AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended, 33 U.S.C. §§ 1251 et seq. (the "CWA"),

South Essex Sewerage District

is authorized to discharge from the facility located at

South Essex Wastewater Treatment Facility
50 Fort Avenue
Salem, MA 01970

to receiving water named

Salem Sound (Segment MA95-56)
North Coastal Watershed

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

The municipalities of Beverly, Danvers, Marblehead, Peabody and Salem are Co-permittees for Part I.B, Unauthorized Discharges; Part I.C, Operation and Maintenance of the Treatment and Control Facilities (which include conditions regarding the operation and maintenance of the collection systems owned and operated by the Towns); and Part I.D, Alternate Power Source. The permit number assigned to the Municipalities for purposes of reporting (using NetDMR through EPA's Central Data Exchange, as specified in Part I.H below) in accordance with the requirements in Parts I.B, I.C, and I.D of this permit are as follows: Beverly, Massachusetts: **MAC010501**; Danvers, Massachusetts: **MAC020501**; Marblehead, Massachusetts: **MAC030501**; Peabody, Massachusetts: **MAC040501**; and Salem, Massachusetts, **MAC050501**.

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the terms and conditions of Part I.B, Part I.C and Part I.D of this permit. The Permittee and each Co-permittee are severally liable under Part I.B, Part I.C and Part I.D for their own activities and required reporting with respect to the portions of the collection system that they own or operate. They are not liable for violations of Part I.B, Part I.C and Part I.D committed by others relative to the portions of the collection system owned and operated by others. Nor are they responsible for any reporting that is required of other Permittees under Part I.B, Part I.C and Part I.D. The responsible departments for the Co-permittees are:

City of Beverly
c/o City Engineer
Beverly City Hall
191 Cabot Street
Beverly, MA 01915

Town of Danvers
c/o Town Engineer
Public Works Eng. Div.
1 Burroughs Street
Danvers, MA 01923

Town of Marblehead
c/o Superintendent
Water/Sewer Department
P.O. Box 1108
Marblehead, MA 01945

City of Peabody
c/o Mayor
24 Lowell Street
Peabody, MA 01960

City of Salem
c/o City Engineer
120 Washington Street, 4th Fl
Salem, MA 01970

This permit modification shall become effective on the first day of the calendar month immediately following 60 days after signature. [1]

This modified permit and authorization to discharge expires at midnight, June 30, 2031.

This modified permit is issued pursuant to 40 CFR § 124.5, and revises and supersedes the relevant portions of the permit that was issued on December 22, 2025. The modified portions of the permit are in **bold red** font.

This permit consists of **Part I** including the cover page(s), **Attachment A** (Marine Acute Toxicity Test Procedure and Protocol, July 2012), **Attachment B** (Reassessment of Technically Based Industrial Discharge Limits), **Attachment C** (NPDES Permit Requirement for Industrial Pretreatment Annual Report); **Attachment D** (PFAS Analyte List) and **Part II (**NPDES Part II Standard Conditions, April 2018).

Signed this day of

_____
Ken Moraff, Director
Water Division
Environmental Protection Agency
Region 1
Boston, MA

[1] Pursuant to 40 Code of Federal Regulations (CFR) § 124.15(b)(3), if no comments requesting a change to the Draft Permit Modification are received, the permit modification will become effective upon the date of signature. Procedures for appealing EPA's Final Permit decision may be found at 40 CFR § 124.19.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated effluent through Outfall Serial Number 001 to Salem Sound. The discharge shall be limited and monitored as specified below; the receiving water and the influent shall be monitored as specified below.

Effluent Characteristic	Effluent Limitation			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Fecal Coliform[7,8,9]	88 organisms/ 100 mL	---	**10%** Report organisms/ 100 mL	2/Day	Grab
Enterococci[7,8,9]	35 cfu/100 mL	---	**10%** ~~276~~ **Report** cfu/100 mL	2/Day	Grab
Total Kjeldahl Nitrogen[10] ~~– April 1 – October 31~~ ~~– November 1 – March 31~~	~~Report mg/L~~ Report mg/L	---	~~Report mg/L~~ Report mg/L	~~1/Week~~ **1/Month**	~~Composite~~ Composite
Nitrate + Nitrite[10] ~~– April 1 – October 31~~ ~~– November 1 – March 31~~	~~Report mg/L~~ Report mg/L	---	~~Report mg/L~~ Report mg/L	~~1/Week~~ **1/Month**	~~Composite~~ Composite

Footnotes:

~~7. The Permittee shall report the percent of maximum daily values that exceeded an MPN of 260 organisms per 100 ml and submit the sample results as an attachment with the discharge monitoring report. No more than 10% of the samples shall exceed 260 organisms/100 ml.~~

For *Fecal Coliform*, no more than 10% of the samples shall exceed 260 organisms per 100 mL. The Permittee shall report the percentage of the samples in the month that were above 260 organisms per 100 mL (for compliance with the 10% limit) and shall report the maximum measured value during the month (as a reporting requirement).

For *Enterococci*, no more than 10% of all samples shall exceed 130 organisms per 100 mL. The Permittee shall report the percentage of the total number samples in the month that that were above 130 organisms per 100 mL (for compliance with the 10% limit) and shall report the maximum measured value during the month (as a reporting requirement).

8. Permittee shall minimize the use of chlorine while maintaining adequate bacterial control. Monitoring for total residual chlorine (TRC) is only required for discharges which have been previously chlorinated or which contain residual chlorine. If chlorine is not utilized during a particular monitoring period, TRC monitoring is not necessary and the Permittee may enter "NODI" code 9 (i.e., conditional monitoring) in the relevant discharge monitoring report.

The Permittee may simulate the chlorine contact time in the outfall pipe prior to discharge into Salem Sound by holding effluent samples in a dark environment before measuring TRC, enterococci and fecal coliform. The holding time shall be calculated based on effluent flow to determine the amount of time required for wastewater to pass between the point of collection and the point of discharge. The Permittee shall keep records of the calculated holding time of each sample.

The following formula is to be used to calculate the holding time:

Contact time (in minutes) = [1.495 MG (volume of the outfall pipe)] / [effluent flow at time of sample collection (in MGD)] * 1440 minutes/day

The effluent flow at the time of sample collection shall be recorded and a summary of these flows, along with the calculation used in the derivation of the holding time, shall be included as an electronic attachment to the discharge monitoring report (DMR) for each month in accordance with Reporting Requirements in Part I.I.2.

