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CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
EXPANDED ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME	: Comprehensive Wastewater Management Plan
PROJECT MUNICIPALITY	: Bourne
PROJECT WATERSHED	: Cape Cod, Buzzards Bay, and South Coastal
EEA NUMBER	: 16910
PROJECT PROPONENT	: Town of Bourne
DATE NOTICED IN MONITOR	: January 8, 2025

Pursuant to the Massachusetts Environmental Policy Act (MEPA; M.G.L. c. 30, ss. 61-62L) and Section 11.06 of the MEPA Regulations (301 CMR 11.00), I have reviewed the Expanded Environmental Notification Form (EENF) and hereby determine that this project requires the submission of an Environmental Impact Report (EIR). In accordance with Section 11.06(8) of the MEPA regulations, the Proponent requested that I allow a Single EIR to be submitted in lieu of the usual two-stage Draft and Final EIR process. The EENF described the Town of Bourne's (Town's) Comprehensive Wastewater Management Plan (CWMP). As detailed below, comments from the Massachusetts Department of Environmental Protection (MassDEP) and the Cape Cod Commission have noted the need for clarification of critical components of the CWMP, including the schedule for implementation, nitrogen removal measures to be implemented in each of Town's watersheds, and the data and analyses that form the basis for selection of the proposed nitrogen removal measures. The Massachusetts Office of Coastal Zone Management (CZM) has also provided the Town with recommendations for additional analyses that should be conducted to evaluate potential flood and erosion hazards of project components. For these reasons, I am denying the request to file a Single EIR. The Town should prepare and submit a Draft EIR (DEIR) in accordance with the Scope below.

Project Description

As described in the EENF, the project consists of the development and implementation of the Town's CWMP to address the Town's wastewater needs and nitrogen impacts in seven watersheds in the Town, including Phinneys Harbor, Megansett-Squeteague Harbor, Buttermilk Bay, Pocasset Harbor, Pocasset River, Buzzards Bay, and Cape Cod Canal Watersheds. Based on reports prepared by the Massachusetts Estuaries Project (MEP), Total Maximum Daily Load (TMDL) limits were established for the Phinneys Harbor Watershed (including Phinneys Harbor, Eel Pond, and Back River sub-watersheds) in 2007 and for the Megansett-Squeteague Harbor Watershed (including the Squeteague Harbor, Megansett Chanel, and Megansett Harbor sub-watersheds) in 2015; TMDLs have not been established for the other five watersheds. The CWMP will be implemented over a 20-year period.

The Draft Recommended Plan¹ included in the CWMP prioritizes implementation of nitrogen removal measures in the Phinneys Harbor and Megansett-Squeteague Harbor watersheds in the first 10-year period (Phase 1) because TMDLs have been established for these areas. Phase 2 (Years 11-20) will address nitrogen impacts in the Buttermilk Bay, Pocasset Harbor, and Pocasset River Watersheds, which are nitrogen-impacted watersheds but currently without established TMDLs. The Buzzards Bay and Cape Cod Canal watersheds are not currently nitrogen-impacted and will be addressed in Phase 3 (Years 11-20).

As described in the EENF, activities proposed in Phase 1 include:

- Construction of approximately 12.6 miles of new sewer mains and up to three pump stations to provide sewer service to 436 parcels in the Phinneys Harbor Watershed
- Construction of upgrades to the existing wastewater treatment facility (WWTF) and effluent discharge beds at the Bourne School Complex to increase the permitted treatment capacity from 35,400 gallons per day (gpd) to 121,500 gpd to accept flow from the proposed Phinneys Harbor sewers
- Implementation of General Use Innovative/Alternative (GUIA) septic systems on individual parcels in the Megansett-Squeteague Harbor Watershed
- Stormwater Best Management Practices
- Investigating the use of Responsible Management Entities (RME) to monitor water quality progress of the systems on individual parcels

Phase 2 includes installation of GUIA systems and investigation of the need for sewer systems and treatment facilities in the Buttermilk Bay, Pocasset Harbor, and Pocasset River watersheds. In Phase 3, the Town will reevaluate conditions in the Buzzards Bay and Cape Cod Canal Watersheds to determine whether nitrogen-reducing measures are required; therefore, specific reduction measures are not yet proposed for these two watersheds in the Draft Recommended Plan.

¹ As used in this Certificate, the term "Draft Recommended Plan" refers to the proposed nitrogen removal measures and related information and analyses included in the Draft Recommended Plan component of the CWMP and summaries of the Draft Recommended Plan included in the EENF, and the term CWMP refers to information collectively provided in the CWMP Needs Assessment, CWMP Alternatives Analysis, and CWMP Draft Recommended Plan included as attachments to the EENF, as well as information in the EENF specifically regarding the CWMP. In this Certificate, the terms "Draft Recommended Plan" and "CWMP" are used somewhat interchangeably with Draft Recommended Plan referring more specifically to the implementation strategies listed in the CWMP.

The proposed measures listed above are presented in the EENF as the Town's Preferred Alternative. However, the nitrogen removal measures proposed in each watershed and each phase are not consistently or clearly identified in the EENF; some measures, such as sewerage, are identified as backup options in the event primary strategies prove ineffective. As detailed below, the DEIR should clearly describe the measures proposed to be implemented in the Draft Recommended Plan as requested in comments from MassDEP and Cape Cod Commission. In addition, additional alternatives to the Preferred Alternative should be explored, including pursuing a Watershed Permit under new MassDEP regulations at 314 CMR 21.00.²

Project Site

The Town of Bourne is located in the northwestern section of Cape Cod and is bordered to the north by Wareham, Plymouth, and Cape Cod Bay; to the south by Falmouth; to the east by Sandwich; and to the west by Buzzards Bay. The Cape Cod Canal bisects the Town in an east-west direction in the northern part of the Town. According to the EENF, the Town has a year-round population of 20,500 people, which increases to 40,000 in the summer.

According to the Federal Emergency Management Agency (FEMA) National Flood Hazard Layer, areas of Bourne adjacent to Buzzards Bay are located in Coastal Flood Zones with Velocity Hazard (VE zone) with a Base Flood Elevation of 16 feet (ft) to 22 ft NAVD 88 or the 100-year flood plain (AE zone) with BFEs ranging from 15 ft to 17 ft NAVD 88; areas abutting the Cape Cod Canal are located in AE Zones with BFEs ranging from 14 ft to 17 ft NAVD 88; and areas along the Cape Cod Bay shoreline are located in VE Zones with BFEs ranging from 16-17 ft NAVD 88 or AE Zones with BFEs ranging from 14 ft to 16 ft NAVD 88. According to the EENF, Priority Habitat for the following state-listed rare species are located Bourne: Northern Red-bellied Cooter (*Pseudemys rubriventris*; Endangered); Red Knot (*Calidris canutus*; Threatened); Piping Plover (*Charadrius melodus*; Threatened); and Roseate Tern (*Sterna dougalli*; Endangered).

Project activities are proposed within one mile of four Environmental Justice (EJ) populations, including two designated as Income (both in Bourne) and two designated as Minority and Income (in Bourne and Sandwich). Project activities are proposed within five miles of nine additional EJ populations designated as Minority; Income; and Minority and Income located in Falmouth, Mashpee, and Wareham.

Environmental Impacts and Mitigation

The EENF did not provide estimates of the impacts of the implementation of the CWMP because project components have not been designed. Based on maps included in the EENF, proposed activities may be located in or adjacent to wetlands, floodplains, rare species habitat, historical resources, water

² MassDEP issued new regulations at 314 CMR 21.00, titled Watershed Permit Regulations, effective July 7, 2023 as a way to promote reduction in nitrogen loads in the Commonwealth's coastal estuaries and embayment. These regulations authorize 20 year permits to a municipality to implement long term wastewater solutions inclusive of innovative solutions; however, if the permit is not pursued, individual septic systems serving new construction/existing facilities must incorporate Best Available Nitrogen Reducing Technology within 5 years of the effective date of the "Natural Resource Areas" (NSA) designation for the covered watershed. For more information, see <https://www.mass.gov/regulations/314-CMR-2100-watershed-permit-regulations>.

supply protection zones and other resources. The DEIR should review potential impacts to environmental resources based on the conceptual level information available in the CWMP.

The project is intended to improve aquatic health and water quality by removing nitrogen from surface and groundwater. The EENF reviewed general mitigation measures that could be implemented to address impacts of the project. The DEIR should identify measures to avoid, minimize and mitigate impacts of the project based on additional details of the location of proposed nitrogen removal measures identified in the DEIR.

Jurisdiction and Permitting

The project is undergoing MEPA review and is subject to preparation of a mandatory EIR pursuant to 301 CMR 11.03(5)(a)(3) of the MEPA regulations because it requires Agency Actions and involves the construction of one or more new sewer mains of ten or more miles in length. The project is also required to prepare an EIR pursuant to 301 CMR 11.06(7)(b) because it is located within a Designated Geographic Area (or DGA) (as defined in 301 CMR 11.02) around one or more EJ populations. In addition, the project exceeds the ENF threshold at 301 CMR 11.03(5)(b)(4)(c)(ii), New discharge or Expansion in discharge to groundwater of 50,000 or more gpd. It may require one or more Groundwater Discharge Permits and approvals from MassDEP to construct or modify a WWTF. The project may require a Conservation and Management Permit (CMP) from the Natural Heritage and Endangered Species Program (NHESP). It is subject to review under the May 2010 MEPA Greenhouse Gas (GHG) Emissions Policy and Protocol (GHG Policy).

The project will require one or more Orders of Conditions (OOC) from the Bourne Conservation Commissions (or in the case of an appeal, a Superseding Order of Conditions (SOC) from MassDEP) and a National Pollutant Discharge Elimination System (NPDES) Construction General Permit from the EPA. It may require review by the Massachusetts Historical Commission (MHC) under Section 106 of the National Historic Preservation Act of 1966 and M.G.L. Chapter 9, sections 26-27C (950 CMR 70-71).

Because the project is seeking Financial Assistance through the State Revolving Fund, MEPA jurisdiction is broad in scope and extends to all aspects of the project that are likely, directly or indirectly, to cause Damage to the Environment as defined in MEPA regulations.

Request for a Single EIR

The EENF included a request that I allow a Single EIR in accordance with 301 CMR 11.06(8). The MEPA regulations at 301 CMR 11.06(8) indicate that a Single EIR may be allowed provided I find that the EENF:

- a. describes and analyzes all aspects of the project and all feasible alternatives, regardless of any jurisdictional or other limitation that may apply to the Scope;
- b. provides a detailed baseline in relation to which potential environmental impacts and mitigation measures can be assessed; and,
- c. demonstrates that the planning and design of the project use all feasible means to avoid potential environmental impacts.

To support a Single EIR request for any project for which an EIR is required in accordance with 301 CMR 11.06(7)(b), I must also find that the EENF:

d. describes and analyzes all aspects of the project that may affect Environmental Justice Populations located in whole or in part within the Designated Geographic Area around the project; describes measures taken to provide meaningful opportunities for public involvement by Environmental Justice Populations prior to filing the expanded ENF, including any changes made to the project to address concerns raised by or on behalf of Environmental Justice Populations; and provides a detailed baseline in relation to any existing unfair or inequitable Environmental Burden and related public health consequences impacting Environmental Justice Populations in accordance with 301 CMR 11.07(6)(n)1.

Consistent with these requests, the EENF was subject to an extended comment period under 301 CMR 11.05(9).

Review of the EENF

The EENF reviewed existing conditions, provided a conceptual description of proposed conditions and an alternatives analysis, and identified general measures to avoid, minimize and mitigate environmental impacts. The CWMP Plan of Study, Needs Assessment, Alternatives Analysis, and Draft Recommended Plan were included as attachments to the EENF. Consistent with the MEPA Interim Protocol on Climate Change Adaptation and Resiliency, the EENF contained an output report from the MA Climate Resilience Design Standards Tool prepared by the Resilient Massachusetts Action Team (RMAT) (the “MA Resilience Design Tool”),³ together with information on climate resilience strategies to be undertaken by the project. The EENF provided general descriptions of the Town’s environmental resources, such as wetlands, floodplains, drinking water protection supply areas, and rare species habitat; however, as noted, the EENF did not contain any information as to anticipated impacts to resource areas. As described in the Scope, the DEIR should provide a more detailed description of environmental resources within areas of proposed activities, and provide conceptual-level discussion of impacts and mitigation measures. One or more Notices of Project Change (NPCs) may be required to provide further disclosures of individual projects as they are implemented over the 20-year implementation period.

Comprehensive Wastewater Management Plan

Prior to preparing the Draft Recommended Plan described in the EENF, the Town completed a CWMP Needs Assessment in March 2022 and a CWMP Alternatives Analysis in December 2022; these documents were included as attachments to the EENF and summarized in the Draft Recommended Plan.

Needs Assessment

The Needs Assessment reviewed previous wastewater management, water quality studies, and planning studies prepared by the Town completed by the Town and local and regional organizations, including the Cape Cod Commission; reviewed the Town’s environmental and water resources,

³ https://resilientma.org/rmat_home/designstandards/

including groundwater conditions, soils, wetlands and floodplains, rare species habitat, and eelgrass; provided an overview of the Town's land uses, zoning, and private and public water and wastewater infrastructure; and provided a summary water quality data and analysis prepared by Barnstable County, the Cape Cod Commission, and the MEP. However, the analysis of nitrogen impacts and wastewater needs appears to be largely based on compliance with TMDLs (for the Megansett-Squeteague Harbor and Phinneys Harbor Watersheds) and biological impairments in water bodies identified in the MEP reports without consideration of projected growth/development identified in planning studies. Consistent with comments from MassDEP, additional information should be provided in the DEIR to support the findings of the Needs Assessment, including additional baseline information about the Town's wastewater system, and how the Needs Assessment considered the Town's wastewater needs under existing and future growth scenarios.

