

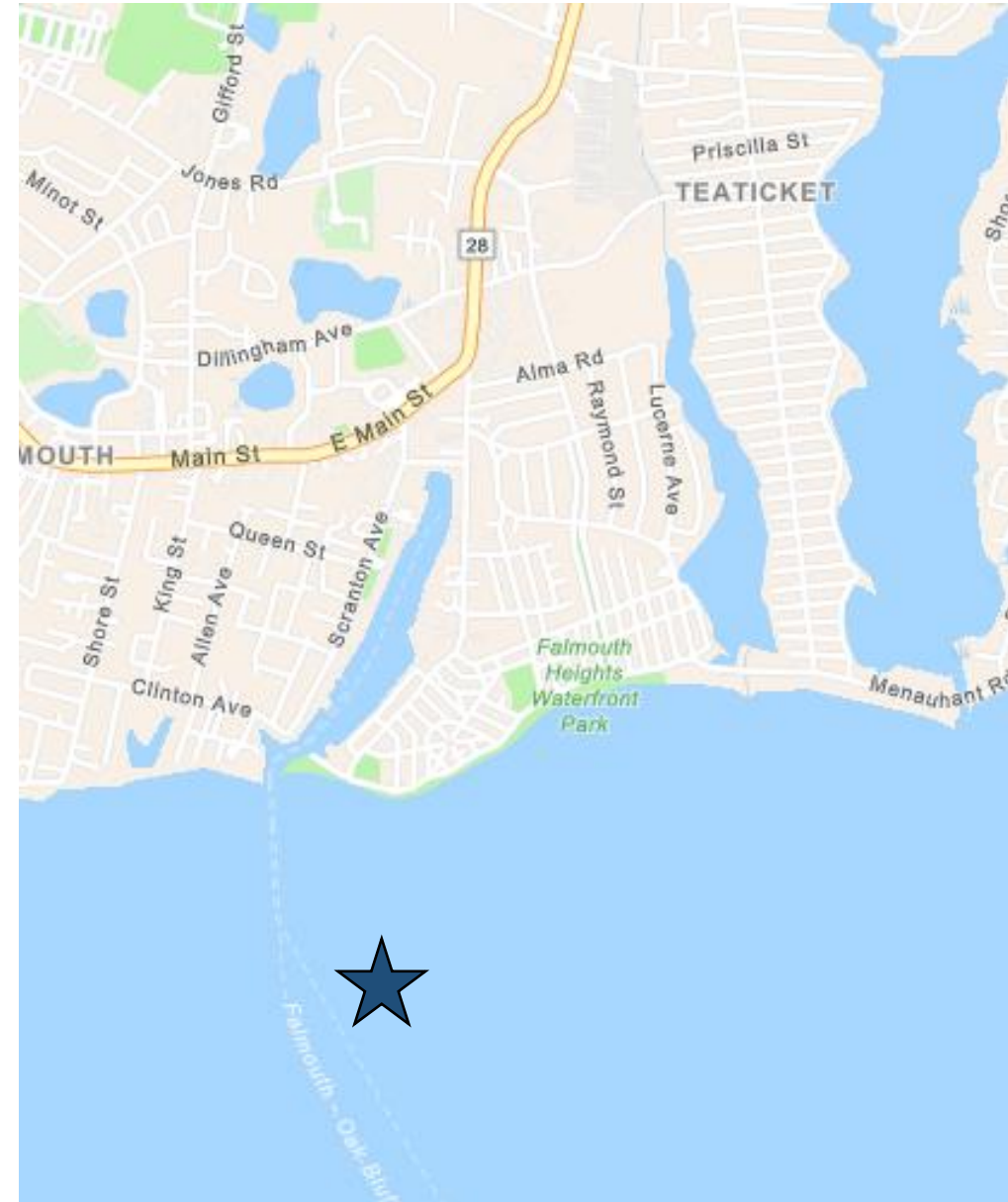
Falmouth Outfall Project Update and Antidegradation Evaluation Overview

Presentation to
Water Quality Management Committee

Amy Lowell, Wastewater Superintendent
March 18, 2026

Summary of proposed outfall

- Tertiary treated wastewater, ultraviolet disinfection
- Discharge location ~ 2,300 feet offshore in Nantucket Sound
- Beyond 20-foot water depth contour (beyond eelgrass)
- Diffusers to disperse discharge
- High water velocity at this location
- When outfall is available, will cease regular discharge to ground at Main WWTF, and expand sewer areas to meet TMDLs



Outfall project status update

- Submitted Environmental Notification (ENF) form to the Massachusetts Environmental Policy Act (MEPA) office Sept 2025
- Public and regulatory review of ENF Sept 10-Oct 21
- Received Secretary's Certificate on the ENF Oct 31 2025, scoping the Environmental Impact Report (EIR) for the outfall project
- Funds appropriated at Nov 2025 Town meeting to prepare outfall conceptual design, EIR and initial permitting
- Evaluations – water quality (antidegradation), benthic data, interbasin transfer, modeling (for shellfish classification)
- Conceptual design – in preparation
- Preparing EIR for April submission