Chlorination and dechlorination systems shall include an alarm system for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine

dosing system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection, or interruptions or malfunctions of the dechlorination system that may have resulted in excessive levels of chlorine in the final effluent shall be reported with the monthly DMRs. The report shall include the date and time of the interruption or malfunction, the nature of the problem, and the estimated amount of time that the reduced levels of chlorine or dechlorination chemicals occurred.

See 2025 Final Permit for other relevant footnotes.

…

G. SPECIAL CONDITIONS

1. Ambient Monitoring

The Permittee shall conduct periodic~~, annual~~ ambient water quality monitoring at one station in Salem Sound **every other year beginning the first April following approval of the QAPP required in Part I.G.1.b., below. After completing three full years of sampling, the Permittee may submit a written request to reduce or remove this requirement if it can demonstrate that additional sampling is unnecessary. If EPA concurs with the request, EPA will notify the Permittee in writing and will make such notification available to the public. Monitoring consistent with the permit shall continue until the Permittee receives notification from EPA.**

a. Ambient Monitoring Plan

Within 180 days of the effective date of the Permit, the Permittee shall submit an Ambient Monitoring Plan to EPA and MassDEP. The plan shall consist of the following elements, at a minimum:

(1) Sampling Location

Ambient monitoring shall be conducted at one sampling location. The station is located at latitude 42.51919° N, longitude 70.8065° W, which is located in Salem Sound and adjacent to Massachusetts Bay.

(2) Sampling Dates

Sampling shall be conducted **four times per year every other year beginning the first April following approval of the QAPP (Part I.G.1.b.)**, according to Table 1 below. These dates are consistent with other ambient sampling efforts in Massachusetts Bay.

Table 1: Sampling Dates

When	Target Week	Purpose
Early April	15	Later winter/spring bloom nutrients
Mid-May	20	Nutrient/water column conditions at the end of winter/spring
~~Mid-June~~	~~25~~	~~Early Summer Stratification and nutrients~~
Mid-July	30	Mid-summer stratification and nutrients
~~Mid-August~~	~~34~~	~~Mid-summer stratification and nutrients~~
September	38	Nutrients, etc. prior to overturn

(3) Monitoring Parameters

Ambient monitoring shall include monitoring of the parameters in Table 2.

Table 2: Monitoring Parameters

ANALYTE	DEPTH	PARAMETER
Hydro profile	Downcast data continuous, with upcast data at ~~any sampled depth~~ **surface**	Temperature pH Salinity Dissolved Oxygen Chlorophyll fluorescence Turbidity (or Transmissometry) PAR/Irradiance Depth of sensors
Water Chemistry	~~Three depths. Surface chlorophyll maximum and bottom.~~ **Surface**	Ammonium Nitrate Nitrite Total dissolved nitrogen Particulate nitrogen Phosphate Total dissolved phosphorus Particulate phosphorus Silicate Particulate organic carbon Chlorophyll-a
Phytoplankton	~~Near surface and chlorophyll maximum~~ **Surface**	Identification Enumeration
~~Zooplankton~~	~~Net Tow~~	~~Identification~~ ~~Enumeration~~

b. Quality Assurance Project Plan (QAPP)

Within 90 days from the from the approval of the Ambient Monitoring Plan, the Permittee shall prepare and submit a Quality Assurance Project Plan (QAPP) for the implementing the Ambient Monitoring Plan. The QAPP shall be submitted for MassDEP review and approval.

Additional information on the MassDEP QAPP Submittal and Approval Process can be found at: https://www.mass.gov/doc/qapp-submittal-and-approval-process/download.

No sampling shall take place until the QAPP has been approved. The Permittee shall begin sampling in the first April following the approval of the QAPP.

c. Annual Summary Report

The results of all monitoring required by the Ambient Monitoring Plan shall be reported to EPA and MassDEP by November 15th of the year following monitoring (e.g. An annual report for 2028 monitoring results is due by November 15, 2029). The recommended content, which is consistent with MassDEP external data submittal requirements, is as follows:

(1) Cover letter. Provide a brief cover letter explaining what data are being submitted, project contact person(s), and a statement that the approved project QAPP was followed in generating the data.
(2) Cover page. include project name/title, lead organization, author(s) and report date.
(3) Introduction. Provide background information related to the monitoring, such as funding source(s), water quality-related issues of concern and objectives of the monitoring.
(4) Methods Used. List all field and lab methods that were employed during the project. Reference Standard Methods, EPA, group SOPs, etc. as appropriate.
(5) Locations Sampled. Provide detailed sampling station maps/tables showing or describing precise locations where samples were taken. If possible, include precise latitude-longitude coordinates.
(6) Results. Provide tabular field measurement data and laboratory data, including that for quality control samples, in a clear and organized format. Include raw laboratory data reports, completed field sheets and completed chain-of-custody forms in appendices. Also provide important metadata, such as sample collection dates/times, analysis dates/times, exact station location descriptions, sample ID numbers, analytical method used with method detection limits (MDLs) and reporting detection limits (RDLs), weather, field observations and measurement units.
(7) Quality assurance, quality control and data validation (in main report or in an appendix). Discuss the extent to which the QAPP was implemented (e.g., were there any deviations from the approved QAPP? And if so, what were they, and what are the implications of the change(s), if any?). Consider including the following information in the QA/QC section of the report.

- Current contact information for project personnel, including project manager, quality control officer and database manager
- Type and number of QC samples taken during the project (e.g., field blanks, duplicates, etc.)
- QC results and discussion of both field and laboratory quality control sample results (including overall precision of field duplicates (as relative percent difference, or RPD), blank contamination (if any), analytical accuracy for known PE samples (if any), holding time exceedances, etc.)
- QC evaluation for any field or lab audits that may have been done
- Type, extent and dates of actual field equipment calibration and maintenance (with supporting documentation as appropriate)

- Discussion of how data validation process was implemented and how the results of validation affected the project data (e.g., were data quality objectives (DQOs) met, as outlined in the QAPP; were any identified QC problems applied to whole survey samples and/or analytical sample batches). Also, what were the specific data validation steps performed to accept, qualify, and censor project data. List data qualifier symbols used, if any (e.g., "J" for 'estimated' by laboratory).
- Data completeness (i.e., any missing data)
- Database management system employed
- Other project information as they may have affected sample data and lab QC data

(8) Discussion. Data analyses and discussion of results can provide important information that should be included in the reports. Although EPA and MassDEP is mainly interested in the quality-assured tabular data, graphic displays of the data can also be helpful.

