

# ADAPTIVE MANAGEMENT FRAMEWORK PROPOSAL

*December 2024*

## **Town of Epping, New Hampshire**

### **INTRODUCTION**

The United States Environmental Protection Agency (USEPA) Region 1 issued a Great Bay Total Nitrogen General Permit for Wastewater Facilities in New Hampshire (National Pollutant Discharge Elimination System [NPDES] General Permit: NHG58A000) for 13 eligible wastewater treatment facilities (WWTFs). The General Permit was issued on November 24, 2020 and became effective beginning on February 1, 2021.

The General Permit establishes total nitrogen effluent limitations, monitoring requirements, reporting requirements, and standard conditions. The discharge of all pollutants other than nitrogen from these WWTFs is authorized by each WWTF's respective individual NPDES permit. USEPA developed the General Permit, as part of an Adaptive Management Framework (AMF), to comprehensively regulate nitrogen loads from the 13 WWTFs on a watershed-wide scale. The General Permit also incorporates an innovative and adaptive approach to achieve reductions in total nitrogen loads to the Great Bay estuary through a combination of mandatory load limits at the WWTFs and voluntary nonpoint source nitrogen reductions.

The General Permit is only one aspect of the AMF; other elements include ambient monitoring, pollution tracking, reduction planning, and review. Implementing an adaptive management approach would include collaboration among USEPA, the State of New Hampshire, and public and private stakeholders. This needed collaboration entails participating in the following:

- Monitoring ambient water quality in the Great Bay
- Tracking loads of total nitrogen
- Planning for overall source reductions
- Evaluating a load-based threshold, 0.32 milligrams per liter (mg/L) instream total nitrogen criterion, or other threshold for demonstrating attainment of water quality standards
- Establishing a timeline for completing a total nitrogen total maximum daily load (TMDL) for the Great Bay

This detailed proposal demonstrates the Town of Epping's (the Town) election to opt into the voluntary AMF option.

### **PROPOSAL**

This AMF Proposal describes the steps, activities, and measures that the Town will take to improve water quality from nonpoint sources into Great Bay from the town during this General Permit term. As outlined in the General Permit, this AMF Proposal is broken up into five areas (A through E):

- A. Ambient Water Quality Monitoring
- B. Track Reductions and Additions of Total Nitrogen
- C. Overall Source Reduction
- D. Load Based Threshold

#### E. Completion of a Total Nitrogen TMDL

The Town's proposed approach for each of these categories is outlined in the sections below. This proposal will be a living document that will be reviewed, updated, and modified (as needed) annually to reflect the current understanding of the Great Bay and the progress made by the Town and other relevant parties. The updates and modifications will be informed based upon the outcomes from implementing the efforts outlined in this proposal and collaborating with MAAM, the other seacoast communities, and key stakeholders (PREP, NHDES, and USEPA). The Town believes that the collaborative approach will provide the most efficient and streamlined use of limited resources (time and money) and avoid unnecessary duplication of efforts.

#### A. AMBIENT WATER QUALITY MONITORING IN GREAT BAY

Part 3-1.a. of the General Permit recommends an outline of an approach to monitor the ambient water quality in the Great Bay estuary to determine project trends.

Under this AMF Proposal, the Town will contribute funds to MAAM, who is working closely with PREP, to support PREP's annual and long-term monitoring initiatives. The Town will review and provide comments on PREP's ambient water quality monitoring program, through participation in MAAM, to ensure that the monitoring program meets regulatory compliance needs of the Town. The Town will work with PREP to gather a better understanding of the direct outcomes from the monitoring program including annual raw data output, annual summary reports, and long-term trend reports.

#### B. TRACK REDUCTIONS AND ADDITIONS OF TOTAL NITROGEN

Part 3-1.b. of the General Permit recommends an outline of the method(s) to track reductions and additions of the total nitrogen over the course of the permit.