Antidegradation Evaluation

- Scope developed in collaboration with DEP, EPA and CZM in 2025
- 2 year sampling program conducted in Nantucket Sound and at the Falmouth WWTF
- Report evaluated potential impacts of proposed discharge, based on Massachusetts Surface Water Quality Standards and anti-degradation examples for other MA and NE communities
- Antidegradation evaluation findings were presented to Regulatory Working Group on February 11, 2026
- Report was submitted for regulatory review on March 12, 2026
- Regulatory review meeting schedule for April 2, 2026

Sampling Program Locations

- Falmouth WWTF Treated Effluent
 - 24-hour composite samples collected from effluent distribution box
 - Grab samples collected downstream of UV modules
 - PFAS samples collected as influent grab samples
- Nantucket Sound
 - FOF1: Proposed Outfall Site
 - FOF2: Nearshore Site
 - FOF3: Reference Site (for future monitoring program)
 - NTKS10: Historical Data



Reduction in Nitrogen Load to Nantucket Sound

Source	Flow (MGD)	Total Nitrogen (mg/L)	Total Nitrogen (kg/year)
Relocation of Treated Effluent Discharge from Falmouth WWTF to Nantucket Sound (Current Permitted Capacity)	0.71	3.00	2,941
Existing Septic Flow and Nitrogen to be Removed from Nantucket Sound Through Planned Sewering in South Coast Estuaries ¹	0.47	26.25	(16,890)
Treated Effluent Discharge to Nantucket Sound from Septic to Sewer Conversion	0.47	3.0	1,930
Total Nitrogen Impact to Nantucket Sound	-	-	(12,019)

Notes:

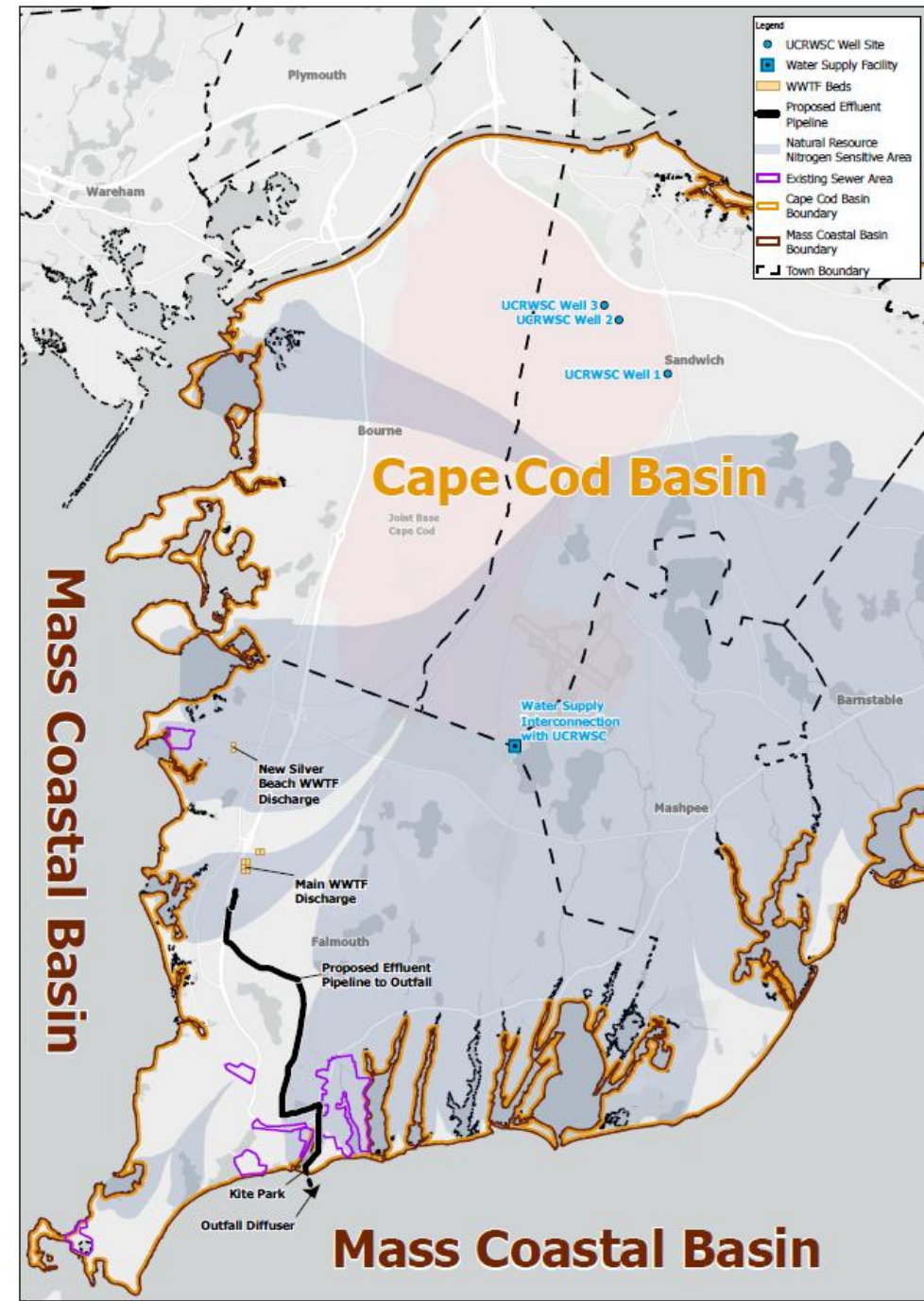
1. This is load only from south coast sewerage outlined in 2022 Great Pond TWMP. Additional potential sewer areas are currently being evaluated as part of the Watershed Management Planning project. Existing septic load to be removed from Nantucket Sound will be between 16,890 kg/yr and 42,950 kg/yr depending on final watershed management plans.