Alternatives Analysis

The Alternatives Analysis reviewed the use of Conventional Technologies and Non-Traditional Technologies/Policy-Oriented Strategies for nitrogen management in each of the watersheds. Conventional Technologies, which include centralized, decentralized, and regional wastewater treatment and collection systems, and GUIA, were further evaluated for implementation in each watershed.

The Non-Traditional Technologies/Policy-Oriented Strategies reviewed for further evaluation for each watershed included:

- System Alterations, including costal habitat restoration, and pond and estuary dredging
- On-Site Systems, including pilot and provisionally-approved IA systems, and Enhanced IA systems with greater nitrogen removal capability
- Decentralized Systems such as IA cluster systems that treat wastewater from more than one home or business
- Innovative Resource Management, such as aquaculture and permeable reactive barriers (PRBs)
- Policy-Oriented Strategies such as fertilizer management, stormwater Best Management Practices (BMPs), and measures to direct development away from sensitive receiving waters

The Non-Traditional Technologies/Policy-Oriented Strategies listed above were evaluated on the basis of nitrogen removal effectiveness, odor emissions, monitoring requirements, siting, maintenance and operations, GHG emissions, climate resiliency, public acceptance, and alignment with planning goals. Based on the evaluation rating system, Enhanced IA systems and stormwater BMPs were selected for further evaluation in each watershed, in addition to the Conventional Technologies listed above.

As noted, comments on the CWMP indicate that the Draft Recommended Plan does not identify clear strategies applicable to each watershed and phase. In addition, while the CWMP generally pursues a long-term (20 year) plan for reducing nitrogen loading, it is not clear why the Town is not pursuing the new Watershed Permitting pathway under 314 CMR 21.00 to achieve the same aims, particularly since the permitting pathway would provide relief for individual homeowners who otherwise would be required to complete septic system upgrades within 5 years of the applicable "NSA" designation. The DEIR should provide an explanation of why the Town has chosen to develop a long-term CWMP without pursuing the Watershed Permit, and expand its alternatives analysis to assess proposed strategies

and environmental impacts and mitigation in the event the Watershed Permit were pursued.

Draft Recommended Plan

The EENF reviewed the nitrogen removal strategies proposed in each watershed addressed in Phases 1 and 2 of the CWMP. It also reviewed the use of sewer systems in the Megansett-Squeteague Harbor and Buttermilk Bay Watersheds if the proposed GUIA systems do not achieve nitrogen removal goals or are otherwise selected for implementation by the Town. The Draft Recommended Plan does not clearly and consistently identify which nitrogen removal strategies are proposed to be implemented on what time frame, particularly with respect to the sewer options described below; for instance, it is unclear if the sewer options will be constructed in concert with GUIA and Enhanced IA strategies to address economic development, or if they serve as backup options to the individual homeowner deployment of GUIA systems. The DEIR should clarify the measures to be implemented in the Draft Recommended Plan and the circumstances under which other options may be substituted for the proposed measures. In addition, as noted by MassDEP, the use of some technologies may be restricted to Best Available Nitrogen Reducing Technology (BANRT), depending on the permitting pathway chosen by the Town; the DEIR should review the proposed GUIA and Enhanced IA measures in accordance with MassDEP's comment letter.

According to the EENF, implementation of the Draft Recommended Plan will achieve the nitrogen removal levels shown in Table 1 for the five watersheds addressed in Phases 1 and 2. However, as detailed below, the DEIR must provide documentation showing how the nitrogen goals were determined and how nitrogen removal estimates were calculated.

Table 1. Summary of Draft Recommended Plan Nitrogen Removals (Table 14 in the Draft Recommended Plan).

Embayment	Nitrogen Removal Goal (Kg-N/yr.)	Estimated Traditional Nitrogen Removal (kg N/yr.) ²	Preferred Nitrogen Removal Alternative	Estimated Non-Traditional Nitrogen Removal (kg N/yr.) ⁴	Total Estimated Removal
Megansett-Squeteague Harbor	564	504 - 631	GUIA	113	617 - 744
Phinneys Harbor	1,706	1,740 ³	Core Sewer	341	2,342 - 2,523
Buttermilk Bay ¹	1,402	588	GUIA with EIA	1,084	1,672
Pocasset Harbor	3,120	2,562	GUIA	624	3,186
Pocasset River	1,289	1,148	GUIA	258	1,406
Total	8,072	6,803 - 7,768		1,616	9,223 - 9,531

Nitrogen reduction strategies for each watershed addressed by the Draft Recommended Plan are discussed below:

- Phinneys Harbor

According to the EENF, 1,706 kilograms of nitrogen per year (kg-N/year) must be removed from the Phinneys Harbor Watershed to meet the TMDL. However, according to MassDEP and the Cape Cod

Commission, this value does not match the removal requirement identified in the TMDL Report (3,671 kg-N/year). The DEIR should explain how the nitrogen removal requirement used in the CWMP analysis was derived and clarify whether the proposed measures are intended to address nitrogen in the entire watershed or in one or more sub-embayments. The Draft Recommended Plan proposes construction of 12.6 miles of new sewer mains to provide sewer service to 436 parcels, upgrades to the existing Bourne Middle School WWTF, and implementation of stormwater BMPs as the nitrogen removal technologies for this watershed in Phase 1 (Years 1-10).

The Bourne Schools WWTF has a permitted capacity of 35,400 gpd; however, it only treats flows from the Peebles Elementary, Bourne Middle, and Bourne High Schools and typically treats 8,000 to 10,000 gpd. The facility includes primary treatment, flow equalization, rotating biological contactors (RBCs), a secondary clarifier, a tertiary denitrification filter, disinfection, and a subsurface discharge system beneath the school fields. The proposed sewerage in Phinneys Harbor will increase flow to the WWTF by 86,100 gpd, which exceeds the capacity of the facility. The WWTF will be upgraded with the addition of flow equalization tanks, addition of a treatment train, modification of the existing effluent discharge system to increase its capacity, and construction of a new effluent disposal facility at the WWTF site. As detailed below, the DEIR should include additional information about the potential design of the WWTF upgrades and the suitability of the site to accommodate the expanded facility.

- Megenasett-Squeteague Harbor

According to the EENF, Bourne contributes 39% of the nitrogen loads to Megansett-Squeteague Harbor and Falmouth contributes 61%. The nitrogen reduction target for Megansett-Squeteague Harbor is set at 564 kg-N/year, which appears to reflect Bourne's portion of the nitrogen loads in the watershed but is not clearly explained. The Draft Recommended Plan includes installation of GUIA septic systems to remove approximately 504–631 kg-N/year and implementation of stormwater BMPs to reduce an additional 113 kg-N/year, or a total nitrogen removal of approximately 617–744 kg-N/year in Phase 1 (Years 1-10). As requested by MassDEP, the DEIR should clarify how the nitrogen reduction target was derived from the TMDL Report issued for this watershed, including sub-embayments.

The EENF also described an option for nitrogen removal in which 150 parcels in Bourne's portion of the watershed would be connected to a sewer system. This scenario includes the construction of approximately 4.8 miles of sewer mains, a new satellite wastewater treatment facility with a capacity to treat an average flow of 30,440 gpd, and an effluent disposal system. The EENF identified a Town-owned parcel on Megansett Road as a potential site for the satellite facility. The DEIR should clarify the circumstances under which the Town would consider implementation of the sewer option in place of or in combination with the proposed GUIA systems.

- Buttermilk Bay

A TMDL has not been established for the Buttermilk Bay Watershed; however, it is impacted by nitrogen and the CWMP estimates that a removal of 25% of the existing nitrogen load is necessary to restore water quality. According to the EENF, GUIA systems alone cannot achieve the nitrogen reduction target in the Buttermilk Bay Watershed; therefore, the Draft Recommended Plan includes the use of 375 GUIA systems and a pilot project with 330 Enhanced IA systems as the nitrogen removal strategy in this watershed. The DEIR should provide additional details about how the Town determined

the existing nitrogen load, the nitrogen reduction goal, and the number and location of proposed GUIA and Enhanced IA systems.

Two sewerage options were also conceptually described in the Draft Recommended Plan for Buttermilk Bay. The first sewerage option involves expansion of the existing Buzzards Bay WWTF to accommodate 60,000 gpd from 330 residential parcels in the Buttermilk Bay watershed. The second option includes connecting a total of 778 parcels, including the 330 parcels identified in the first option, with a combined wastewater flow of 156,000 gpd. Wastewater collected under these sewerage options would be treated at either the Buzzards Bay WWTF in Bourne or the Wareham WWTF in Wareham. The Buzzards Bay WWTF has a permitted capacity of 100,000 gpd and a soil absorption effluent disposal system with a daily capacity of up to 335,000 gpd. According to the Draft Recommended Plan, the Buzzards Bay WWTF currently treats an average daily flow of 38,250 gpd, but the remaining capacity has been allocated for economic development; the DEIR should explain how growth scenarios were considered in the development of the Needs Assessment and Draft Recommended Plan. This option would require expansion of the Buzzards Bay WWTF. An Inter-Municipal Agreement (IMA) with the Town of Wareham allows the Town of Bourne to direct wastewater from up to 150 residences in Buzzards Bay Village to the Wareham WWTF. According to the Draft Recommended Plan, the Wareham WWTF has limited capacity and is unavailable to accept increased flows from Bourne.

- Pocasset Harbor and Pocasset River

TMDLs have not been established for either the Pocasset Harbor or Pocasset River Watersheds; however, they are impacted by nitrogen and the CWMP estimates that a removal of 25% of the existing nitrogen load in each watershed is necessary to restore water quality. The nitrogen reduction strategies proposed in the Draft Recommended Plan for these watersheds include installation of GUIA systems at 1,455 parcels in the Pocasset Harbor Watershed and at 645 parcels in the Pocasset River Watershed, and implementation of stormwater BMPs. As requested by MassDEP, the DEIR should include a technical memo that explains the technical basis or methodology used to estimate the total controllable nitrogen load.

Stormwater Management

The CWMP includes implementation of stormwater BMPs in each watershed to reduce nutrient levels in non-point source pollution. The BMPs include implementation of structural BMPs such as infiltration systems, bio-retention areas, and vegetated swales. The Town is also exploring the integration of innovative materials like biochar into stormwater systems to enhance nutrient removal. Before implementation, pilot studies will be conducted to assess the efficacy of these materials in nitrogen reduction.

The Draft Recommended Plan indicates that up to 20% of the nitrogen removal goal can be met by stormwater BMPs. According to MassDEP, under a Watershed Permit, stormwater BMPs are assumed to remove 25% of nitrogen, but higher removal rates can be attributed to the BMPs if supported by performance data. Outside of the Watershed Permit framework, the assumption does not apply, and the 25% removal rate is typically assumed when the total load attributed to stormwater is less than 5% of the total controllable nitrogen load in a watershed. As requested by MassDEP, the DEIR should clarify the nitrogen removal attributed to stormwater BMPs and provide supporting documentation.

Adaptive Management

The Draft Recommended Plan indicates that the Town intends to adopt an adaptive management approach to implementing the CWMP, including data collection, a quality control plan, and annual reporting. The Town will evaluate and implement cost-effective strategies, including Non-Traditional strategies, as they demonstrate feasibility and effectiveness and make changes to the selected nitrogen reduction strategies and implementation timeframe. The Draft Recommended Plan indicates that water quality monitoring data are available from Buzzards Bay Coalition, Buzzards Bay National Estuary Program, Cape Cod Commission, Bourne Health Department Beach Monitoring, Conservation Commission Studies, and Bourne Conservation Trust; however, additional details should be provided about the type of data collected by these organizations, any additional data to be collected by the Town, and how the data will be used to make adaptive management decisions. The DEIR should provide a more detailed adaptive management strategy, as detailed in the Scope.

Environmental Justice

The EENF indicated that the DGA for the project is one mile as measured from the perimeter of the Town boundary, and includes all of Bourne and sections of adjacent communities (Falmouth, Plymouth, Sandwich, and Wareham) within one mile of the Bourne municipal boundary. As noted above, project activities are proposed within one mile of four EJ populations, including two designated as Income (both in Bourne) and two designated as Minority and Income (in Bourne and Sandwich). Project activities are proposed within five miles of nine additional EJ populations designated as Minority; Income; and Minority and Income located in Falmouth, Mashpee, and Wareham. Within the census tracts containing the above EJ populations within 1 mile of the project site, no languages were identified as languages spoken by 5% or more of residents who also identify as not speaking English very well.

Effective January 1, 2022, all new projects in “Designated Geographic Areas” (“DGA,” as defined in 301 CMR 11.02, as amended) around EJ populations are subject to new requirements imposed by Chapter 8 of the Acts of 2021: An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy (the “Climate Roadmap Act”) and amended MEPA regulations at 301 CMR 11.00. Two related MEPA protocols – the MEPA Public Involvement Protocol for Environmental Justice Populations (the “MEPA EJ Public Involvement Protocol”) and MEPA Interim Protocol for Analysis of project Impacts on Environmental Justice Populations (the “MEPA Interim Protocol for Analysis of EJ Impacts”) – are also in effect for new projects filed on or after January 1, 2022. Under the new regulations and protocols, all projects located in a DGA around one or more EJ populations must take steps to enhance public involvement opportunities for EJ populations, and must submit analysis of impacts to such EJ populations in the form of an EIR.