~~(9) Conclusion(s). Summarize findings and provide recommendations for additional monitoring and/or remedial actions to improve water quality~~

(10) Appendices. Include complete set or example completed copies of relevant appendices for raw laboratory data and raw field data (including survey dates), completed field sheets and completed sample chain-of-custody forms, as well as any other relevant documentation.

See 2025 Final Permit for other relevant requirements.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION 1
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

STATEMENT OF BASIS

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT MODIFICATION TO DISCHARGE TO WATERS OF THE UNITED STATES PURSUANT TO THE CLEAN WATER ACT (CWA)

NPDES PERMIT NUMBER: MA0100501

PUBLIC NOTICE START AND END DATES: June 26, 2026 – July 27, 2026

NAME AND MAILING ADDRESS OF APPLICANT:

South Essex Sewerage District
P.O. Box 989
Salem, MA 01970

The municipalities of Beverly, Danvers, Marblehead, Peabody, and Salem are Co-permittees for specific activities required by the permit, as set forth in Section 5.5 of the 2025 Fact Sheet and Sections I.B, I.C and I.D of the 2025 Final Permit. These activities pertain to the operation and maintenance of the collection systems owned and operated by the Co-permittees. The responsible municipal departments are:

City of Beverly
c/o City Engineer
Beverly City Hall
191 Cabot Street
Beverly, MA 01915

Town of Danvers
c/o Town Engineer
Public Works Eng. Div.
1 Burroughs Street
Danvers, MA 01923

Town of Marblehead
c/o Superintendent
Water/Sewer Department
P.O. Box 1108
Marblehead, MA 01945

City of Peabody
c/o Mayor
24 Lowell Street
Peabody, MA 01960

City of Salem
c/o City Engineer
120 Washington Street, 4th Fl
Salem, MA 01970

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

South Essex Wastewater Treatment Facility
50 Fort Avenue
Salem, MA 01970

RECEIVING WATER AND CLASSIFICATION:

Salem Sound (Segment MA 93-56)
North Coastal Watershed
Class SB

1.0 PROPOSED ACTION

On December 22, 2025, the U.S. Environmental Protection Agency, Region 1 ("Region") issued a NPDES Permit ("2025 Permit") to the South Essex Sewerage District ("Permittee" or "SESD") for discharges from the South Essex Wastewater Treatment Facility to Salem Sound via Outfall 001.

On January 21, 2026, SESD petitioned the Environmental Appeals Board (EAB) for review of five conditions in the 2025 Permit: (1) the ambient monitoring requirement; (2) year-round effluent bacteria limits for fecal coliform and *Enterococci*; (3) the mixing-zone approach used to set those bacteria limits; (4) monitoring requirements for per- and polyfluoroalkyl substances (PFAS) and adsorbable organic fluorine; and (5) the increased monitoring frequency for effluent nitrogen. Pursuant to 40 CFR § 124.16(a)(1), the permit has been stayed.[1] On May 5, 2026, EPA issued a Notice of Uncontested and Severable Permit Conditions, continuing to stay the five contested conditions above and putting the 2025 Permit's remaining conditions into effect on July 1, 2026.[2]

The parties agreed to participate in settlement negotiations, during which SESD provided EPA with new information regarding the costs and feasibility of the ambient monitoring requirement as well as a new analysis of effluent nitrogen data. This new information was not available at the time of permit issuance and, as explained in Part 2.0 below, is cause for modification. *See* 40 CFR § 122.62(a)(2). EPA also identified an error in the permit's final bacteria effluent limits which EPA proposes to correct.

EPA proposes to remove the maximum daily limit for *Enterococci* of 276 cfu/100 mL and replace it with a maximum daily limit of no more than 10% of samples exceeding 130 cfu/100mL and allow the Permittee to simulate the chlorine contact time in the outfall pipe prior to discharge. EPA also proposes to remove the increased April 1 through October 31 weekly monitoring frequency for total Kjeldahl nitrogen and nitrate + nitrite and retain the monthly monitoring that SESD was required to conduct under the 2016 Final Permit. Finally, EPA proposes to reduce the monitoring frequency for the Ambient Monitoring Plan from six sampling dates per year to four sampling dates beginning the first April following the approval of the QAPP, and four sampling dates thereafter on a biennial basis. After three rounds of sampling, the Permittee may submit a written request to reduce or remove this requirement if it can demonstrate that

[1] While an appeal is pending, contested permit conditions are stayed. *Id*. at § 124.16(a)(1). Uncontested permit conditions that are severable from contested conditions are not stayed and become enforceable conditions of the permit. *Id.* at §§ 124.16(a)(2)(i) and (ii).
[2] See Notice of Uncontested and Severable Permit Conditions, May 5, 2026, https://shorturl.at/uAXMv

additional sampling is unnecessary. If EPA concurs with the request, EPA will notify the Permittee in writing and will make such notification available to the public.

Only these proposed changes are open for public notice and comment. EPA is seeking, and will accept, only comments that address these provisions. All uncontested conditions of the 2025 Final Permit will remain in effect for the duration of the unmodified permit and are not being reopened for public comment and modification. *See* 40 CFR § 124.5(c)(2).

1.1 The Facility

The South Essex Sewage District Wastewater Treatment Facility (WWTF) is a secondary wastewater treatment facility that is engaged in the collection and treatment of municipal wastewater. The Facility has a design flow of 29.71 MGD, the annual average daily flow reported in the 2021 application was 24.94 MGD for 2021 and the average for the last 5 years has been 26.5 MGD. The system is a separate system with no combined sewers. Wastewater is comprised of mostly domestic sewage with some commercial sewage and some septage.

The SESD WWTF discharges through Outfall 001 into Salem Sound. Salem Sound is classified as a Class SB Shellfishing in the Massachusetts WQSs, 314 Code of Massachusetts Regulations ("CMR") 4.06(6)(b). The MA WQS at 314 CMR 4.05(3)(b) state that Class SB waters are designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth, and other critical functions, and for primary and secondary contact recreation. In certain waters, habitat for fish, other aquatic life and wildlife may include, but is not limited to, seagrass. Where designated for shellfishing in 314 CMR 4.06(6)(b), these waters shall be suitable for shellfish harvesting with depuration (Restricted and Conditionally Restricted Shellfish Areas). These waters shall have consistently good aesthetic value.