Antidegradation Evaluation Findings

- Ambient levels in Nantucket Sound met Class SA criteria for all parameters, with the exception of arsenic (arsenic was not detected in wastewater effluent).
- Quantitative parameters: The proposed discharge will use less than 10% of the available assimilative capacity for all parameters within 300 ft of the outfall.
- Treatment process modifications will be evaluated before the facility transitions from groundwater to surface water discharge to increase dissolved oxygen (post-aeration), and pH/alkalinity, if needed.
- Based on outfall permit limits for pathogens, treatment process modifications can be evaluated to consistently achieve the required disinfection.
- The outfall will significantly reduce nitrogen load to Nantucket Sound by enabling sewerage.

Inter Basin Transfer Act (IBTA)

- Wastewater derived from water withdrawn within the Town of Falmouth is exempt from IBTA review
- Water purchased from the Upper Cape Regional Water Supply Cooperative will cross a municipal line and basin line and is subject to the Inter Basin Transfer Act
- Falmouth is requesting a Determination of Insignificance for the transfer
- Jurisdictional transfer will be under 1 MGD
- Evaluation conducted using USGS evaluation on project aquifer impact



USGS / IBTA Analysis

- Scenario 1 – evaluated sewerage all properties south of Route 28 in Falmouth (approximation of sewerage envision for the next 15 years)
- Scenario 2 – evaluated sewerage all properties in Falmouth (bracketing scenario – outfall design cannot accommodate this flow)
- USGS study concluded that the simulated hydrologic response of the water table altitudes and streamflow in both scenarios is relatively small compared to the fluctuation from natural recharge.
- Coordinating with DCR to request a Determination for Insignificance this spring



Base from U.S. Geological Survey digital data, various scales and dates
Massachusetts State Plane Coordinate System
North American Datum of 1927

0 1 2 MILES
0 1 2 KILOMETERS

EXPLANATION

— 1.3 — **Line of equal simulated water-table altitude decrease**—Shows simulated decrease in altitude of water table between current (2019–23) hydrologic conditions and scenario 2. Contour interval is 0.2 feet

Key Regulatory Meetings – since July 2025

- September 2025 - Division of Marine Fisheries and FDA - shellfish area classifications
- September 2025, January/February 2026 – Office of Water Resources – Interbasin Transfer Act
- September 2025 – MEPA Consultation Session (for Environmental Notification Form)
- January/February 2026 - Coast Guard/NOAA – mapping outfall on charts
- February 2026 – DEP/EPA/CZM – Antidegradation Evaluation Review
- Ongoing close coordination with DEP and CZM

Massachusetts Environmental Policy Act (MEPA) Process

- Environmental Notification Form (ENF) – submitted September 2025
 - Establishes ocean outfall as recommended strategy for treated effluent discharge
 - Initiates scoping of anticipated Environmental Impact Report (EIR)
 - EIR scope issued October 2025.
- Draft Environmental Impact Report (EIR) - May 2026
- Final MEPA determination - late 2026

Public Communication

- WQMC meeting and Select Board presentations 2023, 2024, 2025
- Falmouth Heights-Maravista Neighborhood Association Annual Meeting – August 2024, 2025
- Teaticket Association Annual Meeting – August 2024
- Town Meeting – November 2024, Nov 2025
- Martha's Vineyard Commission – January 2025
- Shellfish Advisory Committee – March 4, 2025
- Sierra Club Cod & Islands Group – May 20, 2025
- Environmental Justice Notification – June 26, 2025
- MEPA ENF public meeting – August 2025

Outfall Schedule

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Preliminary Evaluation/Modeling	█	█								
Data Collection/Evaluation		█	█							
Town Meeting Appropriations			X		X	X				
Outfall Conceptual Design				█						
MEPA Process			█	█						
ENF										
Draft EIR				█						
Final EIR					█					
Permitting (all)	█	█	█	█	█	█				
NPDES Permits						█				
Design					█	█				
SRF Funding Process						█	█			
Bid/Construct Outfall							█	█	█	█

Discussion