Community Engagement

Since the commencement of work on the CWMP, the Town held seven meetings in 2021 about the Needs Assessment, seven meetings in 2022 during the preparation of the Alternatives Analysis, and three meetings in 2024 about the Draft Recommended Plan. These included meetings of the Select Board, Wastewater Advisory Committee, and public informational sessions and workshops, and all

meetings were recorded and available for viewing on the Town's website. The Town also established a CWMP page on its website to provide notices of meetings, meeting minutes, and project updates.⁴ Prior to filing the EENF, the Town prepared an EJ Screening Form which was distributed to a list of community-based organizations (CBOs) and tribes/indigenous organizations (the "EJ Reference List") provided by the MEPA Office. According to the EENF, the Town has not received any questions or inquiries about the project in response to the distribution of the EJ Screening Form. Upon filing of the EENF, a MEPA remote consultation session was held at 6:00 PM on Tuesday January 28, 2025. Notice of the consultation session was circulated to the EJ Reference List and posted on the Town's website. The consultation session was attended by five members of the Select Board and 11 residents. According to the EENF, the Town will continue to hold public meetings about the project, which will be announced on the Town's website. The DEIR should outline a more robust public engagement plan that includes direct outreach to community organizations in affected EJ populations.

Analysis of Impacts

Project activities (construction of GUIA) are proposed within one EJ population in the Pocasset Harbor and Pocasset River Basins and within one mile of the other EJ populations in the DGA. The area proposed to be sewerred in the Phinneys Harbor Basin appears to be just outside of an EJ population, and is within one mile of an EJ population; this should be confirmed in the DEIR. The proposed location of the WWTF is approximately 0.6 miles west of the nearest census tract containing EJ populations.

The EENF included a baseline assessment of any existing "unfair or inequitable Environmental Burden and related public health consequences" impacting the identified EJ Populations in accordance with 301 CMR 11.07(6)(n)(1) and the MEPA Interim Protocol for Analysis of EJ Impacts. The baseline assessment included a review of the data provided by the Department of Public Health (DPH) EJ Tool applicable to the DGA regarding "vulnerable health EJ criteria"; this term is defined in the DPH EJ Tool to include any one of four environmentally related health indicators that are measured to be 110% above statewide rates based on a five-year rolling average. According to the DPH EJ Tool, none of the census tracts containing EJ populations within the DGA, nor the Town of Sandwich at the community level, meet any of the vulnerable health EJ criteria; however, the Town of Bourne meets the criterion for Heart Attack Hospitalizations.

According to the EENF, sources of potential pollution existing within EJ populations in the DGA, based on data available in the DPH EJ Tool, include:

- Major Air and Waste Facilities: 17
- M.G.L. c. 21E sites: 12
- "Tier II" toxics use reporting facilities: 59
- MassDEP sites with Activity and Use Limitations (AULs): 5
- Groundwater Discharge Permits: 14
- Public Water Suppliers: 6
- Wastewater Treatment Plants: 3
- Underground storage tanks (USTs): 37
- EPA Toxic Release Inventory (TRI) sites: 3
- MassDOT Roadways: Routes 3, 3A, 6, 6A, 25, 28, 28A, 130, and 151

⁴ <https://www.townofbourne.com/comprehensive-wastewater-management-plan-cwmp>

- Regional Transportation Service: 34 bus stops operated by the Cape Cod Regional Transit Authority and 11 bus stops operated by the Greater Attleboro-Taunton Regional Transit Authority
- Energy Infrastructure: 3 power plants and 14 transmission lines

According to the output report from the MA Resilience Design Tool included in the EENF, the project areas have high exposure to sea level rise/storm surge, urban and riverine flooding due to extreme precipitation and extreme heat. EJ populations within the DGA are likely also exposed to these climate risks.

While the above indicators appear to show elevated public health risks within the DGA, the EENF asserts that the project will not adversely affect EJ populations because it will improve water quality throughout Bourne, including within EJ populations. As noted below, the DEIR should review the potential for proposed structures to exacerbate storm damage under existing and projected climate conditions. It should provide additional information on potential impacts to EJ populations associated with construction of the project and operation of the WWTF, including storage, handling, and disposal of sludge generated the facility, including odor, noise, and truck traffic associated with sludge disposal. The DEIR should also indicate how GUIA and I/A strategies, which will be implemented by and through individual homeowners, may affect EJ populations, specifically, whether the Town will impose deadlines on completion of septic system upgrades and whether financial constraints will be considered in assessing compliance by the homeowner.

Climate Change

Adaptation and Resiliency

Effective October 1, 2021, all MEPA projects are required to submit an output report from the MA Resilience Design Tool to assess the climate risks of the project. The EENF included an output report that evaluated climate risks to project components associated with the Phinneys Harbor sewer area, including 12 miles of sewer mains, up to three pump stations, and improvements to the Bourne Schools WWTF; output reports for areas where other project components are proposed should be provided in the DEIR. Based on the location of their locations, these project components have a “High” exposure rating for sea level rise/storm surge, riverine and urban flooding due to extreme precipitation, and extreme heat. Based on the expected 40-year life span and self-assessed criticality of the proposed sewer system, pump station, and WWTF upgrades, the MA Resilience Design Tool recommends a planning horizon of 2070 and a return period associated with a 200-year storm event when designing these project components for sea level rise/storm surge, and a planning horizon of 2070 and a return period associated with a 50-year (2% annual chance) storm with respect to extreme precipitation. The output report also recommends planning for the 90th percentile for applicable extreme heat parameters for these project components. The EENF did not review climate risks to proposed structures or potential resiliency measures that may be incorporated into the project because specific locations or designs of project components have not been determined.

Plans included in the EENF show that some of the sewer mains, and potentially pump stations, to be constructed in the Phinneys Harbor Watershed are within or adjacent to coastal floodplains, including VE Zones, while other areas to be sewered and the Bourne Schools WWTF are one-half mile or more

away from the coastline. As noted by CZM, low-lying areas proposed to be sewered, including areas along Old Dam Road, Shore Road, and North Beach Avenue, are particularly vulnerable to coastal flooding and erosion, and may be regularly inundated after one foot of sea level rise. Furthermore, Bourne is susceptible to hurricanes, which occur less frequently than the 1% annual chance storm, but have a greater impact. As detailed in the Scope, the DEIR should review the vulnerability of proposed structures to coastal storm damage under existing and future conditions, and evaluate alternative design and location of project components that may minimize these risks.

Greenhouse Gas Emissions

The existing Bourne Schools WWTF building is approximately 4,250-sf in size and uses a 125-kilowatt (kW) generator fueled by natural gas. The EENF assumed that the size of the building will increase proportionally to the proposed 250% increase in flow to the WWTF; therefore, the building is expected to be expanded to approximately 10,500 sf and is likely to continue to be powered by a natural gas generator.

According to the Department of Energy Resources (DOER), the Town has adopted the Stretch Energy Code provisions of the Building Code. Therefore, any new building, addition, or renovation which is heated and/or cooled must be constructed in accordance with the Stretch Code whether it is intended for human occupancy/use or not. The Stretch Code includes rigorous requirements for high-efficiency building envelope design, ventilation energy recovery, thermal bridge mitigation, and low air infiltration. These requirements are designed to reduce space heating demands and enable ready use of electric air source heat pump space heating so that gas (or other fossil fuel) space heating can be avoided. As detailed below, the DEIR should provide conceptual-level information about potential GHG mitigation measures that can be incorporated into the design of the WWTF expansion.

Construction Period

All construction and demolition activities should be managed in accordance with applicable MassDEP's regulations regarding Air Pollution Control (310 CMR 7.01, 7.09-7.10), and Solid Waste Facilities (310 CMR 16.00 and 310 CMR 19.00, including the waste ban provision at 310 CMR 19.017). The project should include measures to reduce construction period impacts (e.g., noise, dust, odor, solid waste management) and emissions of air pollutants from equipment, including anti-idling measures in accordance with the Air Quality regulations (310 CMR 7.11). I encourage the Town to require that its contractors use construction equipment with engines manufactured to Tier 4 federal emission standards, or select project contractors that have installed retrofit emissions control devices or vehicles that use alternative fuels to reduce emissions of volatile organic compounds (VOCs), carbon monoxide (CO) and particulate matter (PM) from diesel-powered equipment. Off-road vehicles are required to use ultra-low sulfur diesel fuel (ULSD). If oil and/or hazardous materials are found during construction, the City should notify MassDEP in accordance with the Massachusetts Contingency Plan (310 CMR 40.00). All construction activities should be undertaken in compliance with the conditions of all State and local permits. Solid waste generated during demolition and construction should be reused on site to the extent feasible. The Town should consult MassDEP's comment letter for details regarding construction-period standards and permitting requirements.

Conclusion

As detailed above, MassDEP, CZM, and the Cape Cod Commission have requested additional information to clarify the nitrogen control measures proposed to be implemented in the CWMP, the analyses that support selected of the Draft Recommended Plan, the timeline on which project phases will be implemented, the permitting and regulatory framework under which the Town proposes to complete this complex, long-term project, and the project's vulnerability to climate risks that may affect the long-term performance of this critical infrastructure. I also received comments from over 20 residents, many of which requested that the Town continue to evaluate widespread sewerage rather than implementation of GUIA systems and consider applying for a Watershed Permit and expressed concern about the impacts on homeowners of implementation of GUIA within a short timeframe. Commenters also provided specific information about water quality data and analysis, and recommendations for involving more residents in the discussion about the CWMP. Comments from MassDEP, CZM, and the Cape Cod Commission provide substantive guidance to the Town to follow in providing the clarifying information and technical analyses required in the DEIR. I strongly encourage the Town to consult with MassDEP and other Agencies prior to completing the DEIR.

SCOPE

General

The DEIR should be prepared in accordance with Section 11.07 of the MEPA regulations for outline and content, and it should provide the information and analyses required in this Scope. It should demonstrate that the Town will pursue all feasible measures to avoid, minimize and mitigate Damage to the Environment to the maximum extent feasible.

Project Description and Permitting

The DEIR should provide a more detailed and consistent description of the nutrient reduction measures proposed in the CWMP, and to the extent information is available, impacts and mitigation measures, as set forth in this Scope. It should provide conceptual plans depicting existing and proposed conditions where construction is proposed, including proposed above- and below-ground structures and any associated resiliency or other mitigation measures. To the extent changes to the project are made between the ENF and DEIR, the DEIR should identify such changes and describe any changes to environmental impacts that will result from the changes. It should identify environmental and historical resources, including but not limited to, wetlands, floodplains, rare species habitat, water supply protection areas, and Areas of Critical Environmental Concern (ACECs), and provide estimates of impacts associated with construction and operation of project components. The DEIR should identify and describe state, federal and local permitting and review requirements associated with the project, provide an update on the status of each of these pending actions, analyze applicable statutory and regulatory standards and requirements, and provide a discussion of the project's consistency with those standards.

The Town has indicated that it has not decided to seek a MassDEP Watershed Permit. However,

the Draft Recommended Plan in some cases appears to adopt processes and regulatory standards associated with the Watershed Permit process. The DEIR should include a review of the various permitting pathways available to the Town through which the CWMP can be implemented and clearly articulate how the Draft Recommended Plan is consistent with the selected permit pathway. If the Town does not choose to pursue a Watershed Permit, the DEIR should indicate in more detail (given that the CWMP proposes a 20-year implementation plan, similar to what would be approved under a Watershed Permit) how implementation through GUIA/IAs construction by individual homeowners will be undertaken, including procedures for providing notice to homeowners of regulatory obligations and deadlines, as well as any consideration of financial constraints and impacts to EJ populations.

The DEIR should include a revised Draft Recommended Plan with revisions and additional information and analyses as required below. The DEIR should include appendices with technical memos in support of the Draft Recommended Plan, and provide summaries of the data and analyses within the text of the filing.

Comprehensive Wastewater Management Plan (CWMP)

The DEIR should clearly articulate and describe the nitrogen reduction measures proposed for the Draft Recommended Plan, including the specific measures that are proposed for each identified watershed, which measures are proposed as primary strategies and which are backup options in the event primary strategies are unsuccessful, and how each measure was determined to achieve the level of nitrogen reduction identified in Table 1. The DEIR should include the information and analyses identified in comment letters submitted by MassDEP, CZM, and the Cape Cod Commission, which are incorporated by reference herein. Key issues identified in the comment letters include:

- Terminology recommended by MassDEP should be consistently used in the DEIR in order to clarify references to regulatory requirements, approval status and performance of nitrogen removal strategies, and implementation of the CWMP
- The data and methodology for determining existing nitrogen loads and nitrogen removal goals in each watershed, including water use data, projections of economic development, modeling assumptions and the use of data from TMDL Reports and MEP studies, should be provided in Technical Memos attached to the DEIR and summarized within the text of the DEIR
- The permitting pathway to be used by the Town should be confirmed, and the selection of proposed nitrogen removal measures and proposed implementation of the CWMP should be reviewed in the context of the appropriate permitting requirements
- Additional information should be provided to document the nitrogen removal effectiveness of proposed GUIA and Enhanced IA measures assumed in the CWMP, and how this data was considered in evaluating alternatives and selecting proposed nitrogen removal measures
- Greater clarity should be provided regarding the measures proposed to be implemented in the Draft Recommended Plan and the circumstances under which other options, particularly the sewer options identified in the Draft Recommended Plan, may be substituted for the proposed measures
- The Town's approach to adaptive management must be better defined in more detail, including details on monitoring, data collection and analysis, assessment and reporting performance of nitrogen removal measures, and a procedure for deciding when modifications to the CWMP should be made

- Additional information is needed to support the findings of the Needs Assessment, including additional baseline information about the Town's wastewater system, and how the Needs Assessment considered the Town's wastewater needs under existing and future growth scenarios, the need to address emerging contaminants of concern such as per- and polyfluoroalkyl substances (PFAS), and remediation of recreational, water quality, and ecological health issues in groundwater or surface water

As noted above, comments residents of Bourne encourage the Town to pursue a Watershed Permit to provide more flexibility with the Town's approach to nitrogen removal and implementation schedule, and to implement widespread sewerage. The Town should expand the Alternatives Analysis section presented within the CWMP to describe an alternative that pursues nitrogen reduction through Watershed Permit Alternative and a Sewer Alternative and compare the strategies that would be pursued under that option to those in the Preferred Alternative as described in the current Draft Recommended Plan. Given that both the CWMP as proposed and Watershed Permit pathway allows for a 20-year long-term planning process, the Town should discuss which permitting pathway the Town proposes to pursue and why that alternative was selected. As discussed above, the Town should clearly describe how the GUIA/IA strategies will be implemented by and through homeowners, and whether the Town will play a role in overseeing such strategies.