Salem Sound is listed in the *Final Massachusetts Integrated List of Waters for the Clean Water Act 2022 Reporting Cycle* ("303(d) List") as a Category 5 "Waters Requiring a TMDL."[3] The pollutants requiring a TMDL are estuarine bioassessments (loss of eelgrass) and fecal coliform. These pollutants indicate impairment of aquatic life and primary contact recreation designated uses.

The facts concerning the Facility and the waterbody that are relevant for the purpose of NPDES permitting are discussed in detail in the 2025 Draft Permit and Fact Sheet and the 2025 Final Permit's Responses to Comments.[4] These documents are incorporated herein by reference for the sole purpose of providing additional background information concerning the Facility, the Final Permit, and the relevant law.

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[3] MassDEP, 2023. *Final Massachusetts Integrated List of Waters for the Clean Water Act 2022 Reporting Cycle,* Final Massachusetts Integrated List of Waters for the Clean Water Act 2022 Reporting Cycle (epa.gov)

[4] The Draft and Final SESD NPDES Permits, and associated documents, are available at https://www.epa.gov/system/files/documents/2025-12/finalma0100501permit-2025.pdf

2.0 BASIS OF THE PROPOSED PERMIT MODIFICATIONS

2.1 *Enterococci* Effluent Limitation

After issuing the 2025 Final Permit, EPA became aware that EPA had erroneously carried forward effluent limits for *Enterococci* from the 2016 Final Permit of an average monthly limit of 35 cfu/100 mL and a maximum daily limit of 276 cfu/100 mL. Those limits were based on MassDEP Guidance for Implementation[5] of the 2006 WQS for primary recreation.

To ensure the permit accurately reflects the applicable regulatory requirements, EPA is now proposing a correction so that the permit limits comply with the current WQS.[6] EPA proposes to establish effluent limitations for *Enterococci* that are consistent with 314 CMR 4.05 (5)(f)2 with a geometric mean of ≤ 35 cfu/100 mL as an average monthly limit and maximum daily limit of no more than 10% of samples ≥ 130 cfu/100 mL. The sampling frequency remains twice per day. EPA also proposes a conforming change to the fecal coliform reporting requirement format on Final Permit in Part I.A.1 and Footnote 7, but is not proposing a modification of the fecal coliform limit itself.

EPA is also proposing a modification to Footnote 8 and allowing the Permittee to simulate the holding time in the outfall pipe prior to discharge into Salem Sound by holding effluent samples in a dark environment before measuring TRC, enterococci and fecal coliform. The holding time shall be calculated based on effluent flow to determine the amount of time required for wastewater to pass between the point of collection and the point of discharge. The Permittee shall keep records of the calculated holding time of each sample.

The following formula is to be used to calculate the holding time:

> Contact time (in minutes) = [1.495 MG (volume of the outfall pipe)] / [effluent flow at time of sample collection (in MGD)] * 1440 minutes/day

The effluent flow at the time of sample collection shall be recorded and a summary of these flows, along with the calculation used in the derivation of the holding time, shall be included as an electronic attachment to the discharge monitoring report (DMR) for each month.

2.2 Nitrogen Monitoring

The 2016 Permit included monthly monitoring requirements for total Kjeldahl nitrogen and nitrate + nitrite. The 2025 Permit included an increased sampling frequency from monthly to weekly during the period of April 1 through October 31 which did not go into effect due to the

[5] MassDEP. 2007. Draft Guidance on Implementation of Proposed Primary Contact Recreation Bacteria Criteria in Massachusetts Surface Water Quality Standards, 314 CMR 4.00.
[6] 314 CMR 4.00, Effective May 26, 2023. https://www.epa.gov/system/files/documents/2023-06/mawqs-2023.pdf

appeal and stay of contested and severable permit conditions. EPA now proposes retaining monthly nitrogen monitoring.

In its Petition for Review, the Permittee presented newly analyzed information in response to the increased frequency which included compiled nitrogen data collected between 2016 and 2025. First, the Permittee presented the effluent data in a box and whisker plot with means ranging between 22 and 32 mg/L (Figure 1). With the exception of 2021, the plot shows that these data have been stable for nearly a decade. EPA believes that the lower nitrogen values reported in 2021 may be related to lower influent concentration due to COVID-19 mitigation efforts.

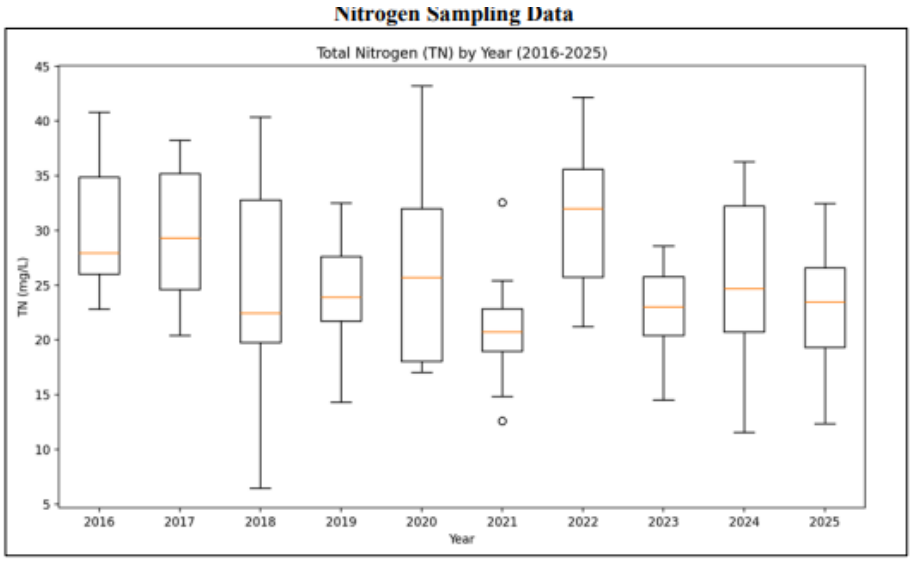

Figure 1: Effluent nitrogen data collected at SESD from 2016-2025, from SESD Petition for Review, p. 41.

