made available for viewing by others following the meeting.

Assessment: EPA Region 1 concludes that ME DEP has done a sufficient job of involving the public during the development of the TMDLs, has provided adequate opportunities for the public to comment on the TMDLs, and has provided reasonable responses to the public comments.

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 Sept 9, 2021, EPA received ME DEP's submission of the *Maine Statewide TMDL for Nonpoint Source (NPS) pollution 2021 Addendum*. The submission package contained all the elements necessary to approve the TMDLs.

Appendix 1

Summary of impaired streams covered by the 2021 TMDL addendum (from the Maine Statewide TMDL for Nonpoint Source Pollution Addendum, page 3)

Stream	Town	Segment ID	Class	Listing Cause
Adams Brook	Berwick	ME0106000304_625R01	B	Benthic-Macroinvertebrate Bioassessments
Black Brook	Windham	ME0106000103_607R01	B	Oxygen, Dissolved
Colley Wright Brook	Windham	ME0106000103_607R03	B	Oxygen, Dissolved
Craig Brook	Littleton	ME0101000504_152R02	B	Periphyton Indicator Bioassessments (Proposed)
French Stream	Exeter	ME0102000510_224R03	B	Benthic-Macroinvertebrate Bioassessments; Periphyton Indicator Bioassessments
Halfmoon Stream	Knox, Thorndike, Unity	ME0103000309_326R03 (lower) ME0103000309_326R02 (upper)	B (lower) A (upper)	Periphyton Indicator Bioassessments (lower and upper segments)
Inkhorn Brook	Windham	ME0106000103_607R07	B	Oxygen, Dissolved
Kennedy Brook	Presque Isle	ME0101000412_140R05	B	Periphyton Indicator Bioassessments
Mosher Brook	Gorham	ME0106000103_607R08	B	Oxygen, Dissolved
No Name Brook	Lewiston, Sabattus	ME0104000210_418R02	B	Oxygen, Dissolved
Otter Brook	Windham	ME0106000103_607R09	B	Oxygen, Dissolved
Pleasant River	Windham, Gray	ME0106000103_607R12	B	Oxygen, Dissolved
Stetson Brook	Lewiston, Greene	ME0104000208_413R03	B	Oxygen, Dissolved

Data for entry in EPA's National TMDL Tracking System									
TMDL/Plan Name *			Maine Statewide TMDL for Nonpoint Source Pollution Addendum						
Number of TMDLs*			42						
Type of TMDLs*			Nutrients (Phosphorus and Nitrogen) and Sediment						
Number of listed causes/parameters (from 303(d) list)			15						
Lead State			Maine						
TMDL Status									
Individual TMDLs listed below									
Action ID#	Segment name	Segment ID #	TMDL, Protection Plan, OR Alternative*	Pollutant name(s)	Impairment PARAMETERS/Cause(s) name	Pollutant endpoint	Unlisted ?	ME DEP Point Source & ID#	Listed for anything else?
R1_ME_2021_02	Adams Brook (Berwick)	ME0106000304_625R01	TMDL	Sediment; Total Nitrogen; Total Phosphorus	Benthic Macroinvertebrates Bioassessments	65.72 kg/ha/yr Sediment; 2.46 kg/ha/yr Total Nitrogen; 0.16 kg/ha/yr Total Phosphorus	Listed	ME0106000304_625R01	N/A
R1_ME_2021_02	Black Brook	ME0106000103_607R01	TMDL	Sediment; Total Nitrogen; Total Phosphorus	Dissolved oxygen	65.72 kg/ha/yr Sediment; 2.46 kg/ha/yr Total Nitrogen; 0.16 kg/ha/yr Total Phosphorus	Listed	ME0106000103_607R01	Escherichia coli (E. coli)
R1_ME_2021_02	Colley Wright Brook (Windham)	ME0106000103_607R03	TMDL	Sediment; Total Nitrogen; Total Phosphorus	Dissolved oxygen	65.72 kg/ha/yr Sediment; 2.46 kg/ha/yr Total Nitrogen; 0.16 kg/ha/yr Total Phosphorus	Listed	ME0106000103_607R03	Escherichia coli (E. coli)
R1_ME_2021_02	Craig Brook	ME0101000504_152R02	TMDL	Sediment; Total Nitrogen; Total Phosphorus	Periphyton (Aufwuchs) Indicator Bioassessments (Proposed)	65.72 kg/ha/yr Sediment; 2.46 kg/ha/yr Total Nitrogen;	New listing	N/A	N/A