Environmental Justice

The Town should describe in the DEIR a public engagement strategy for continuing its public outreach efforts during the design, permitting, and construction of the Draft and Final Recommended Plan, including direct outreach to residents and community organizations within EJ populations. The DEIR should identify public engagement efforts conducted by the Town after the filing of this EENF, including measures to inform EJ populations about the project through meetings, informal events within the communities, and distribution of written materials. The DEIR should include a supplemental analysis of the impacts of the project including, climate risks, to EJ populations within the DGA and identify proposed mitigation measures. As noted below, potential public health impacts of the project should be assessed, including those associated with operation of the proposed WWTF and daily truck trips needed to haul the sludge to a disposal facility, and review potential routes of trucks. These impacts should also be assessed as they may affect the identified EJ populations. The DEIR should also indicate how GUIA and I/A strategies, which will be implemented by and through individual homeowners, may affect EJ populations, specifically, whether the Town will impose deadlines on completion of septic system upgrades and whether financial constraints will be considered in assessing compliance by the homeowner.

Public Health

The DEIR should include a separate section on "Public Health," and discuss any known or reasonably foreseeable public health consequences that may result from the environmental impacts of the project. Publicly available data, including through the DPH EJ Tool, should be surveyed to assess the public health conditions in the immediate vicinity of the project site, in accordance with 301 CMR 11.07(6)(g)10. Any project impacts that could materially exacerbate such conditions should be analyzed. The DEIR should contain a specific discussion of effluent discharge standards and how the project intends to meet or exceed them in order to protect public water supplies. It should review the potential

public health risks that will be remediated by the removal of excess nitrogen in groundwater and surface waters.

The DEIR should review potential impacts to public health associated with operation of the proposed WWTF, including noise, odor, and drying, handling, storage and transport of sludge. The DEIR should estimate the volume of sludge produced, the number of daily truck trips needed to haul the sludge to a disposal facility, and review potential routes of trucks.

Wetlands and Stormwater

The DEIR should overlay areas where GUIA implementation and sewerage, including pump station and treatment facility upgrades, are proposed on maps of wetland resource areas and floodplains, and estimate potential impacts to these resources. It should include a review of how proposed structures can be constructed in accordance with all applicable standards of the Wetlands Regulations. It should include a conceptual-level review of stormwater management system improvements that may be constructed in connection with expansion of the Bourne Schools WWTF, including the potential to size the system to accommodate precipitation from future storm events.

Rare Species

The DEIR should include an overlay of proposed activities on maps of Priority Habitat and discuss potential impacts to rare species. The Town should consult with NHESP to determine whether any approvals pursuant to the Massachusetts Endangered Species Act (MESA; M.G.L. c. 131A) may be required (and who would seek such approvals) and which activities may qualify for exemptions in the MESA Regulations (321 CMR 10.00) applicable to construction of infrastructure within paved areas and areas within 10 feet of existing paved roadways. To the extent information is available, the DEIR should indicate whether any “take” of rare species may be possible given construction activities currently anticipated.

Climate Change

The DEIR should provide output reports from the MA Resilience Design Tool for all areas where project activities are proposed, review climate risks affecting those areas, and identify resiliency measures that will be incorporated into the project design. The DEIR should provide a vulnerability assessment for proposed infrastructure and review alternative designs and locations that minimize potential flood and erosion hazards to the project, as detailed in CZM’s comment letter. In preparing this analysis, the Town should review sea level rise data provided in the Massachusetts Sea Level Rise and Coastal Flooding Viewer⁵, the Massachusetts Climate Change Assessment⁶, and Massachusetts Climate Change Clearinghouse⁷ for up-to-date sea level rise information. The vulnerability assessment should also be based on a review of erosion data available through the Massachusetts Coastal Erosion Viewer⁸

⁵ <https://experience.arcgis.com/experience/23d861b79aed450eb8972013dd28579b/page/Sea-Level-Rise/>

⁶ <https://www.mass.gov/doc/2022-massachusetts-climate-change-assessment-december-2022-volume-ii-appendix-b/download>

⁷ <https://resilient.mass.gov/home.html>

⁸ <https://hub.arcgis.com/documents/664e5557213e47a3ad97ec32d968361c/explore>

and other sources identified in CZM's comment letter. The DEIR should evaluate potential increased development in storm-prone areas due to the expansion of wastewater infrastructure into these areas.

The DEIR should review potential measures to minimize GHG emissions from operation of the WWTF, including the use of a high-performance building envelope and electrical heating, cooling, and hot water systems in any conditioned spaces in the WWTF. It should review potential design measures that could minimize energy use and GHG emissions of treatment processes, such as high-efficiency pumps and variable flow drives (VFD).

Future MEPA Review

As noted above, the EENF included conceptual-level information about the project's environmental impacts, the locations of proposed structures, and the WWTF due to the preliminary nature of the design of the Draft Recommended Plan. To the extent that the DEIR cannot provide more details regarding the project's environmental impacts, it should provide a timeline for advancing the design of the project to a level where impacts can be better understood, identify future permits that will be sought when the design has been finalized, and propose a procedure for future MEPA review of project activities that differ significantly in design or environmental impact as proposed in the DEIR, such as the filing of one or more NPCs or development of a Special Review Procedure. I encourage the Town to consult with the MEPA Office prior to filing the DEIR.

Mitigation and Draft Section 61 Findings

The DEIR should include a separate chapter summarizing all proposed mitigation measures including construction-period measures. This chapter should also include a comprehensive list of all commitments made by the Town to avoid, minimize and mitigate the environmental and related public health impacts of the project, and should include a separate section outlining mitigation commitments relative to EJ populations. The filing should contain clear commitments to implement these mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and contain a schedule for implementation. The list of commitments should be provided in a tabular format organized by subject matter (traffic, water/wastewater, environmental justice, etc.) and identify the Agency Action or Permit associated with each category of impact. Draft Section 61 Findings should be separately included for each Agency Action to be taken on the project. The DEIR should clearly indicate which mitigation measures will be constructed or implemented based upon project phasing to ensure that adequate measures are in place to mitigate impacts associated with each development phase.

Responses to Comments

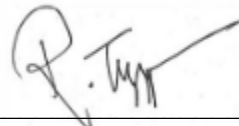
The DEIR should contain a copy of this Certificate and a copy of each comment letter received. The DEIR should contain a direct response to the scope items in this Certificate and to comments received on the EENF. To ensure that the issues raised by commenters are addressed, the DEIR should also include direct responses to comments to the extent that they are within MEPA jurisdiction. This directive is not intended, and shall not be construed, to enlarge the scope of the DEIR beyond what has been expressly identified in this certificate.

Circulation

The Town should circulate the DEIR to each Person or Agency who previously commented on the EENF, each Agency from which the Project will seek Permits, Land Transfers or Financial Assistance, and to any other Agency or Person identified in the Scope. The Town may circulate copies of the DEIR to commenters other than Agencies in a digital format (e.g., CD-ROM, USB drive) or post to an online website. However, the Town should make available a reasonable number of hard copies to accommodate those without convenient access to a computer to be distributed upon request on a first come, first served basis. A copy of the DEIR should be made available for review in the Bourne Public Library.

March 3, 2025

Date



Rebecca L. Tepper

Comments received:

01/12/2025	Edward Baker
01/20/2025	Jed Johnson
01/21/2025	Jed Johnson
01/24/2025	Robert Farrow
01/30/2025	Bernadette Sullivan Ericson
02/02/2025	Cape Cod Commission
02/05/2025	Alexander Klein
02/05/2025	George Seaver and Alan Kuzirian
02/06/2025	Margaret Reali
02/07/2025	Robert Handy
02/10/2025	Roy Heffernan
02/11/2025	M. Gwynn
02/16/2025	Andrea Gordon
02/16/2025	Helen Chin Schlichte
02/18/2025	Association to Preserve Cape Cod
02/19/2025	Sharon Seaver
02/20/2025	Linda Carpenter
02/20/2025	Wendy Welsh
02/21/2025	Iris Clearwater
02/22/2025	John Woodley
02/22/2025	Wesley Lipchak
02/22/2025	William Schwab
02/23/2025	Stephen F Mealy
02/24/2025	Buzzards Bay Coalition
02/24/2025	Massachusetts Office of Coastal Zone Management (CZM)
02/24/2025	Massachusetts Department of Environmental Protection (MassDEP)/ Southeast Regional Office (SERO)

02/24/2025 Edward Baker
02/24/2025 Richard York
02/24/2025 William F. Grant
02/28/2025 Department of Energy Resources (DOER)

RLT/AJS/ajs

Comment Details

16910

1-12-2025

2-7-2025

Alexander Strysky, (857)408-6957, alexander.strysky@mass.gov

Edward

Baker

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ebakershops05@icloud.com

480 Wings Neck Road

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MASSACHUSETTS

02559

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Individual

Opened

Topic: Bourne Comprehensive Wastewater Management Plan

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Although the plan proposed by the Town of Bourne may meet the intent to reduce nitrogen loading in Buzzards Bay estuaries, the plan is flawed in its over-reliance of onsite General Use Innovative/Alternative and Enhanced Innovative/Alternative septic systems (GUIA/EIA septic systems). The plan assumes that each system will be installed and operated as designed to achieve maximum effectiveness - this is not a given - and for a subset of homeowners, it will be a challenge to get them to operate/maintain their systems as required. Significant areas of Monument Beach, Mashnee Island, Pocasset Harbor, Pocasset River, Cataumet, and Squeteague Harbor include dense communities of small lots (<4,000-8,000 square feet). Requiring each homeowner to install a GUIA/EIA septic system puts a significant burden on each homeowner to install and maintain each system and on the Town Board of Health to monitor the thousands of septic systems that will be installed. If the Town of Bourne were to install centralized sanitary sewer collection systems with individual treatment plants (package sanitary treatment plants) in areas of dense housing communities, then the Town Health Department would have a significantly reduced monitoring load. Further, centralized wastewater treatment systems have the ability to treat nitrate contamination to a lower concentration than GUIA/EIA septic systems. Further still, centralized wastewater treatment systems can be more easily upgraded (and at significantly lower cost to the residents of the Town of Bourne) to address any new wastewater treatment needs in the future (such as for any emerging contaminants) as more and more people move to the Cape full time.

To better protect the environment, please require the Town of Bourne to install centralized sewer collection systems in dense housing community areas.

<https://eeaonline.eea.state.ma.us/EEA/PublicComment/UI/reviewcomment/05f75553-fa66-46df-8d51-30f5b1e79073>

Update Status

Status

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Comment Details

EEA #/MEPA ID

16910

Comments Submit Date

1-20-2025

Certificate Action Date

2-7-2025

Reviewer

Alexander Strysky, (857)408-6957, alexander.strysky@mass.gov

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Status

Accepted

Comment Title or Subject

Topic: Bourne CWMP Comments

Comments

The town should file for the permit so the deployment can be stretched over 20 years and also so the management and reporting responsibility is not solely dropped on the homeowners. In addition, by filing for the permit, subsidy and loan options become available. Without the permit homeowners are on the hook for the full amount.

Doing it all in the first 5 years is risky. The technologies are not proven and as new information comes in, improvements can be deployed. Over 20 years there will be newer, cheaper and more effective technologies available. If all the systems are done in the first phase this opportunity is taken away.

There is also a pricing risk. By accelerating all 285 (or more) into the first five years there will be a surge in demand for both equipment and contractor services that will likely drive-up cost. It is likely the deployments will be delayed until the end of the period because only homeowners that are required to get a new permit will proceed. This means the final year could see a huge demand.

There is a significant burden on the homeowner for contracted monitoring and reporting that is legally required when the town does not apply for the permit. What is the penalty if a homeowner willingly or mistakenly does not maintain a monitoring contract?

The capital cost of the GUIA system is significantly under reported. This number uses \$42,000 as the average cost however this is no longer the case. At the workshop in October EP stated “the market has shifted” when this topic was discussed. In addition, a data point of \$130,00 for a 4-bedroom new construction was cited. Based on these comments it seems like the capital cost estimate for the GUIA systems need to be doubled, at least.

Based on the very high cost of GUIA systems and the inherent risk of a new technology and surging demand, the sewer alternative needs strong consideration for the Megansett/Squeteague watershed.

In addition to Megansett/Squeteague, other larger watersheds in Bourne and Falmouth will require upgrade to GUIA systems. Where are we going to find enough contractors to do all this work? A significant potential flaw in this plan is the lack of analysis on the supply of contractor services and the ability of the vendors to supply enough material to execute the plan.

In years 4 and 5 there most of the systems will get deployed because home owners will wait as long as possible. Has the town estimated the cost of additional inspection and support services for all these projects?

