

C. OPERATION AND MAINTENANCE OF THE TREATMENT AND CONTROL FACILITIES

1. Adaptation Planning

- a. *Adaptation Plan.* Within the timeframes described below, the Permittee shall develop an Adaptation Plan for the Wastewater Treatment System (WWTS)¹ and/or sewer system² that they own and operate. Additional information on the procedures and resources to aid permittees in development of the Adaptation Plan is provided on EPA’s Region 1 NPDES website at <https://www.epa.gov/npdes-permits/npdes-water-permit-program-new-england>. The Adaptation Plan shall contain sufficient detail for EPA to evaluate the analyses.

- (1) *Component 1: Identification of Vulnerable Critical Assets.* Within 24 months of the effective date of the permit, the Permittee shall develop and sign, consistent with the signatory requirements in Part II.D.2 of this Permit, an identification of critical assets³ and related operations⁴ within the WWTS and/or sewer system which they own and operate, as applicable, that are most vulnerable due to major storm and flood events⁵ under baseline conditions⁶ and under future conditions.⁷

¹ “Wastewater Treatment System” or “WWTS” means any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It does not include sewers, pipes and other conveyances to the wastewater treatment facility.

² “Sewer System” refers to the sewers, pump stations, manholes and other infrastructure use to convey sewage to the wastewater treatment facility from homes or other sources.

³ A “critical asset” is an asset necessary to ensure the safe and continued operation of the WWTS or the sewer system and ensure the forward flow and treatment of wastewater in accordance with the limits set forth in this permit.

⁴ “Asset related operations” are elements of an asset that enable that asset to function. For example, pumps and power supply enable the operation of a pump station.

⁵ “Major storm and flood events” refer to instances resulting from major storms such as hurricanes, extreme/heavy precipitation events, and pluvial, fluvial, and flash flood events such as high-water events, storm surge, and high-tide flooding, including flooding caused by sea level change. “Extreme/heavy precipitation” refers to instances during which the amount of rain or snow experienced in a location substantially exceeds what is normal according to location and season.

⁶ “Baseline conditions” refers to the 100-year flood based on historical records.

⁷ “Future conditions” refers to projected flood elevations using one of two approaches: a) Climate Informed Science Approach (CISA): The elevation and flood hazard area that result from using the best-available, actionable hydrologic and hydraulic data and methods that integrate current and future changes in flooding based on climate science. These shall include both short term (10-25 years forward-looking) and long term (25-70 years forward-looking) relative to the baseline conditions and must include projections of flooding due to major storm and flood events using federal, state and local data, where available; b) Freeboard Value and 500-year floodplain Approach:

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This information shall be provided to EPA upon request. For these critical assets and related operations, the Permittee shall assess the ability of each to function properly in the event of impacts⁸ from major storm and flood events in terms of effluent flow (e.g., bypass, upset or failure), sewer flow (e.g., overflow, inflow and infiltration), and discharges of pollutants (e.g., effluent limit exceedance).

- (2) *Component 2: Adaptive Measures Assessment.*⁹ Within 36 months of the effective date of the permit, the Permittee shall develop and sign, consistent with the signatory requirements in Part II.D.2 of this Permit, an assessment of adaptive measures,¹⁰ and/or, if appropriate, the combinations of adaptive measures that minimize the impact of future conditions on the critical assets and related operations of the WWTS and/or sewer system(s). This information shall be provided to EPA upon request. The Permittee shall identify the critical assets and related operations at the highest risk of not functioning properly under such conditions and, for those, select the most effective adaptation measures that will ensure proper operation of the highest risk critical assets and the system as a whole.
- (3) *Component 3: Implementation and Maintenance Schedule.* Within 48 months of the effective date of the permit, the Permittee shall submit to EPA a proposed schedule for implementation and maintenance of adaptive measures. The Implementation and Maintenance Schedule shall summarize the general types of significant risks¹¹ identified in Component 1, including the methodology and data

The flood elevations that result from adding an additional 2 feet to the 100-year flood elevation for non-critical actions and by adding an additional 3 feet to the 100-year flood elevation for critical actions compared to the flood elevations that result from 500-year flood (the 0.2% -annual-chance flood) and selecting the higher of the two flood elevations.