The Permittee also provided a scatter plot of both influent and effluent total nitrogen data from 2016-2025. As noted by the permittee, the effluent data shows no “significant trend visually.” As suspected from the previous figure, the influent data collected in 2021 does appear to be lower than other years as a whole.

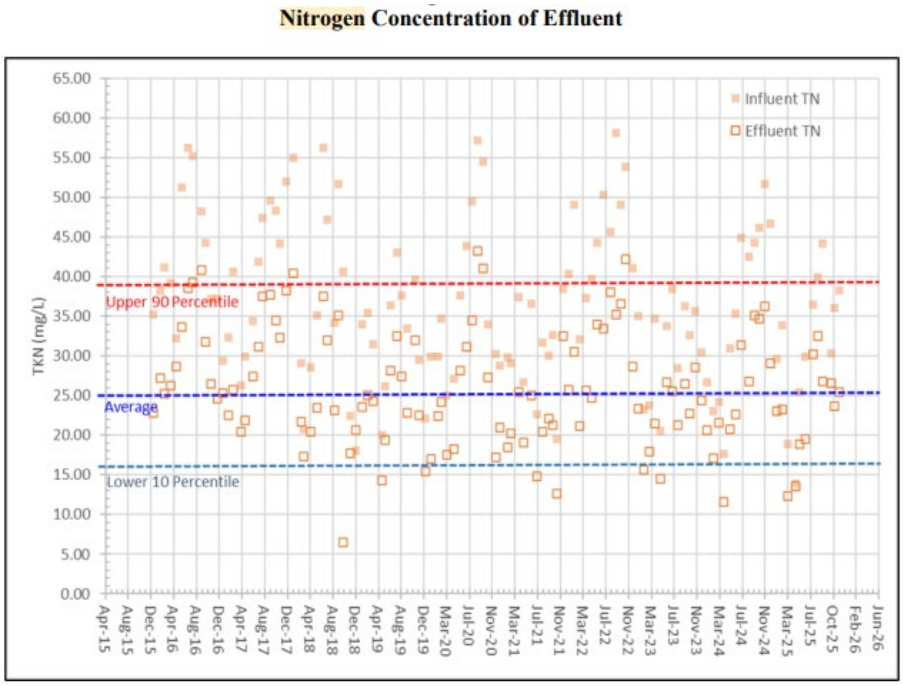

Figure 2: Influent and effluent nitrogen sampling data from SESD Petition for Review, p. 42.

EPA concurs with the Permittee that based on the data analysis presented in the Petition, more frequent effluent nitrogen monitoring is not necessary at this time in order to obtain a sufficiently representative dataset on which to base future permitting decisions. EPA proposes that the modified permit require monthly nitrogen monitoring, as the 2016 Permit required.

2.3 Ambient Monitoring

The 2025 Permit requires the Permittee to conduct ambient water quality monitoring at one station in Salem Sound six times annually each year of the permit term which did not go into effect due to the appeal.[7] The 2016 Permit did not include ambient water quality monitoring. The ambient monitoring program in the 2001 Permit was withdrawn as part of the resolution of that permit appeal, so SESD has never been subject to an ambient monitoring requirement. After EPA issued the Final Permit, SESD provided EPA with new information related to monitoring costs[8] and the utility of the data for meeting EPA's needs.

As discussed in the 2025 Fact Sheet, the Response to Comments and in Section 1.1 of this Statement of Basis, this segment of Salem Sound was listed as impaired for estuarine bioassessments (loss of eelgrass) in the 2022 Final Integrated List of Waters, which is a new impairment for this segment. In the Response to Comments, EPA explained, "…Salem Sound is currently showing signs of nutrient-induced effects, [but] the influence of the SESD discharge is unclear and more data are needed to provide a clearer picture." Based on cost considerations

[7] This is a reduction from the nine times per year that was proposed in the Draft Permit. p. 24.
[8] Petition for Review of South Essex Sewerage District's NPDES Permit Issued by Region 1, January 21, 2026, p. 1.

relative to the utility of the data, EPA proposes to change the number of monitoring dates and implement a biennial monitoring cycle. EPA has concluded that this new monitoring regime will provide a sufficiently equivalent data set because EPA has become aware of other ambient monitoring programs in Salem Sound.[9] Additionally, EPA has fine-tuned the sampling protocol and proposes to remove the zooplankton sampling requirement. In EPA's view, this refined ambient monitoring requirement will provide the data necessary for any future permitting decisions, because they can be analysed in combination with other zooplankton monitoring programs in the geographic area. This revised approach will yield a similarly representative picture of receiving water conditions while reasonably accounting for cost.