Attachments

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Comment Details

EEA #/MEPA ID

16910

Comments Submit Date

1-21-2025

Certificate Action Date

2-7-2025

Reviewer

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Status

Opened

Comment Title or Subject

Topic: Bourne CWMP

Comments



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 Paragraph ▼









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Comment Details

EEA #/MEPA ID

16910

Comments Submit Date

1-24-2025

Certificate Action Date

2-7-2025

Reviewer

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Comment Title or Subject

Topic: Bourne Comprehensive Wastewater Management Plan-Cataumet/Megansett

Comments

The Cataumet area is among the first for planned actions with a short (5 year) time frame in the preferred option. We were informed in a town meeting that technology is moving rapidly for onsite waste management. Title V already imposes substantial burdens and the new nitrogen sensitive area regulations impose further burdens with estimates for a combined Title V and nitrogen system well above \$50,000. The existing plan to replace all systems in the Cataumet area within 5 years leads to an unrealistic number, (about 230 I believe) of upgrades annually. This does not seem feasible given supply and other conditions. There is also debate about point estimates of nitrogen levels in the Cataumet area. If there is a trend (as with climate change but here for nitrogen), the plan should be forward looking and take into account any recent trend. In short, I/we are opposed to the current preferred management choice for Cataumet/Megansett area and suggest options that are more flexible, allow more time, and take into consideration the trend of nitrogen measurements.

Attachments

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Status

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From: [BERNADETTE ERICSON](#)
To: [Strysky, Alexander \(EEA\)](#)
Cc: [Helen Gordon](#)
Subject: Bourne Comprehensive Wastewater Management Plan - Comments
Date: Thursday, January 30, 2025 12:26:09 PM

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Hello -

Please submit my comments regarding the Megansett Squeteague watershed.

Since the best, quality-driven long-term solution is to install sewers, a watershed permit should be obtained. My understanding is it would allow 20 years for implementation of a sewer system.

Since Falmouth is planning for sewers, develop a knowledge-based partnership with North Falmouth to work toward a plan and implementation. Understanding of access to government funding, including 0% or low interest loans will be required.

I appreciate any help you can provide to enable my opinion to be heard. Please let me know if there are any suggestions for improvement of my comments.

Cheers,

Bernadette Sullivan Ericson

508-564-6836; cell: 617-974-0275

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BARNSTABLE, MASSACHUSETTS 02630

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CAPE COD
COMMISSION

Via Email

February 10, 2025

Rebecca Tepper, Secretary of Energy and Environmental Affairs
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900, Boston, MA 02114

Re: Expanded Environmental Notification Form - (CCC File No. 25003)
Bourne Comprehensive Wastewater Management Plan

Dear Secretary Tepper:

The Cape Cod Commission is pleased to see the Town of Bourne engaged in the planning process to manage wastewater and address water quality impairment in the town's coastal embayments. The Bourne Comprehensive Wastewater Management Plan has been submitted as an Expanded Environmental Notification Form, requesting review via Single EIR or Special Review Procedure. The plan includes background on the scientific study of five coastal embayments within Bourne, a summary of actions completed to date, and a presentation of the town's recommended plan for each embayment with initial assessments of the plan's potential environmental and climate impacts.

The Bourne CWMP includes evaluations and proposed plans for Megansett-Squeteague Harbor, Pocasset Harbor, Pocasset River, Phinneys Harbor, and Buttermilk Bay. As the plan is designed to address the areas of town that contribute to nitrogen sensitive embayments, the Bourne CWMP will be reviewed for consistency with the Cape Cod Area Wide Water Quality Management Plan (208 Plan). Review for consistency with the 208 Plan is the Cape Cod Commission's exclusive means of reviewing municipal wastewater or water quality plans aimed at managing excess nutrient loads in watersheds.

Commission staff have identified several additions and clarifications during initial review that are needed to facilitate the MEPA review process, as well as 208 consistency review. The plan presents



existing and target nitrogen loads for each of the embayments, as well as the resulting nitrogen removal goals. The Massachusetts Estuaries Project (MEP) report and Total Maximum Daily Load (TMDL) for Phinney's Harbor (the watershed for which is 100% within the Town of Bourne) show a nitrogen removal requirement of 3,671 kg/yr. The CWMP shows a removal goal of 1,706 kg/yr, with an accompanying sewer plan designed to meet that goal. The discrepancy between the nitrogen removal requirement identified in the TMDL and MEP report and the goal included in the CWMP should be explained or corrected, and the sewer plan should be modified as necessary to meet an updated nitrogen removal goal for Phinneys Harbor. The plan also proposes nitrogen removals by stormwater BMPs throughout all of the watersheds located within the town. Removals from stormwater BMPs are estimated in the plan as 20% of controllable nitrogen, but should instead be based on the estimated stormwater nitrogen load from the TMDL, MEP report or other watershed specific modeling. In Phinneys Harbor, for example, the 341 kg N/yr estimated stormwater removal represents 81% of the 417 kg N/yr stormwater nitrogen load in Phinneys Harbor per the MEP report.

Outside Phinneys Harbor, the plan relies heavily on the use of innovative/alternative (I/A) septic systems. It would be helpful if the report identified the assumptions used to calculate nitrogen removal by parcel (including assumed flow rates and effluent nitrogen) along with the projected overall removals. Currently, this information is available in an Attachment, but presenting this information in the CWMP text will provide greater transparency, especially as future improvements to treatment technologies or updated modeling may require changes in the size or scope of I/A septic system implementation areas. The CWMP also presents multiple timelines for implementation of the I/A septic system in each watershed. The Town should clarify in the CWMP where they plan to apply for watershed permits, and the associated timelines for installation of I/A systems where that approach is being used. For watersheds relying on I/A systems to meet nutrient removal goals, additional information should be provided regarding how the town will monitor individual I/A system performance, and what mechanism(s) will be used to achieve (and fund, if applicable) I/A system installations according to the applicable schedule

The CWMP should also provide additional information regarding how the plan addresses buildout that has occurred since the publication of applicable MEP reports, and how nitrogen loads from future growth will be handled through local regulation and/or adaptive management actions. The 208 Plan and Watershed Permit Regulations both require consideration of estimated new growth and the corresponding nitrogen removal that will be required. Commission staff suggest that actual growth that has occurred since the embayments were studied be tabulated separately from estimated future growth to ease future comparisons between estimated growth rates and actual realized growth.

To facilitate review for consistency with the 208 Plan, Commission staff also suggest adding a

description of how plan elements address 208 consistency criteria prior to requesting 208 Consistency Review.

Thank you for the opportunity to comment on the above-referenced EENF. Commission staff are available to discuss any questions you might have about these comments. Following completion of the MEPA process, Commission staff look forward to working with the town to review the CWMP for consistency with the 208 Plan.

Sincerely,

Kristy Senatori
Executive Director

Cc: Project File

Marlene McCollem, Bourne Town Administrator, via email

Kaitlyn Shea, Bourne Director of Health, via email

Stephen Mealy, Bourne Cape Cod Commission Representative, via email

Harold Mitchell, Cape Cod Commission Chair, via email

Helen Gordon, Apex Companies, via email



Comment Details

EEA #/MEPA ID

16910

Comments Submit Date

2-5-2025

Certificate Action Date

2-24-2025

Reviewer

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02532

Organization

Self

Affiliation Description

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Status

Opened

Comment Title or Subject

Topic: Comments on Bourne Comprehensive Wastewater Management Plan

Comments

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1. Improve the Bourne CWMP and FAQs on the town's website with the following suggestions: (a) the CWMP contains very detailed information helpful for people to become informed, however, because it is so detailed (by necessity) some very important information is lost. Most people will likely not wade through the details and therefore not make an informed decision at Town Meeting; (b) succinctly describe the options available for each of the impacted watersheds with associated costs; (c) for each option, outline the results should Town Meeting not approve any option (is each resident left on their own?; could the state impose a court order if Town Meeting does not approve the report?; what if the option to sewer Phinney's Harbor is not feasible, what is plan B?); (d) clearly outline options available to the town and residents for financing the costs.
2. Better publicize and hold more public meetings to educate town residents on the CWMP. It is highly likely that many residents will first learn and hear of the CWMP at town meeting when the report is up for approval. When uninformed residents hear the estimated costs of \$10's of millions, it may very likely result in non-approval of the CWMP.
3. Develop lessons learned from Cape towns that have already gone through the process of developing and getting a CWMP approved. Implement these lessons and any best practices.
4. I recommend that the Selectboard and Board of Health (BOH) expeditiously develop policies that address how the CWMP intertwines with Title V requirements. Residents will benefit if there is predictability and certainty with BOH policies and regs. For example, (a) how would the BOH treat properties not connected to a future sewer but desires to do so?; (b) if traditional systems are acceptable until 2030, what happens beyond that date? All I/A systems?; (c) what entity has the enforcement role and what are the ramifications/penalties?
5. I urge the Selectboard to adopt the Watershed permit option for all impacted watersheds.

Attachments

Update Status

Status

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Presentation by ENRG* to MA Environmental Affairs on Meg/SQT MEP Assessment

Abstract

An analysis of the Massachusetts Estuary Project's assessment of the effects of nitrate on Megansett and Squeteague Harbors is presented. The degree of impairment, the data and references used in this assessment, the data available but not used and the specific septic load of estuary nitrate that MEP uses is discussed, as well as the post-assessment decrease in nitrate. This investigation finds that septic nitrate is not important in the Megansett/Squeteague system.

- 1 (a) From the 2015 MEP Plan stating "Slight Impairment" on page 9 and frequently throughout their Plan. Specifically, "At present" [2015] Meg/SQT is "only slightly beyond its nitrogen threshold". Consequently, a slightly lower NO₃ could therefore remove Meg/SQT from the "nitrogen-Impaired" to the "Diminimus" status. For example, since 2015 atmospheric nitrate deposition decreased by 25% (Lloret, 2022, fig 2b), visibility has increased by 50% (Seaver, 2025) and "significant reductions in nitrogen" have occurred (BBC, pg 1, 2022). [Attachment 1 and 6]
- (b) From the "Meg/SQT Assessment" on page 5 of the MEP:

"Assessment based upon available water quality monitoring data...".

Data also available (but not used) were and are in the following published scientific papers on Buzzards Bay estuary NO₃:

 - i. Bowen, et al., 2007. *Review of Land-Sea Coupling of N into New England Estuaries*. Applied Geochemistry.
 - ii. Seaver, G. and A Kuzirian, 2007. *NO₃ Migration Through Goundwater, Estuaries and Bays*. JCR.
 - iii. Seaver, G., 2010: *Estuary Response to Abrupt Increase of Groundwater NO₃ Input*. Applied Geochemistry.
 - iv. Seaver, G., 2012: *Long-Term NO₃ Transport Through Watersheds to Estuaries on Cape Cod: Climate and Transient Scales*. In Jordan, Ed., *Estuaries: Classification, ecology and Human Impacts*. Nova Sciences, p. 115-136.
 - v. Seaver, G. 2019: *Winter's Role in Annual NO₃ Regulation in Buzzards Bay Estuaries*. RSMS.

* Estuary Nitrate Research Group

- vi. Lloret, J., et al., 2022: *Decadal Trajectories of Land-Sea Couplings: Nitrogen Loads*. Estuarine, Coastal and Shelf Sciences.
- vii. Seaver, G. and A. Kuzirian, 2024: *Estuary NO3 Sources and Trends in Buzzards Bay*. JCR. (These References are Available online)

(c) The NO3 Data Source for the Meg/SQT MEP:

The MEP relies on the Buzzards Bay Coalition data, which is only taken in the summer. As a result, they use their summer Dissolved Organic Nitrogen value for total “N” (pg 9), rather than the total Dissolved Inorganic Nitrogen from the winter data. DON is frequently 10X larger than DIN (see Lloret, figure 7), and is a function of sunlight as well as nitrate. All of the above Seaver references take nitrate data year-round including the winter season, which allows for the calculation of trends, summer-to-winter transfer and winter NO3 export. [BBC 2022 report]

2. The Role of Eelgrass

The MEP on page 9 states that “eelgrass is critical habitat that structures the productivity and resource quality of the entire system”. It is hard to believe that a plant confined to part of an estuary’s coast would have such a widespread consequence.

3. The Septic Loads to Squeteague.

From the MEP plan, “..nitrogen loads of wastewater represents 59% of watershed load to Squeteague Harbor” (page 5). Both Bowen et al. (2007) and Seaver and Kuzirian (2024) show no penetration of septic NO3 into SQT. Specifically, Bowen shows that DIN is proportional to people density on the watershed above a fixed level, but for a density below 2.5 people/hectare (1/acre) it is not a function of population (see figure 4a of Bowen). The watershed density of Bourne’s Buzzards Bay estuaries is 0.5 people/acre, well below the Bowen cut-off and reflects the low density on the JBCC 9000 acres upgradient of these estuaries (see Seaver [figure 2](#)). However, if dense, “affordable housing” continues, such as that proposed for the 600 acres on JBCC, Bourne likely would pass the Bowen cut-off and septic NO3 would begin to be a factor in SQT. [Attachments 2 and 3]

Further, Seaver and Kuzirian in their published [figure 5a](#) (2024) show Squeteague and SHC NO3 from 1988 to 2024. Over this 35-year period Bourne’s population increased by 48%. If septic NO3 was reaching the estuaries, it would reflect this population increase over these 35 years;

however, the baseline NO₃ in 1988 is .04 mg/L, as it is in 2024 and at many points in between. The periodic large excursions of NO₃ seen are from known sources, which are not detected in summer-only measurements, where the NO₃ is taken up by plankton. We also see since 2004 a declining trend-line in Squeteague NO₃ of 63%, the result of declining atmospheric deposition and the decline in spot sources of NO₃ from Sqt's watershed. [Attachment 4]

4. Eelgrass Shading

The MEP Plan cites the loss of eelgrass, caused by cloudy water blocking the sun (and this caused by "slightly higher N"), as the reason for classifying Meg/SQT as "N impaired". However, since 2020 the measured visibility in SQT (Seaver, unpublished figure) has increased by 50%, boat waterline growth has significantly decreased and the BBCoalition has reported "the expansion of eelgrass beds". [Attachment 5]

5. Post-2015 Changes - Buzzards Bay Coalition 2022 Report.

The Buzzards Bay Coalition stated in their bi-annual 2022 Report, what the ENRG has stated herein based upon the evidence:

"The bottom line: the improved state of Buzzards Bay score reflects significant reductions in nitrogen. Six years on [since 2015] the data on nitrogen pollution is even better than expected...recovering to levels of 1995...[also] in expansion of eelgrass beds and a Bay scallop harvest not seen in more than a decade (BBC, page 1, 2022). [Attachment 6]

Further, this report, in their "Nitrogen Effect" score, gives Megansett Hbr an 83%, number 7 of 91 bays and an improvement of 11% since 2015. Sqt Hbr is at 58%, an improvement of 1% and both are in their fair to excellent category.