The Town proposed to track reductions and additions of total nitrogen using the Pollutant Tracking and Accounting Program (PTAP). The Town will work with NHDES and the University of New Hampshire (UNH) to input both structural and nonstructural measures. The Town anticipates tracking the efforts outlined in **Section C** below.

#### C. OVERALL SOURCE REDUCTION

Part 3-1.c. of the General Permit recommends an outline or plan for overall source reductions of total nitrogen over the course of the General Permit.

Under this AMF Proposal, the Town will implement point and nonpoint source reduction strategies to reduce total nitrogen. Annually, the Town will review the strategies implemented and update the list to reflect progress.

#### **Point Source Reduction Strategies**

A variety of measures to reduce wastewater point source nitrogen will be evaluated as part of this AMF Proposal. The strategies evaluated and a description of how the Town will implement these strategies is summarized in **Table 1**.

*Table 1. Proposed Point Source Reduction Strategies*

STRATEGY	DESCRIPTION OF PROPOSAL
WWTF Upgrade	The Town is issuing a warrant article to raise and appropriate the sum of \$20,000,000.00 (gross budget) for the purpose of design and construction of WWTF upgrades, that will improve hydraulic capacity and provide redundancy.
WWTF Nitrogen Reduction	The Town will continue to operate the WWTF to achieve the total nitrogen limits established in the GBTNGP.
Inflow and Infiltration	<p>The Town received a \$100,000 loan from NHDES to perform an Inflow and Infiltration (I&amp;I) study for the Town to identify high priority areas to reduce I&amp;I from the sanitary sewer system. This funding needs to be approved by voters in March 2025. If approved, this loan will allow the Town to target future removal of high I&amp;I areas to preserve flow capacity at the plant which will ultimately reduce total nitrogen loads from the WWTF.</p> <p>The Town plans to line a section of sewer pipe with known I&amp;I issues exist (\$50,000 allocated).</p>

### **Nonpoint Source Reduction Strategies**

A variety of measure to reduce nonpoint source (stormwater and groundwater) nitrogen will be evaluated as part of this AMF Proposal. The strategies evaluated, the targeted land use/source, and a description of how the Town will implement these strategies is summarized in **Table 2**.

*Table 2. Proposed Non-point Source Reduction Strategies*

STRATEGY	TARGET LAND USE/SOURCE	DESCRIPTION OF PROPOSAL
Fertilizer and Turf Management Program	Pervious Developed Land	The Town will develop and implement a fertilizer outreach and education program targeted at reducing the application of fertilizer and using turf management best practices. The Town will apply this outreach program to both Town staff and departments as well as to the public.
Post-Construction Regulations	Impervious	The Town will review current Site Plan and Subdivision regulations and make recommendations to incorporate post-construction stormwater controls optimized for the removal of nitrogen. The Town will bring these recommendations to the Planning Board and Select Board for consideration.
Land Use Regulation Review	Impervious	The Town will review current land use regulations to determine barriers to low impact develop and green infrastructure best management practices.
Identify and Quantify Stormwater Best Management Practices on Private Property	Developed Pervious Impervious	<p>The Town will make recommendations to Site Plan and Subdivision regulations to require private property owners to enter proposed projects into the PTAP database to quantify total nitrogen impacts.</p> <p>The Town will identify and locate the stormwater management practices already installed on existing private properties in the Town. The Town will use this information to quantify the estimated pollutant load reduction, using PTAP, for the identified stormwater management practices.</p>
Pet Waste Station Program	Pervious Developed Land Impervious	The Town will evaluate potential locations for installation of additional pet waste stations and prepare public education and outreach materials to be handed out to dog owners when applying for a dog license in Spring.
Infrastructure Maintenance Program	Impervious	The Town will develop and implement a program detailing the activities and procedures to maintain storm drainage infrastructure in a timely manner. The program may include