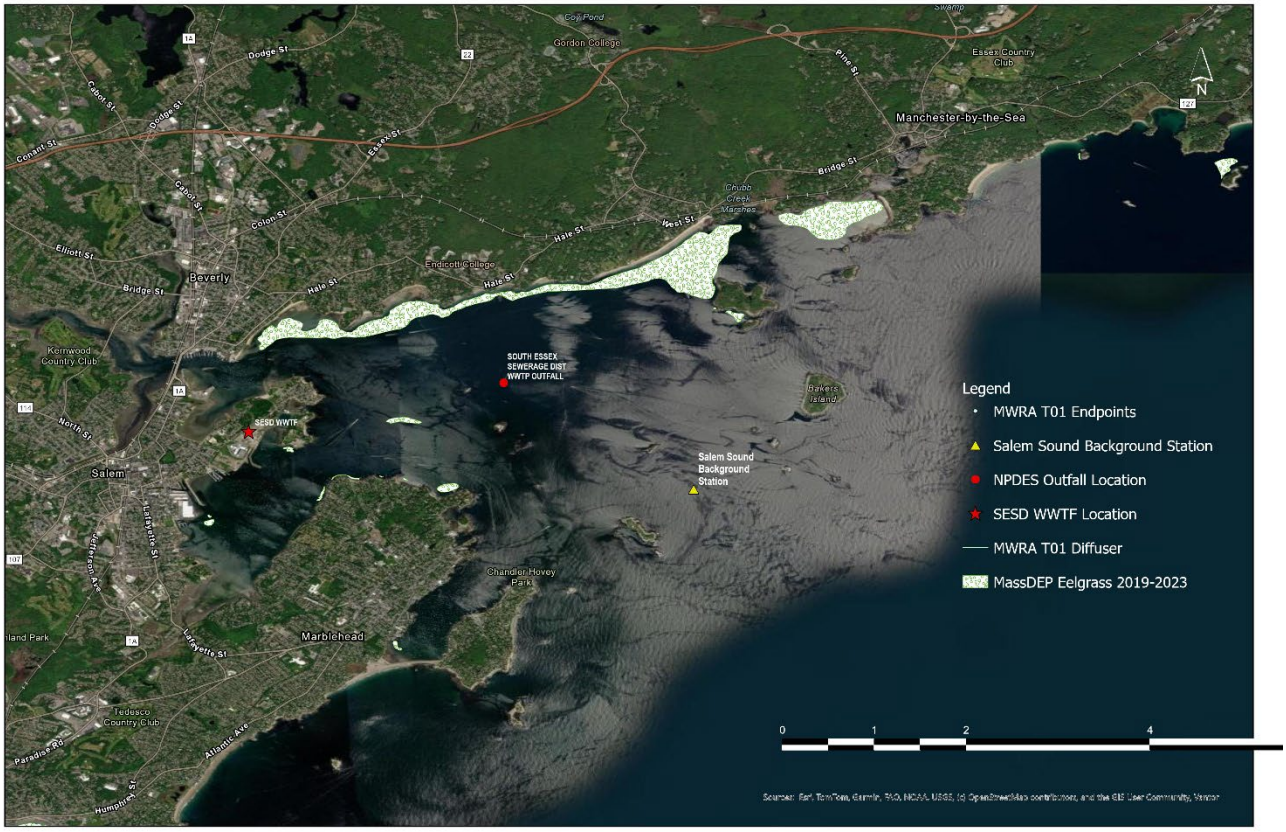

Figure 3: SESD discharge and ambient monitoring station locations

EPA proposes the following revisions to the 2025 Final Permit's ambient monitoring requirement. The proposed revision would eliminate ambient monitoring in mid-June and mid-August, which results in a reduction in sampling dates from six to four dates:

Table 1: Proposed Sampling Dates

When	Target Week	Purpose
Early April	15	Late winter/spring bloom nutrients

[9] Salem Sound Coastwatch conducts ambient water quality monitoring for 13 parameters at 5 stations in Salem Sound funded in part by a MassBays grant. Additional research has been conducted by Salem State University. Monitoring and research is expected to continue pending funding.

Mid-May	20	Nutrient/water column conditions at the end of winter/spring
Mid-July	30	Mid-summer stratification and nutrients
September	38	Nutrients, etc. prior to turnover.

In addition, EPA proposes to require ambient sampling every other year. Sampling would start in the first April following the approval of the QAPP, which is expected to be the second April after the permit's effective date.[10] Accordingly, EPA also proposes to revise the annual reporting and data submission requirements imposed by Part I.G.1.c. and Part I.G.1.d., respectively, to only require reporting and data submission for the years immediately after the sampling is required.
Under this proposal, after completing three full years of sampling, SESD may submit a written request to reduce or remove this ambient monitoring requirement if it can demonstrate that additional sampling is unnecessary. If EPA concurs with the request, EPA will notify the Permittee in writing and will make such notification available to the public. Monitoring consistent with the permit shall continue until the Permittee receives such notification from EPA.

EPA also proposes to modify the monitoring parameters and the depths of sampling for those parameters (changes are highlighted in Table 2). EPA has reduced the depth of water chemistry and phytoplankton sampling to a single depth near the surface, because the depth at the station is only 35 feet and other studies have found that the Sound is well mixed.[11] EPA has also dropped zooplankton identification and enumeration as a parameter.

Table 2: Comparison of Monitoring Parameters, 2025 Final Permit and 2026 Proposed Modification (changes highlighted)

2025 SESD Final Permit			**2026 Proposed Modification**		
6 sampling dates			4 sampling dates		
Analyte	**Depth**	**Parameter**	**Analyte**	**Depth**	**Parameter**
Hydro Profile	Downcast data continuous, with upcast data at any sampled depth	Temperature	Hydro Profile	Downcast data continuous, with upcast data at surface.	Temperature
		pH			pH
		Salinity			Salinity
		Dissolved Oxygen			Dissolved Oxygen
		Chlorophyll fluorescence			Chlorophyll fluorescence
		Turbidity (or Transmissometry)			Turbidity (or Transmissometry)
		PAR/Irradiance			PAR/Irradiance
		Depth of Sensors			Depth of Sensors

[10] To adequately prepare for sampling in Year 2 (2028), the Permittee should refer to Final Permit section G.1.a.
[11] Hubeny et. al. 2017. Multi-faceted monitoring of estuarine turbidity and particulate matter provenance: Case Study from Salem Harbor, USA. Science of the Total Environment 574 (2017) 629-641. http://dx.doi.org/10.1016/j.scitotenv.2016.09.081

2025 SESD Final Permit			**2026 Proposed Modification**		
Downcast, continuous and 3 sampled depths			Downcast, continuous and 1 sampled depth		
Water Chemistry	Three depths. Surface chlorophyll maximum and bottom.	Ammonium	Water Chemistry	Surface.	Ammonium
		Nitrate			Nitrate
		Nitrite			Nitrite
		Total dissolved nitrogen			Total dissolved nitrogen
		Particulate nitrogen			Particulate nitrogen
		Phosphate			Phosphate
		Total dissolved phosphorus			Total dissolved phosphorus
		Particulate phosphorus			Particulate phosphorus
		Silicate			Silicate
		Particulate organic carbon			Particulate organic carbon
		Chlorophyll-a			Chlorophyll-a
3 sampled depths (surface, chlorophyll maximum and bottom)			1 sampled depth (surface)		
Phytoplankton	Near surface and chlorophyll maximum	Identification	Phytoplankton	Near surface	Identification
		Enumeration			Enumeration
2 depths			1 depth		
Zooplankton	Net Tow	Identification			
		Enumeration			
Zooplankton, net tow			No zooplankton		

Finally, EPA has also modified the reporting requirement for Ambient Monitoring by eliminating the conclusion section (G.1.c.(9)) of the Annual Report requirement as EPA agrees with the Permittee that providing recommendations for additional monitoring and/or remedial actions is not necessary for EPA's data needs. EPA also notes that the monitoring report is due "by November 15th of the following year (*e.g.*, An annual report for 2028 sampling results is due November 15, 2029)." This is not a change but an emphasis that the report is not due the same year as sample collection.