The BBC 2022 report claims on page 1 that "the Bay - up 4 degrees F since the mid 1990s..", (and the CWMP has a section on Climate Change). However, from 1988 to 2024 published Sqt temperature taken 4 times a year (each season) shows a slight trendline decline of -0.507 C. SHC also shows a slightly negative temperature change of -0.290 C (Seaver and Kuzirian, 2024). Their +4 degrees increase fits in with their statement that "Climate Change [is] the driving factor behind the Bay declines over the past 30 years" (page 1), along with the inclusion of sections in the CWMP on "Climate Change" and "Environment Justice". [Attachment 7]

Finally, the BBC attributes the closures of shell fishing from bacteria, in part, to Climate Change temperature increase and sewage (page 4). They do not mention geese feces (or our "Goosebusters" program to combat it), where there is a direct cause-and-effect to closures from geese that come up on the beach in the morning before the test are taken and the beach is closed to shellfishing that day, and sometimes the camp and swimming as well. Recently, since we have had an energetic Goosebusters program Sqt has not been closed, where other harbors nearby have been.

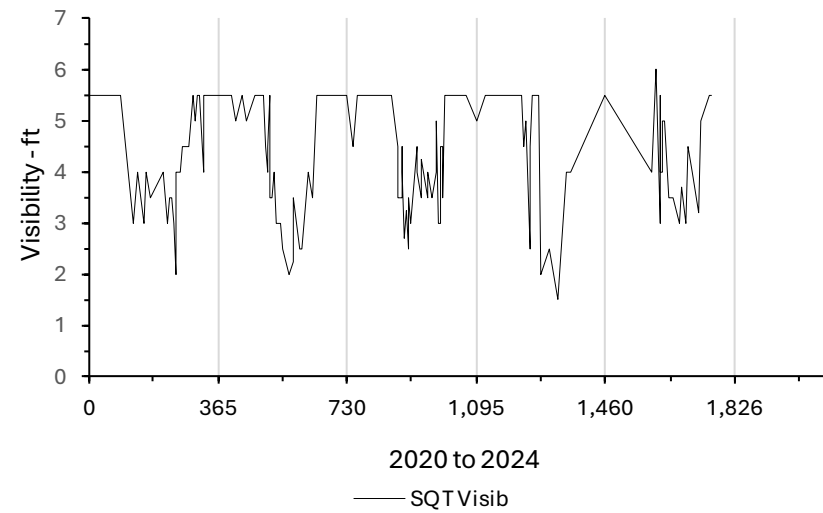
In conclusion, if the State and Bourne continue on with this plan, the citizens of Bourne will be left with \$10's of millions in costs, great disruption of the environment and a permanent maintenance burden and its cost ...and little or no effect on estuary nitrate.

George Seaver, Ph.D.

Alan Kuzirian, Ph.D.

ENRG, Cataumet, February 4, 2025

SQT Visibility 2020 to 2024



THE BOTTOM LINE

Improved 2022 State of Buzzards Bay score reflects significant reductions in nitrogen and toxic pollution, as well as new challenges facing the Bay due to climate change.

Since the beginning of our State of the Bay reports in 2003, we have documented troubling trends in the health of Buzzards Bay. That year's assessment yielded a score of 48 out of 100. Since then, the score has been stalled at 45 for the last three reports. In all those cases, the story behind that flat line remained the same: slow improvements in things like toxics and bacteria pollution were being eliminated by the impact of expanding nitrogen pollution.

But then in 2015, nitrogen pollution stopped getting worse, and we stopped losing eelgrass beds as well. We hoped that this encouraging pause was signaling that we may have reached the floor on nitrogen pollution getting worse in the Bay.



Pollution Reductions Are Driving Improvements ...

Six years on, the data on nitrogen pollution is even better than expected with the state of pollution in 2018 recovering to levels not seen since 1995 (before declining slightly in the next three years). This is not just great news for improved water clarity and healthy oxygen levels. The conditions created by reduced nitrogen pollution can also be seen in expansion of eelgrass beds throughout the Bay and even a bay scallop harvest in 2018-18 on a scale not seen in more than a decade.

No other form of pollution does more harm to Buzzards Bay and all its harbors and coves than nitrogen, and its 4-point improvement in this State of the Bay should be celebrated. It is the result of years of local efforts to clean up septic systems and old sewer plants as well as state and federal gains in reducing the amount of nitrogen that falls on the Bay from air pollution.

The other pollution reduction to be celebrated is the continued decline of toxics in the Bay. A 3-point improvement in the amount of toxins detected in the Bay's delicate blue mussel populations is a result of the ongoing cleanup of legacy industrial pollution and modern restrictions on the use of toxics in agricultural, industrial and home products.

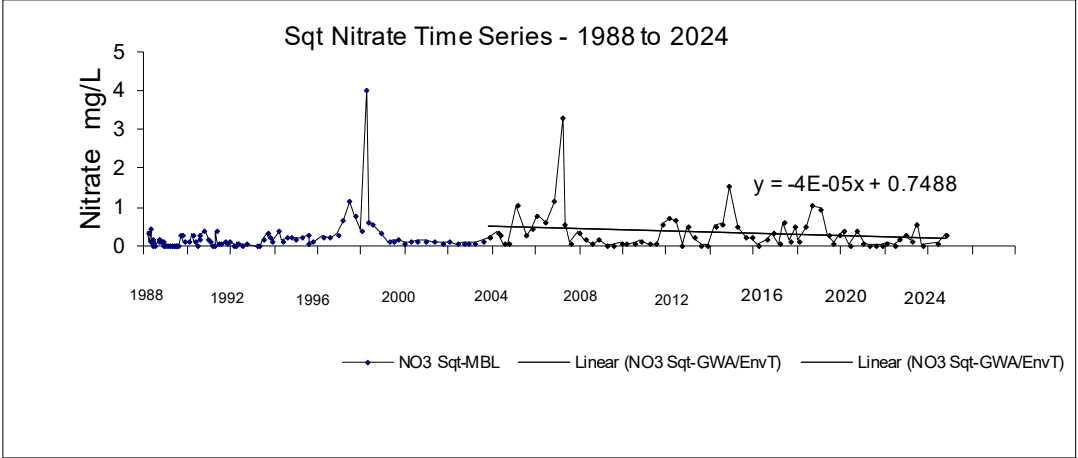
... but Climate Change is Moving the Goal Post.

Just when it looks like we're beginning to address nitrogen pollution — the driving factor behind Bay declines over the past 30 years — **climate change is moving the goal post and changing the Bay restoration landscape.** Two factors that were not even recognized in the data when we started these assessments in 2003 are taking over as the greatest drivers of Bay decline — warmer water and rising sea levels.

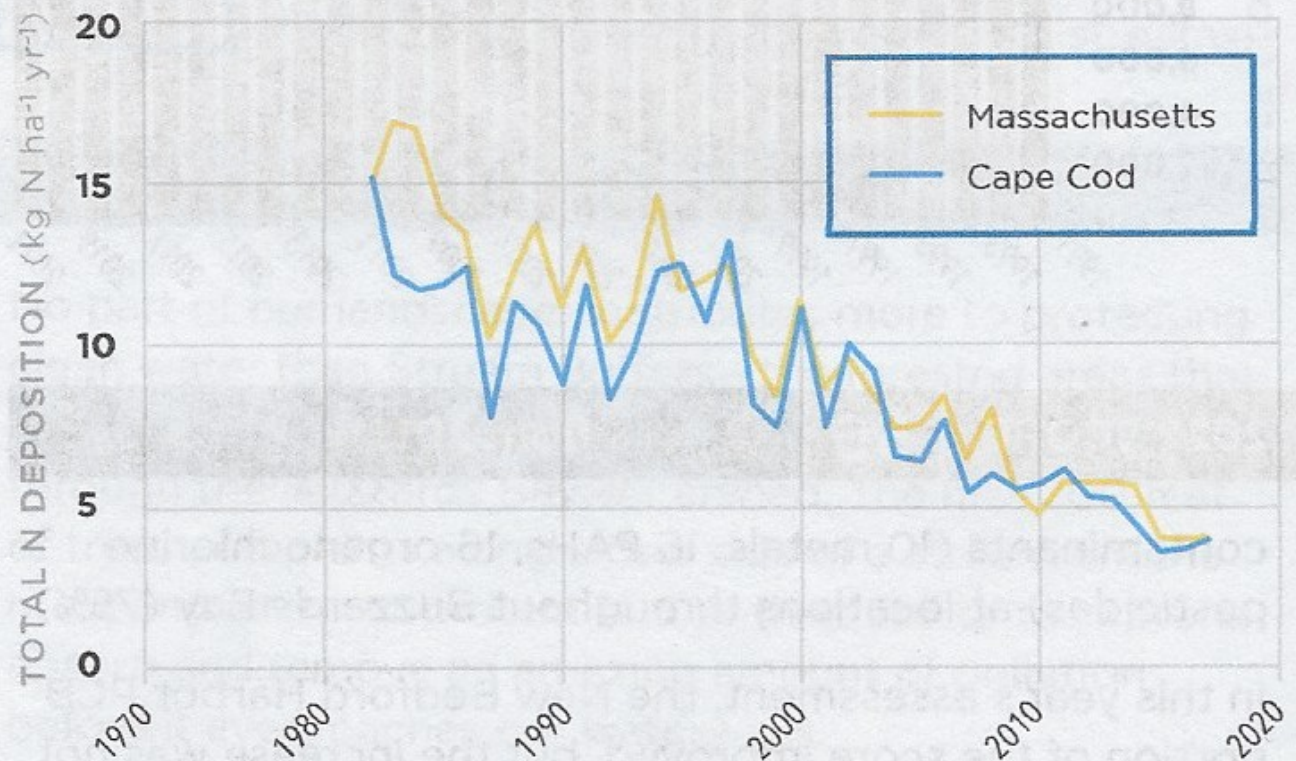
Warmer water in the Bay — up 4 degrees Fahrenheit since the mid 1990s — now allows bacteria to persist longer leading to shellfish bed and beach closures, and extends the season of biological activity in the Bay encouraging algae to bloom on lower levels of nitrogen. In effect, we need to remove more nitrogen in a warmer Bay to see the same water quality improvements.

And rising sea levels are proving to be the Achilles heel of the Bay's vital salt marshes, which are eroding and drowning under higher tides and higher base sea level. This is the most disappointing new challenge identified in these data.

A final point. As a regional assessment, the State of Buzzards Bay scores can mask local variations in the data. Not all corners of the Bay improved and others, like the Westport River, saw exceptional gains.



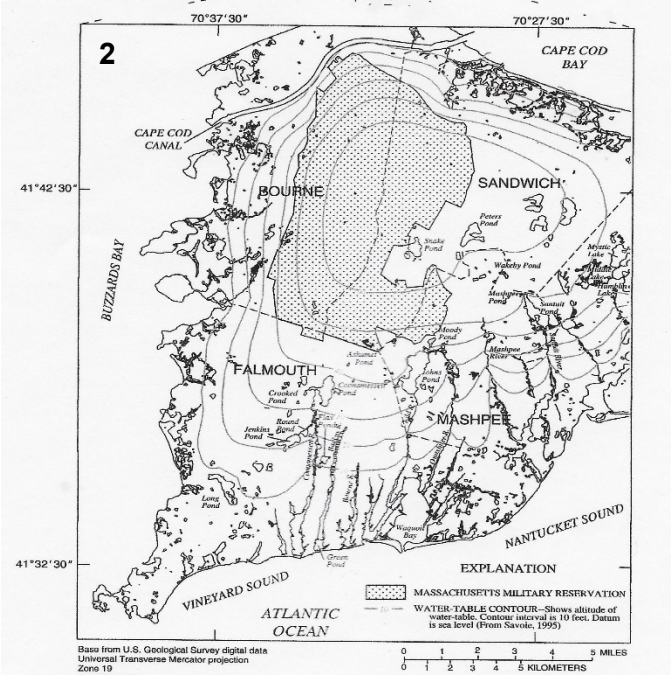
- DECLINES IN NITROGEN IN AIR POLLUTION

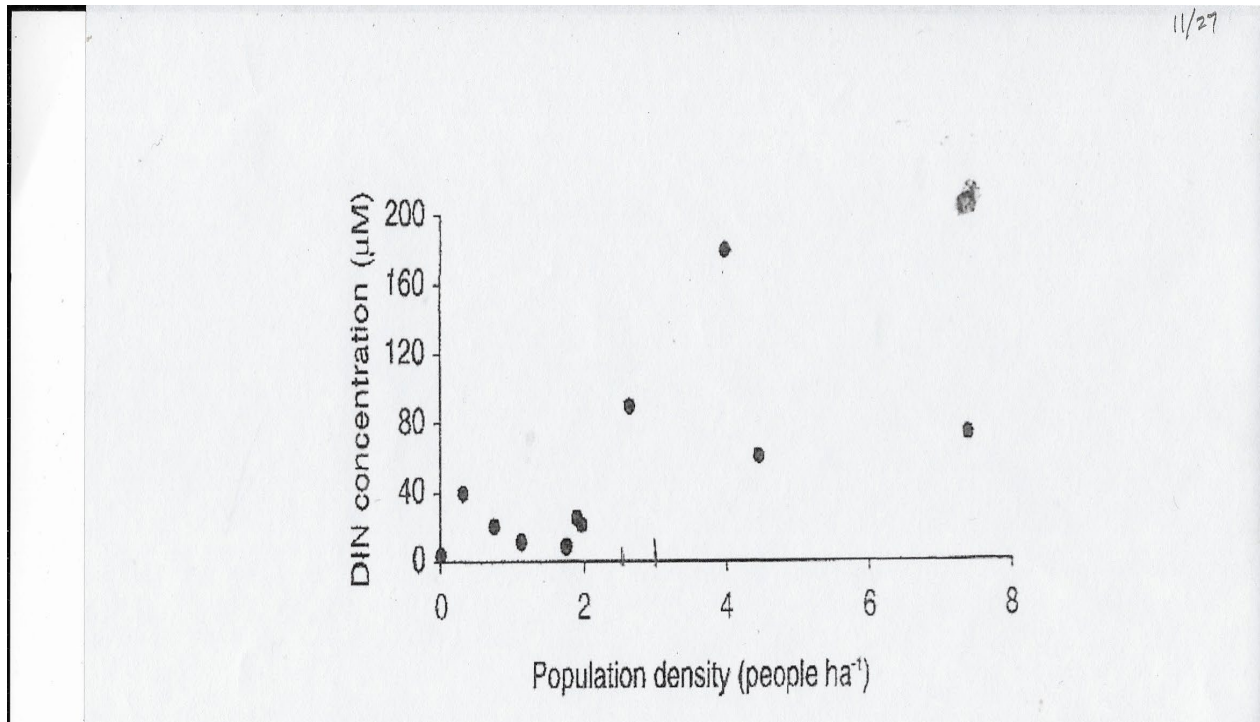


There is an up to 10-year lag between reductions in emissions from the source and improved water quality in nearby waterways. Adapted from Lloret et al. 2022