⁸ “Impacts” refers to a strong effect on an asset and/or asset-related operation that may include destruction, damage or ineffective operation of the asset and/or asset operation. Impacts may be economic, environmental, or public health related.

⁹ The Permittee may complete this component using EPA’s Climate Resilience Evaluation and Awareness Tool (CREAT) Risk Assessment Application for Water Utilities, found on EPA’s website Creating Resilient Water Utilities (CRWU) (<https://www.epa.gov/crwu>), or methodology that provides comparable analysis.

¹⁰ “Adaptive Measures” refers to physical infrastructure or actions and strategies that a utility can use to protect their assets and mitigate the impacts of threats. They may include but are not limited to: building or modifying infrastructure, utilization of models (including but not limited to: flood, sea-level rise and storm surge, sewer/collection system, system performance), monitoring and inspecting (including but not limited to: flood control, infrastructure, treatment) and repair/retrofit.

¹¹ In light of security concerns posed by the public release of information regarding vulnerabilities to wastewater infrastructure, the Permittee shall provide information only at a level of generality that indicates the overall nature of the vulnerability but omitting specific information regarding such vulnerability that could pose a security risk.

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used to derive future conditions¹² used in the analysis and describe the adaptive measures taken (or planned) to minimize those risks from the impact of major storm and flood events for each of the critical assets and related operations of the WWTS and the sewer system and how those adaptive measures will be maintained, including the rationale for either implementing or not implementing each adaptive measure that was assessed and an evaluation of how each adaptive measure taken (or planned) will be funded.

- i. *Credit for Prior Assessment(s) Completed by Permittee.* If the Permittee has undertaken assessment(s) that were completed within 5 years of the effective date of this permit, or is [are] currently undertaking an assessment that address some or all of the Adaptation Plan components, such prior assessment(s) undertaken by the Permittee be used (as long as the reporting time frames (set forth in Part I.C.1.a) and the signatory requirements (set forth in Part II.D.2 of this permit) are met) in satisfaction of some or all of these components, as long as the Permittee explains how its prior assessments specifically meet the requirements set forth in this permit and how the Permittee address any permit requirements that have not been addressed in its prior or ongoing assessment(s).
- ii. *Adaptation Plan Progress Report.* The Permittee shall submit an Adaptation Plan Progress Report on the Adaptation Plan for the prior calendar year that documents progress made toward completing the Adaptation Plan and, following its completion, any progress made toward implementation of adaptive measures, and any changes to the WWTF or other assets that may impact the current risk assessment. The first Adaptation Progress Report is due the first March 31 following completion of the Identification of Critical Vulnerable Assets (*Component I*) and shall be included with the annual report required in Part I.C.3 below each year thereafter. The Adaptation Plan shall be revised if on- or off-site structures are added, removed, or otherwise significantly changed in any way that will impact the vulnerability of the WWTS or sewer system.

2. Annual Reporting Requirement

¹² See footnote 8.

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The Permittee shall submit a summary report of activities related to the implementation of its O&M Plans during the previous calendar year. The report shall be submitted to EPA and the State annually by March 31. The first annual report is due the first March 31 following submittal of the Sewer System O&M Plan required by Part I.C.2.e.(2) of this permit. The summary report shall, at a minimum, include:

- g. The Adaptation Plan Progress Report described in Part I.C.1.c above.

D. REPORTING REQUIREMENTS

Unless otherwise specified in this permit, the Permittee shall submit reports, requests, and information and provide notices in the manner described in this section.

1. Submittal of Reports as NetDMR Attachments

Unless otherwise specified in this permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. See Part I.I.7. for more information on State reporting. Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the report due date specified in this permit.

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