3.0 STATE CERTIFICATION

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate the State WQSs, or the State waives, or is deemed to have waived, its right to certify. *See* 33 U.S.C. § 1341(a)(1). Regulations governing state certification are set forth in 40 CFR § 124.53

and § 124.55. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the Draft Permit will be certified.

If the State believes that conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either CWA §§ 208(e), 301, 302, 303, 306 and 307, or applicable requirements of State law, the State should include such conditions in its certification. The only exception to this is that the permit conditions/requirements regulating sewage sludge management and implementing CWA § 405(d) are not subject to the State certification requirements. Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through EPA's permit appeal procedures of 40 CFR Part 124.

In addition, the State may provide a statement of the extent to which any condition of the Draft Permit can be made less stringent without violating the requirements of State law.

It should be noted that under CWA § 401, EPA's duty to defer to considerations of State law is intended to prevent EPA from relaxing any requirements, limitations or conditions imposed by State law. Therefore, "[a] State may not condition or deny a certification on the grounds that State law allows a less stringent permit condition." 40 CFR § 124.55(c). In such an instance, the regulation provides that, "The Regional Administrator shall disregard any such certification conditions or denials as waivers of certification." *Id.* EPA regulations pertaining to permit limitations based upon WQSs and State requirements are contained in 40 CFR §§ 122.4(d) and 122.44(d).

4.0 FEDERAL PERMITTING REQUIREMENTS

The Federal action being considered in this case is EPA's proposed NPDES permit modification to the 2025 Final Permit for South Essex Sewerage District's South Essex Wastewater Treatment Facility. The Draft Permit Modification modifies effluent limits for *Enterococci* and fecal coliform, to align with current State water quality standards, retain existing sampling frequencies for total Kjeldahl nitrogen and nitrate + nitrite as in the 2016 Permit, and reduce the ambient monitoring frequency from six to four times per year, reduce the number of sampling depths, remove monitoring for zooplankton, remove the conclusion section of the summary report and a process for ending the ambient monitoring upon notification by EPA. As explained below, the proposed modifications do not alter consideration of Endangered Species Act, Essential Fish Habitat, and Coastal Zone Management Act Federal made for issuance of the Final Permit.

4.1 Endangered Species Act

As described in the 2025 Fact Sheet, the action area of the discharge does overlap with the protected species under the jurisdiction of USFWS. USFWS concluded by letters[12,13] the project would have "no effect" on the northern long-eared bat, the tricolored bat or the roseate tern.

The outfall and action area overlap with coastal waters where several protected marine species are found. The NOAA Fisheries ESA Section 7 Mapper Species List[14] documented the following protected species in the SESD WWTF action area: Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus;* adult and subadult life stages, migrating and foraging year-round), shortnose sturgeon (*Acipenser brevirostrum;* adult life stage, migrating and foraging, April 1 through November 30), the green sea turtle (*Chelonia mydas*), Kemp's ridley sea turtle (*Lepidochelys kempii*), leatherback sea turtle (*Dermochelys coriacea*) and loggerhead sea turtle (*Caretta caretta;* adult and juvenile life stages, migrating and foraging, June 1 through November 30) and the North Atlantic right whales (*Eubalaena glacialis*) and fin whales (*Balaenoptera physalus;* adult and juvenile life stages foraging year-round). EPA received concurrence from NOAA Fisheries on March 12, 2025.[15]

4.2 Essential Fish Habitat

A review of the relevant essential fish habitat (EFH) information provided by NOAA Fisheries, including the NOAA Fisheries EFH Mapper,[16] indicates that the outfall exists within designated EFH for the 25 federally managed species and one Habitat Area of Particular Concern (HAPC). EPA received concurrence from NOAA Fisheries on March 18, 2025.[17]

4.3 Coastal Zone Management (CZM) Consistency Review

The Coastal Zone Management Act (CZMA), 16 U.S.C. 1451 et seq., and its implementing regulations (15 CFR Part 930) require a determination that any federally licensed or permitted activity affecting the coastal zone with an approved Coastal Zone Management Program (CZMP) is consistent with the enforceable policies of the CZMP. EPA is prohibited from issuing a NPDES permit for any activity affecting any land or water use or natural resource of the coastal zone until the applicant certifies that the proposed activity complies with the State Coastal Zone

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[12] USFWS. November 25, 2024. Subject: Record of project representative's no effect determination for 'South Essex Sewer District Wastewater Treatment Facility'

[13] USFWS. November 25, 2024. Subject: Federal agency coordination under the Endangered Species Act, Section 7 for 'South Essex Sewer District Wastewater Treatment Facility

[14] NOAA Fisheries ESA Mapper at: https://www.fisheries.noaa.gov/resource/map/greater-atlantic-region-esa-section-7-mapper

[15] GARFO ESA Section 7 Programmatic Framework for NPDES Permits in EPA Region 1
EPA NLAA Programmatic Verification Form, signed Meagan Riley, NOAA, March 12, 2025.

[16] https://www.habitat.noaa.gov/apps/efhmapper/

[17] EMAIL. Alexa Cacacie, NOAA to Robin Johnson, EPA. March 18, 2025. Subject: Re: EFH Memo for South Essex Sewerage District NPDES Permit (MA0100501)

Management program, and the State or its designated agency concurs with the certification, or the Secretary of Commerce overrides the State's nonconcurrence. *See* 40 CFR § 122.49(d).

The discharge is within the defined CZM boundaries. The Permittee submitted the required federal consistency certification and necessary data and information to the MassCZM for the issuance of the 2025 Final Permit. On July 23, 2025, Massachusetts CZM issued a letter[18] to SESD acknowledging that it had completed its review and concurs with the Permittee's certification that the activity is consistent with CZM enforceable program policies.

CZM also stated that "[i]f the above-referenced activity is modified in any manner, including any changes resulting from permit, license, or certification revisions, including those from an appeal, or the activity is noted to be having effects on coastal resources or uses that are different than originally proposed, it is incumbent upon the proponent to notify CZM and submit any modified state permits, licenses, or certifications. During the permit modification public notice period, EPA will request that the Permittee submit a letter to the Massachusetts Coastal Zone Management Program stating their intention to continue to abide by the CZM water quality and habitat policies. EPA expects that CZM will find the discharge consistent with its policies.

5.0 Public Comments, Hearing Requests and Permit Appeals

All persons, including applicants, who believe any condition of the Draft Permit Modification is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the permit writer, Michele Barden at the following email address: barden.michele@epa.gov.