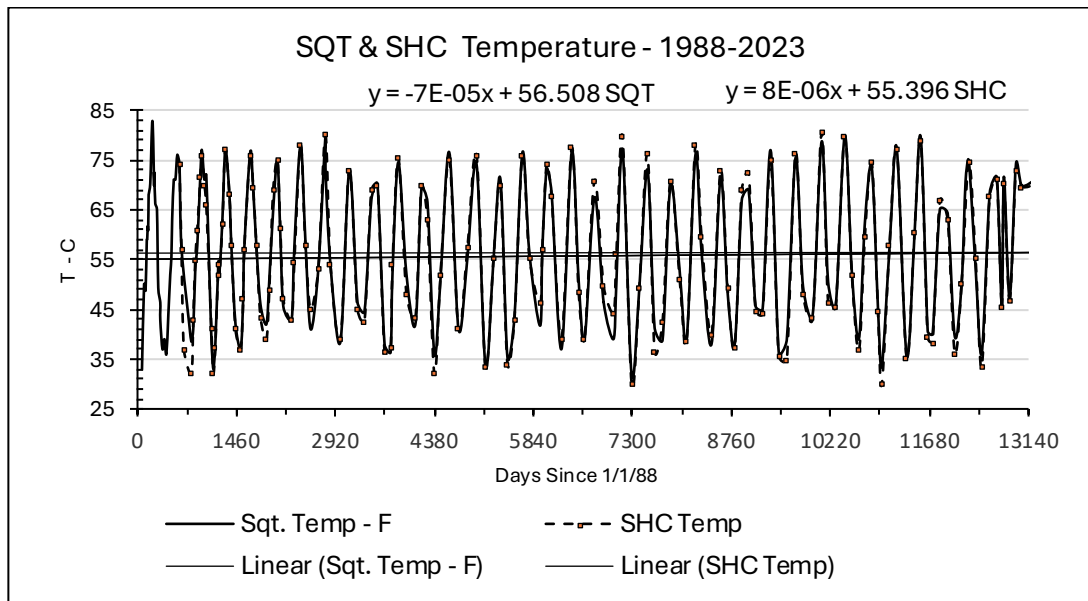
(doi.org/10.1016/j.ecss.2022.108057)

Fig 2.





Concntration of disolved inorganic N in groundwater from several Cape Cod watersheds versus population density on the watwershed. Each data poingt is an average of many observatipons. Data from Kroeger (2003) and Bowen, et al., (2007).



Comment Details

EEA #/MEPA ID

16910

Comments Submit Date

2-6-2025

Certificate Action Date

2-24-2025

Reviewer

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Affiliation Description

Individual

Status

Opened

Comment Title or Subject

Topic: Bourne Wastewater Management Plan

Comments

Attachments

Update Status

Status

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EEA #/MEPA ID

16910

Comments Submit Date

2-7-2025

Certificate Action Date

2-24-2025

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Affiliation Description

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Status

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Comment Title or Subject
Topic: Nitrogen Discharge

I was unable to find any reference to the Nitrogen discharge level of the current school treatment plant or projected discharge from the proposed expansion. Is there any data for historic levels of nitrogen in ground water, surface water, estuaries and bays?

Attachments

Update Status

Status

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From: [Helen Gordon](#)
To: [Strysky, Alexander \(EEA\)](#)
Cc: [Roy Heffernan](#); [Mabel Smith](#)
Subject: Bourne CWMP - Public Comment RE: [EXT] Megansett and Squeteague watershed
Date: Monday, February 10, 2025 4:19:01 PM

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Alex

Please see the comment received following the CWMP MEPA site visit. Could you include in the filing.

Helen

-----Original Message-----

From: Roy Heffernan <royheffernan@gmail.com>
Sent: Monday, February 10, 2025 3:55 PM
To: Helen Gordon <Helen.Gordon@apexc.com>; Mabel Smith <mabel.smith@apexc.com>
Subject: [EXT] Megansett and Squeteague watershed

[Some people who received this message don't often get email from royheffernan@gmail.com. Learn why this is important at https://urldefense.com/v3/_https://aka.ms/LearnAboutSenderIdentification_?!CPANwP4y!V!s9xWsHNEAeq8eexmCOdI603X2XPU05LAodzIwmNfoj6kBV6HGPkfhlsXcsY1S5S4UJLmQdls0o_dTkDNsbIplISiuTUT5BS_]

CAUTION

Helen and Mabel,
If our home has a Title 5 compliant system, upgraded around 2010, does this nitrogen mitigation issue apply to us? If yes, what will the upgrading of an existing Title 5 complaint system cost (versus the \$42k and \$200 per month)?
Thanks, Roy

Roy Heffernan
40 Squeteague Harbor Rd
Cataumet, MA 02534

This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Comment Details

EEA #/MEPA ID

16910

Comments Submit Date

2-11-2025

Certificate Action Date

2-24-2025

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Affiliation Description

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Comment Title or Subject

Topic: I will have to sell my house!

Comments

Bourne should apply for a Watershed Permit for these two watersheds...that would allow everyone to install a new system over a period of 20 years. I will not have the funds to replace our system by 2030 and sadly will have to sell my house.

Attachments

Update Status

Status

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SUBMIT

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BACK TO SEARCH RESULTS

Comment Details

EEA #/MEPA ID

16910

Comments Submit Date

2-16-2025

Certificate Action Date

2-24-2025

Reviewer

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Organization

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Affiliation Description

Individual

Status

Opened

Comment Title or Subject

Topic: Bourne Comprehensive Wastewater Management Plan

Comments

My home at 34 Ocean Ave. is in the Megansett-Squeteague Harbor Watershed area. The Town of Bourne proposal EEA 16910 dated January 8th has not had an extensive and thorough public town hearing before it was sent as an official document to MEPA. This public meeting has to be done before Town Meeting because of the cost implications and cost burdens on each of us. Many of us are learning about the proposal for the first time. Personally, I object to Option 1 the decentralized (individual parcel) implementation plan primarily because of the associated costs: the initial cost of updating my septic system and the estimated monthly cost. The 3rd alternative, Option 3 - a site for a Wastewater Treatment Facility seems the most fair and practical choice to implement. I would like to see a side by side "cost analysis" of all the options the Town of Bourne proposes. Furthermore, why can't the cost of any further WWTF be borne by all property tax payers in Bourne, as part of our water sewer bills? I respectfully request a Town of Bourne public meeting for clarification of its Proposal, on what basis it arrived at its decisions, and how it can satisfy the many questions our community has regarding this major change. I appreciate all the time and labor that was spent by those who prepared the Proposal and understand that we need an environmentally sound plan but it also has to be affordable. Thank you. Andrea Gordon.

Attachments

Update Status

Status

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SUBMIT

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Comment Details

16910

2-16-2025

2-24-2025

Alexander Strysky, (857)408-6957, alexander.strysky@mass.gov

Helen Chin

Schlichte

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helen.chinschlichte@hcsboston.org

47 Pasture Road

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MASSACHUSETTS

02534

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Opened

Topic: Watershed Permit

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 Paragraph ▼
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I wish to encourage the Town of Bourne to file for a watershed permit so that those of us who wish to participate in the sewer option have the opportunity to do so.

Update Status

Opened ▼

SUBMIT

Share Comment

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Andrew Gottlieb
Executive Director

February 18, 2025

BOARD OF DIRECTORS

Steven Koppel
President

Elysse Magnotto-Cleary
Vice President

Taryn Wilson
Treasurer

Jack Looney
Clerk

Rebecca Tepper, Secretary
Executive Office of Energy and Environmental Affairs
Attention: Alexander Strysky
MEPA Office
100 Cambridge St., Suite 900
Boston, MA 02114

**RE: Bourne Comprehensive Wastewater Management Plan
Expanded Environmental Notification Form, EEA# 16910**

Dear Secretary Tepper:

John Carroll

Bob Ciolek

Tom Cohn

John Cumbler

Jamie Demas

Tony Gallo

Meredith Harris

DeeDee Holt

Pat Hughes

Molly Karlson

Rick O'Connor

Kris Ramsay

Dottie Smith

Marcie Truesdale

The Association to Preserve Cape Cod (APCC) has reviewed the Bourne Comprehensive Wastewater Management Plan Expanded Environmental Notification Form (EENF) and provides the following comments.

Founded in 1968, APCC is the Cape region's leading nonprofit environmental advocacy and education organization, working for the adoption of laws, policies and programs that protect, preserve and restore Cape Cod's natural resources. APCC focuses our efforts on the protection of groundwater, surface water, and wetland resources, preservation of open space, the promotion of responsible, planned growth and the achievement of an environmental ethic.

APCC is pleased that the town of Bourne has submitted a Comprehensive Wastewater Management Plan (CWMP) to MEPA for review. That said, the plan's reliance on on-site septic systems will burden residents with high costs while failing to reduce nitrogen loads sufficiently to restore embayment water quality. The proposed plan, no matter how well-intentioned, does not provide the required assurances that the plan can achieve water quality requirements, nor does it lay out a more conventional collection and treatment strategy if reliance on the alternative septic plan fails to attain needed nutrient reduction requirements.

482 Main Street | Dennis, MA 02638
Tel: 508-619-3185 | info@apcc.org | www.apcc.org

APCC shares and echo's the concerns expressed by the Cape Cod Commission regarding the derivation and presentation of the nitrogen loading requirement for the estuaries and the demonstration of how the proposed strategy is supposed to achieve the necessary reductions. It is APCC's view that an onsite system-only strategy cannot meet the required reductions in nitrogen and that the proposed CWMP fails to provide a clear demonstration that the needed reductions can be achieved.

The proposed CWMP effectively transfers the town's obligation to provide a publicly funded solution to water quality directly to the individual homeowners by requiring homeowners to fully self-fund septic upgrades. The net effect of following this path will be to hold the municipal budget harmless while imposing high septic upgrade costs on individuals for an approach that will fail to meet the necessary water quality standards. This is simply not good environmental or public policy. It runs counter to the approach of direct municipal involvement encouraged by the Commonwealth, which is being uniformly pursued by the rest of the towns on Cape Cod.

Thank you for the opportunity to comment on the above-referenced EENF. APCC is ready to work with your staff and the town of Bourne on a revised CWMP that achieves the water quality objectives we all share at a reasonable and affordable cost to the residents of Bourne.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Andrew Gottlieb', with a long horizontal flourish extending to the right.

Andrew Gottlieb

cc: Maureen McCollem, Bourne



Comment Details

EEA #/MEPA ID

16910

Comments Submit Date

2-19-2025

Certificate Action Date

2-24-2025

Reviewer

Alexander Strysky, (857)408-6957, alexander.strysky@mass.gov

First Name

Sharon

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Seaver

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Affiliation Description

Individual

Status

Opened

Comment Title or Subject

Topic: Town of Bourne Wastewater Treatment - EEA#16910

Comments

<https://eeaonline.eea.state.ma.us/EEA/PublicComment/UI/reviewcomment/97fcffe0-350b-42bd-9a38-b2b601ac767e>

Attachments

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Status

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Comment Details

EEA #/MEPA ID

16910

Comments Submit Date

2-20-2025

Certificate Action Date

2-24-2025

Reviewer

Alexander Strysky, (857)408-6957, alexander.strysky@mass.gov

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Affiliation Description

Individual

Status

Opened

Comment Title or Subject

Topic: Bourne CWMP EEA # 16910

Comments

I don't understand the science, but I'm confused by the differing opinions on why Squeteague Harbor is included in this project. The cost impact on residents is huge. I think it should be the town of Bourne's responsibility to cover a broad portion of this installation cost for each and every one family impacted. Also to explain why there is a monthly cost estimated to be \$200. This will surely force people to sell. Most important is the health of Squeteague, but the cost should be shared among all resident who have access to this beautiful harbor. Also, the 5-year time frame is too short. The other two options extend over 20 years. Option 2 should be explained to residents and considered. No way should there be an option 3 with a water treatment plant in the middle of our quaint village. Thank you for your consideration.