						0.16 kg/ha/yr Total Phosphorus			
R1_ME_2021_0 2	French Stream (Exeter)	ME0102000510 _224R03	TMDL	Sediment; Total Nitrogen; Total Phosphorus	Benthic- Macroinvertebrate Bioassessments; Periphyton (Aufwuchs) Indicator Bioassessments	65.72 kg/ha/yr Sediment; 2.46 kg/ha/yr Total Nitrogen; 0.16 kg/ha/yr Total Phosphorus	Listed	N/A	N/A
R1_ME_2021_0 2	Halfmoon Stream (Knox, Thorndike)	ME0103000309 _326R02	TMDL	Sediment; Total Nitrogen; Total Phosphorus	Periphyton (Aufwuchs) Indicator Bioassessments	65.72 kg/ha/yr Sediment; 2.46 kg/ha/yr Total Nitrogen; 0.16 kg/ha/yr Total Phosphorus	Listed	N/A	N/A
R1_ME_2021_0 2	Halfmoon Stream (Thorndike, Unity)	ME0103000309 _326R03	TMDL	Sediment; Total Nitrogen; Total Phosphorus	Periphyton (Aufwuchs) Indicator Bioassessments	65.72 kg/ha/yr Sediment; 2.46 kg/ha/yr Total Nitrogen; 0.16 kg/ha/yr Total Phosphorus	Listed	N/A	N/A
R1_ME_2021_0 2	Inkhorn Brook (Westbrook)	ME0106000103 _607R07	TMDL	Sediment; Total Nitrogen; Total Phosphorus	Dissolved oxygen	65.72 kg/ha/yr Sediment; 2.46 kg/ha/yr Total Nitrogen; 0.16 kg/ha/yr Total Phosphorus	Listed	ME01060001 03_607R07	Escherichia coli (E. coli)
R1_ME_2021_0 2	Kennedy Brook (Presque Isle)	ME0101000412 _140R05	TMDL	Sediment; Total Nitrogen; Total Phosphorus	Periphyton (Aufwuchs) Indicator Bioassessments	65.72 kg/ha/yr Sediment; 2.46 kg/ha/yr Total Nitrogen;	Listed	N/A	N/A

						0.16 kg/ha/yr Total Phosphorus			
R1_ME_2021_0 2	Mosher Brook (Gorham)	ME0106000103 _607R08	TMDL	Sediment; Total Nitrogen; Total Phosphorus	Dissolved oxygen	65.72 kg/ha/yr Sediment; 2.46 kg/ha/yr Total Nitrogen; 0.16 kg/ha/yr Total Phosphorus	Listed	ME01060001 03_607R08	Escherichia coli (E. coli)
R1_ME_2021_0 2	No Name Brook (Lewiston)	ME0104000210 _418R02	TMDL	Sediment; Total Nitrogen; Total Phosphorus	Dissolved oxygen	65.72 kg/ha/yr Sediment; 2.46 kg/ha/yr Total Nitrogen; 0.16 kg/ha/yr Total Phosphorus	Listed	ME01040002 10_418R02	Escherichia coli (E. coli)
R1_ME_2021_0 2	Otter Brook (Windham)	ME0106000103 _607R09	TMDL	Sediment; Total Nitrogen; Total Phosphorus	Dissolved oxygen	65.72 kg/ha/yr Sediment; 2.46 kg/ha/yr Total Nitrogen; 0.16 kg/ha/yr Total Phosphorus	Listed	ME01060001 03_607R09	Escherichia coli (E. coli)
R1_ME_2021_0 2	Pleasant River (Windham)	ME0106000103 _607R12	TMDL	Sediment; Total Nitrogen; Total Phosphorus	Dissolved oxygen	65.72 kg/ha/yr Sediment; 2.46 kg/ha/yr Total Nitrogen; 0.16 kg/ha/yr Total Phosphorus	Listed	ME01060001 03_607R12	Escherichia coli (E. coli)

R1_ME_2021_02	Stetson Brook (Lewiston)	ME0104000208_413R03	TMDL	Sediment; Total Nitrogen; Total Phosphorus	Dissolved oxygen	65.72 kg/ha/yr Sediment; 2.46 kg/ha/yr Total Nitrogen; 0.16 kg/ha/yr Total Phosphorus	Listed	ME0104000208_413R03	Escherichia coli (E. coli)
TMDL Type		NPS							
Establishment Date (approval)*		Sept 23, 2021							
Completion (final submission) Date		Sep 7, 2021							
Public Notice Date		8/3/2021							
EPA Developed		No							
Towns affected* (in alphabetical order)		Berwick, Exeter, Gorham, Gray, Greene, Knox, Lewiston, Littleton, Presque Isle, Sabattus, Thorndike, Unity, Windham							

*Abbreviations:

TMDL = TMDL

Protection Plan = PP

Alternative Restoration Plan = ARP