Prior to the close of the public comment period, any person may submit a written request to EPA for a public hearing to consider the Draft Permit Modification. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held if the criteria stated in 40 CFR § 124.12 are satisfied. In reaching a final decision on the Draft Permit Modification, EPA will respond to all significant comments in a Response to Comments document attached to the Final Permit Modification and make these responses available to the public on EPA's website.

Following the close of the comment period, and after any public hearings, if such hearings are held, EPA will issue a Final Permit Modification decision, forward a copy of the final decision to the applicant, and provide a copy or notice of availability of the final decision to each person who submitted written comments or requested notice. Within 30 days after EPA serves notice of the issuance of the Final Permit Modification decision, an appeal of the federal NPDES permit

[18] Alison Brizius, MA CZM. July 23, 2025. RE: CZM Federal Consistency Review of South Essex Sewerage District – Permit Renewal, NPDES # MA0100501; Salem.

may be commented by filing a petition for review of the permit with the Clerk of EPA's Environmental Appeals Board in accordance with the procedures at 40 CFR § 124.19.

If for any reason, comments on the Draft Permit Modification and/or a request for a public hearing cannot be emailed to the permit writer specified above, please contact them at telephone number: (617) 918-1539.

6.0 Administrative Record

The administrative record on which this Draft Permit Modification is based may be accessed by contacting Michele Barden at 617-918-1539 or via email to barden.michele@epa.gov.

June 2026
Date

Ken Moraff, Director
Water Division
U.S. Environmental Protection Agency

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY – REGION 1 (EPA)
WATER DIVISION
5 POST OFFICE SQUARE
BOSTON, MASSACHUSETTS 02109

EPA PUBLIC NOTICE OF A DRAFT MODIFICATION TO THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO WATERS OF THE UNITED STATES UNDER SECTION 402 OF THE CLEAN WATER ACT (CWA), AS AMENDED.

PUBLIC NOTICE PERIOD: **June 26, 2026 to July 27, 2026**

PERMIT NUMBER: MA0100501

NAME AND MAILING ADDRESS OF APPLICANT:

South Essex Sewerage District
P.O. Box 989
Salem, MA 01970

NAMES AND MAILING ADDRESSES OF CO-PERMITTEES:

City of Beverly
c/o City Engineer
Beverly City Hall
191 Cabot Street
Beverly, MA 01915

Town of Danvers
c/o Town Engineer
Public Works Eng. Div.
1 Burroughs Street
Danvers, MA 01923

Town of Marblehead
c/o Superintendent
Water/Sewer Department
P.O. Box 1108
Marblehead, MA 01945

City of Peabody
c/o Mayor
24 Lowell Street
Peabody, MA 01960

City of Salem
c/o City Engineer
120 Washington Street, 4th Fl
Salem, MA 01970

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

South Essex Wastewater Treatment Facility
50 Fort Avenue
Salem, MA 01970

RECEIVING WATER AND CLASSIFICATION:

Salem Sound (Class SB)

PREPARATION OF THE DRAFT PERMIT:

EPA is issuing for public notice and comment the Draft NPDES Permit Modification for the South Essex WWTF, which discharges treated domestic and industrial wastewater. Dewatered biosolids are trucked to for incineration or disposal in a municipal solid waste landfill.

On December 22, 2025, the U.S. Environmental Protection Agency, Region 1 ("Region") issued a NPDES Permit ("2025 Permit") to the South Essex Sewerage District ("Permittee" or "SESD") for discharges from the South Essex Wastewater Treatment Facility to Salem Sound via Outfall 001. On January 21, 2026, SESD petitioned the Environmental Appeals Board (EAB) for review of certain permit conditions. The parties agreed to participate in settlement negotiations. EPA is proposing limited modifications to the 2025 Final Permit.

Only these proposed changes are open for public notice and comment. EPA is seeking, and will accept, only comments that address the provisions identified in the Draft Permit Modification. All uncontested conditions of the 2025 Final Permit will remain in effect for the duration of the unmodified permit and are not being reopened for public comment and modification. *See* 40 CFR § 124.5(c)(2).

The effluent limits and permit conditions have been drafted pursuant to, and assure compliance with, the CWA, including EPA-approved State Surface Water Quality Standards at 314 CMR 4.00. MassDEP cooperated with EPA in the development of the Draft NPDES Permit Modification. MassDEP retains independent authority under State law to publish for public notice their CWA § 401 certification and a separate state Surface Water Discharge Permit Modification for the discharge, not the subject of this notice, under the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53.

INFORMATION ABOUT THE DRAFT PERMIT MODIFICATION:

The Draft Modification Permit and explanatory Statement of Basis may be obtained at no cost at https://www.epa.gov/npdes-permits/massachusetts-draft-individual-npdes-permits or by contacting:

Michele Barden
Telephone: (617) 918-1539
Email: barden.michele@epa.gov

Any electronically available documents that are part of the administrative record can be requested from the EPA contact above.

PUBLIC COMMENT AND REQUESTS FOR PUBLIC HEARINGS:

All persons, including applicants, who believe any condition of this Draft Permit Modification is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by **July 27, 2026,** which is the close of the public comment period. Comments should be submitted to the EPA contact at the email listed above. If you prefer to submit comments by mail, please call or email the EPA contact above to make arrangements for that. Upon the close of the

public comment period, EPA will make all comments available to MassDEP. All commenters who want MassDEP to consider their comments in the state decision-making processes (*i.e.*, the separate state permit modification and the CWA § 401 certification) must submit such comments to MassDEP during the state comment period for the state Draft Permit and CWA § 401 certification. For information on submitting such comments to MassDEP, please follow the instructions found in the state public notice at: https://www.mass.gov/service-details/massdep-public-hearings-comment-opportunities.

Any person, prior to the close of the EPA public comment period, may submit a request in writing to EPA for a public hearing on the Draft Permit Modification under 40 CFR § 124.10. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held if the Regional Administrator finds that response to this notice indicates significant public interest.

In reaching a final decision on this Draft Permit Modification, the Regional Administrator will respond to all significant comments and make the responses available to the public.

FINAL PERMIT DECISION:

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and notify the permittee and each person who has submitted written comments or requested notice.

KEN MORAFF, DIRECTOR
WATER DIVISION
U.S. EPA – REGION 1