STRATEGY	TARGET LAND USE/SOURCE	DESCRIPTION OF PROPOSAL
		routine inspections, cleaning and maintenance of catch basins to maintain 50% free-storage capacity in the catch basin sump.
Organic Waste and Leaf Litter Collection Program	Developed Pervious Impervious	<p>The Town will develop an organic waste and leaf litter program aimed at:</p> <ul style="list-style-type: none"> <li>• Explore methods to effectively and efficiently collect and dispose of leaves on Town owned properties</li> <li>• Provide public education and outreach to homeowners encouraging them not to deposit leaves into wetlands and waterbodies and bring them to the transfer station. Additionally, encourage residents to remove them from street/catch basins.</li> </ul>
Enhanced Street/Pavement Cleaning Program	Impervious	The Town will increase street sweeping from 1 time per year to 2 times per year and explore areas where targeted street sweeping can be conducted.
Septic System Program	Septic	<p>The Town will consider evaluating a potential septic system retrofit program for septic systems within proximity of waterbodies. In doing so, the Town will collect research materials to gain a better understanding of how septic system retrofits.</p> <p>The Town has a warrant article out that will increase hydraulic capacity at the WWTF, which would allow for existing development served by septic systems to connect to the WWTF. If the warrant article passes and the upgrades implemented, the Town will quantify the load removed from septic systems and transferred to the WWTF in PTAP.</p>
Well Head Protection	Developed Pervious Impervious	The Town will implement measures to reduce salt use within the Epping Crossing Well Head Protection Area. The measures will include engagement and education of stakeholders including owners of large and small parking lots, consider the use of brine to replace rock salt, when possible, monitor conductivity levels in the well head protection area, and further characterize stormwater management systems on private properties.
Stormwater Structural BMP Construction	Impervious	<p>The Town will prepare designs to provide drainage improvements of existing impervious area at the following sites:</p> <ul style="list-style-type: none"> <li>• Hickory Hills</li> <li>• Outfall on Main Street across from Town Hall</li> <li>• Safety facility</li> </ul>
Evaluate Town-Owned and Right-of-Way Properties for Stormwater Structural BMP Sites	Impervious	The Town will assess Town owned properties to identify conceptual stormwater BMP locations and designs for retrofitting existing impervious cover.
Atmospheric Deposition	Pervious Impervious	<p>The Town will work with USEPA and NHDES to understand how levels of nitrogen from atmospheric deposition are changing over time.</p> <p>The Town will account for changes in the atmospheric load as part of the tracking and accounting framework on an annual basis (or as data becomes available).</p>

#### **D. LOAD-BASED THRESHOLD**

Part 3-1.d. of the General Permit recommends an inclusive and transparent process for comprehensively evaluating any significant issues regarding the science and methods relating to the permit, including the choice of a load-based threshold of 100 kilograms per hectare per year ( $\text{kg ha}^{-1} \text{ yr}^{-1}$ ) versus any other proposed threshold, including a concentration-based threshold of 0.32 mg/L.

The Town will participate in meetings to discuss the development of a load-based threshold. The Town will review monitoring initiatives; implement nonpoint and point source projects targeted at reducing total nitrogen in the Great Bay; track and account implementation efforts; and revise this AMF Plan to ensure that the efforts the Town is taking will have the greatest benefit to water quality. The Town is through its participation in MAAM, will work with USEPA, NHDES, PREP, and watershed stakeholders to ensure that the science and recommended next steps for continued improvement in water quality of the Great Bay and its tributaries are understood.

#### **E. COMPLETION OF TMDL**

Part 3-1.c. of the General Permit recommends a proposed timeline for completing a TMDL for total nitrogen in Great Bay and for submitting it to USEPA for review and approval.

The Town will participate in meetings to discuss the completion of a TMDL. The Town will review monitoring initiatives; implement nonpoint and point source projects targeted at reducing total nitrogen in the Great Bay; track and account implementation efforts; and revise this AMF Plan to ensure that the efforts the Town is taking will have the greatest benefit to water quality. The Town is through its participation in MAAM, will work with USEPA, NHDES, PREP, and watershed stakeholders to ensure that the science and recommended next steps for continued improvement in water quality of the Great Bay and its tributaries are understood.