Attachments

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Comment Details

16910

2-20-2025

2-24-2025

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Wendy

Welsh

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6 Meadowlark Lane

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MASSACHUSETTS

02562

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Individual

Opened

Topic: Water Quality

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This proposed plan does not provide assurance that it can achieve the water quality that's required. It fails to remove enough nitrogen to restore the town's estuaries. It also creates an undo burden on homeowners! The plan should not be approved as submitted.....Thank you

Update Status

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Comment Details

EEA #/MEPA ID

16910

Comments Submit Date

2-21-2025

Certificate Action Date

2-24-2025

Reviewer

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Opened

Comment Title or Subject

Topic: Do not approve the Bourne Comprehensive Wastewater Management Plan as submitted.

Comments

Attachments

Update Status

Status

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▼

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Comment Details

EEA #/MEPA ID

16910

Comments Submit Date

2-22-2025

Certificate Action Date

2-24-2025

Reviewer

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Affiliation Description

Individual

Status

Opened

Comment Title or Subject

Topic: Bourne CWMP

Comments

The proposed CWMP effectively transfers the town's obligation to provide a publicly funded solution to water quality directly to the individual homeowners by requiring homeowners to fully self-fund septic upgrades. The net effect of following this path will be to hold the municipal budget harmless while imposing high septic upgrade costs on individuals for an approach that will fail to meet the necessary water quality standards. This is simply not good environmental or public policy. It runs counter to the approach of direct municipal involvement encouraged by the Commonwealth, which is being uniformly pursued by the rest of the towns on Cape Cod.

Attachments

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Introduction

There are inconsistencies within the Bourne Comprehensive Wastewater Management Plan (CWMP) Application that should be resolved before approval, or approval should be withheld. The comments herein are mainly intended to address the Plan's impact on residential properties in the Megansett-Squeteague watershed.

Conflict Regarding Stated Implementation Schedule

The Town of Bourne Selectboard has stated (public hearing, 7-Jan-2025) that this is a 20-year Plan that will "live and breathe" during its lifetime. However, Section 4.1, pg.9 states, "Given Bourne's preference for a decentralized-focused approach to alternatives, the watershed wide implementation will be based on the specifications of the MassDEP General Use Approved I/A onsite systems."

Table 7: Title 5 Default GUIA Implementation Timeline, on pg.12 of the Plan shows that, for properties in the Megansett-Squeteague Harbor and Phinney's Harbor watersheds, the Plans only has a 5-year horizon, not 20. Those properties are intended to implement GUIAs by mid-2030, losing the opportunity to take advantage of improved technologies or solution approaches that may become available for the remainder of the Town in the subsequent 15 years.

On the other hand, **Table 8: Watershed Permit Example GUIA Implementation Timeline**, (pg.13) would put these two embayments on the same footing as the remainder of the Town. However, "As of November 2024, the Select Board has not filed a Notice of Intent to pursue a Watershed Permit for either of... Megansett-Squeteague Harbor and Phinney's Harbor." (Section 1, pg.1)

I suggest that a watershed permit for both Harbors would ultimately yield better water quality results for them.

Conflicting Nitrogen-Reducing Need Assessments

According to the MEPA Application, Appendix 13, Phase I Needs Analysis, pg.46 states, "MassDEP released its Final 2018/2020 Integrated List of Waters (Integrated Report) in February 2022 and represents the most recent update on the status of Massachusetts' waters." Pg.48 goes on to say that Squeteague Harbor has yet to be assigned a Nutrient/Eutrophication TMDL by the MassDEP.

But pg. 50 of Appendix 13 states that a Total-Nitrogen TMDL has been assigned to the joint Megansett-Squeteague Harbor based on data from the Massachusetts Estuaries Project (MEP). Pg.53 goes on to say, "According to the [Cape Cod Commission] CCC's 2017 Watershed Report for Megansett Harbor, [there is] no need to reduce current loading to Megansett Harbor as the current watershed wastewater load is within the total watershed load. However, MEP's final TMDL study indicates otherwise." "There are variations of load between the MEP and [CCC], primarily due to differences in comparing older and newer databases." (pg.52)

How can this not be confusing? Buzzards Bay Coalition's State of the Bay Report 2022, pgs.2-3, contains a graphic entitled **How is Nitrogen Affecting Your Local Harbor or Cove?** In the graphic, Megansett Harbor is claimed to be tied for the 6th-healthiest, with a score of 83 out of 100, healthier

than any other Bourne embayment listed in the graphic. In fact, its score had significantly improved from 72 in 2015. Yet, Squeteague Harbor's score at 58 had changed little since 2015, which places it at 34th-healthiest for Nitrogen. (Still, both harbors are positioned in the **Fair->Excellent** portion of the graphic as opposed to **Poor->Fair**.)

How can any future solution approach be chosen, and proven successful, in the face of one single limit that is applied jointly to two harbors that have such a widely disparate impairment, and another limit (on Squeteague) that doesn't even exist yet? Meanwhile, without a Watershed Permit, the clock is ticking on the Default GUIA Implementation Timeline, despite lacking final resolution of these conflicts.

Pg.3 (and re-iterated on pg.59), "While Megansett-Squeteague Harbor has a TMDL, the percentage share of removal combined with the overall controllable wastewater load reduce the removal requirement to below 600 kg N/year. Therefore, we recommend maximizing stormwater and downstream best management practices at this time." **Why was this recommendation ignored?**

Viable Alternatives Were Not Analyzed

According to the MEPA Application, Appendix 14, Phase II Alternatives Analysis, **Table 2: Bourne Non-Traditional Alternatives Engineering Feasibility Analysis** on pg.14 presents the following Source Reduction technologies and their Expected Nitrogen Removal applicable to existing residential properties in the Megansett-Squeteague watershed:

- Decentralized Cluster Treatment System 43% to 70%
- Fertilizer Management 50%
- Innovative/Alternative (I/A) * 28% (* Requires a Responsible Mgmt Entity)
- Stormwater Best Management Practices 25% to 50%

Despite high Nitrogen removal potential, and high score against an evaluation criteria matrix in Appendix A of Phase II Alternatives Analysis, Fertilizer Management implementation and cost was not analyzed and presented as a viable alternative.

When CCC prepared its Draft 208 Plan Update in 2015, it drew this interesting Public Comment from the Association to Preserve Cape Cod (APCC):

"Overlooked low hanging fruit: Cesspools are one of the easy targets largely overlooked by the [Draft 208 Plan Update]. Anecdotal information primarily from engineers points out that many properties have escaped from Title 5 inspection under current regulations. It is our understanding that municipal records make it difficult to determine the exact number of properties that may be relying on cesspools. According to testimony during 208 public hearings, it was common practice in the past to build cesspools (particularly those in close proximity to coastal embayments and ponds) with a direct hydraulic connection to groundwater, thus making these systems 'maintenance-free.' Obviously, if true, this means raw septage is reaching these embayments and ponds."

Possibly this low-hanging fruit is also being overlooked by the Bourne CWMP.

Current Nitrogen-Reducing GUIA Implementation Not a Proven Solution

MEPA Application, Appendix 14, Alternatives Analysis, pg.19, presents **Table 5: Megansett-Squeteague Conventional I/A Alternative** which claims to calculate the annual GUIA Nitrogen loading and removal if installed on the properties listed in the Megansett-Squeteague Harbor section of Appendix C, Alternative Parcel Tables. *Each residential property is assigned exactly the same GUIA loading regardless of its occupancy circumstances.* I can find no explanation in the document to explain why the same value was used or how that value was determined.

This identity seems to fly in the face of typical coastal community property usage. There is a significant share of properties that will be heavily used (with significant septic loading) from May through September, with little or no occupancy (and loading) the remainder of the year. There will be a significant share of year-round residents, single individuals and couples, whose second or third bedrooms are rarely used.

It is pointless to modify the septic systems of properties that are sources of relatively meagre annual loading and expect those modifications to solve the Nitrogen loading problem. **Proof of success requires a more detailed accounting of the true mix of loading at the level of specific properties before any multi-million-dollar solution is undertaken.** This is as true for a wastewater treatment facility (WWTF) solution as it is for the individual-property GUIA approach.

Furthermore, according to **Table 22: GUIA Operation, Monitoring, and Maintenance Cost Estimate** on pg.40 of the Plan, the GUIA approach requires individual property owners to spend about \$2,000 annually to maintain and power their GUIA equipment. Many seasonal properties will likely be deemed by their owners as “not contributing to the problem” and will suffer from lax upkeep. **Is this a viable solution if it depends upon hundreds of owners “doing the right thing” every year?**

When CCC prepared its Draft 208 Plan Update in 2015, it drew some rather pointed Public Comments. I am providing excerpts from the Buzzards Bay Coalition’s comment which might also be pertinent to the Bourne CWMP:

- MassDEP should require nitrogen reducing septic systems within 500 feet of all nitrogen impaired waterbodies.
- MassDEP should amend Title 5 to reduce the standard for nitrogen reducing septic systems from 19mg/L to 10mg/L. [The Bourne CWMP assumes 19mg/L is sufficient.]
- Successful implementation of the Draft 208 Plan Update relies on the issuance of strong watershed permits and regulations as well as adaptive management with performance thresholds.
- Traditional sewers, whether cluster or centralized, can solve the nitrogen pollution problem. Sewer systems can achieve a 100% reduction in nutrients within a watershed when the wastewater is treated to a high degree and discharged outside the watershed. **Unlike many of the non-traditional technologies discussed in the Draft 208 Plan Update, sewerage is a reliable, proven technology with long and predictable lifecycles and is likely the most affordable and effective solution for densely developed areas.**

Comment Details

16910

2-22-2025

2-24-2025

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Topic: Bourne Comprehensive Wastewater Management Plan

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Paragraph ▼
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WC Schwab
Ph.D., Geology/Geophysics

Attachments

Status

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Stephen F. Mealy
20 Pilgrim Road, Box 306
Sagamore Beach, MA 02562

February 23, 2025

Rebecca Tepper, Secretary
Executive Office of Energy and Environmental Affairs
Attention: Alexander Strysky
MEPA Office
100 Cambridge St., Suite 900
Boston, MA 02114
RE: Bourne Comprehensive Wastewater Management Plan
Expanded Environmental Notification Form, EEA# 16910

Dear Secretary Tepper:

I submit the following comments on Bourne's Comprehensive Wastewater Management Plan. I understand it has been submitted as an Expanded Environmental Notification Form, asking that the review be conducted under a Special Review Procedure.

The plan covers our five coastal embayments within Bourne and presents the town's proposed plan for each embayment. The embayments include plans for Buttermilk Bay/Buzzards Bay, Phinney's (Monument Beach) Harbor, the Pocasset River, Pocasset Harbor and Squeteague/Megansett Harbor (shared with Falmouth).

The plan was developed by the Bourne Board of Sewer Commissioners (also serving as the Select Board) and the Wastewater Advisory Committee consisting of 10 members including the Sewer Commissioners, Town Administrator, members from the Finance Committee, Planning Board, Conservation Commission, Board of Health and two members at large from North and South of the Canal. The Committee has the responsibility for advising the Board of Sewer Commissioners in the areas of public policy and long-range planning as it relates to the implementation of the CWMP.

Town-wide use of Innovative/Alternative (I/A) septic systems

The proposed Plan proposes an almost complete town-wide use of innovative/alternative (I/A) septic systems. I believe that the reliance of the plan on I/A septic systems fails to attain needed nutrient reduction requirements, based upon a review by the Cape Cod Commission.

Specifically, the Commission reviewed the target nitrogen loads for Phinney's Harbor and demonstrated a discrepancy between the nitrogen removal requirement identified in the TMDL and MEP report and the Plan goal.

The proposed Plan notes that the town-wide use I/A septic systems to nutrient reduction requirements, for now, with hope.

Page 10, "For now, the Draft Recommended Plan estimates General Use I/A systems with the hope that additional technologies will be able to meet the Best Available Nitrogen Reducing Technology limits in the future."

Should the town of Bourne, for now, manage wastewater and address water quality impairment in the town's coastal embayments using a CWMP with hope?

Meeting the Needed Nitrogen Reduction, Seasonal Homes

I understand the I/A Systems need to operate constantly to properly function. Much of the embayments in the Phinney's Harbor, the Pocasset River, Pocasset Harbor and Squeteague/Megansett Harbor have seasonal homes, many are second homes, which remain unoccupied for periods of several to as many as 6 months. The I/A systems would remain idle and non-functioning upon start-up in the spring for several months, I suggest. At what operational limit would such systems perform: Certainly not at 100%.

Neither the seasonality of systems nor the impact of such operation was addressed within the Plan.

Wastewater Alternatives not Evaluated Sufficiently

The use of the I/A systems should be limited to facilitate their use in areas where other alternatives cannot be. Alternative wastewater systems appear to have been completely overlooked or eliminated from serious consideration including an analysis of other systems, including regional and local, as well as other wastewater alternatives within the Plan.

Regional solutions may include interconnection of facilities, construction of one or more large facilities to eliminate the need for many small facilities and joint management of facilities to improve operation and maintenance and reduce costs.

Such a regional system approaches should include:

- With Falmouth, to address using a Watershed Permit, the Squeteague/Megansett Harbor embayment.

- With Sandwich and Joint Base Cape Cod, utilizing the wastewater treatment facility at Joint Base Cape Cod.

On the North side of the canal, including the Buttermilk Bay embayment:

- With Wareham. Bourne currently has an intermunicipal agreement with Wareham for the only existing sewer system in Buzzards Bay. This is currently near its maximum capacity (per the agreement), but expansion of the system is being explored.

Although the Plan attempts to provide an evaluation of these alternatives, including a cost-effectiveness analysis, it should include a review of technical, environmental, and infrastructure factors; I don't believe the Plan sufficiently meets these review criteria. These regional approaches were not considered in depth as they are greater than 1 mile away from the watershed and outside the jurisdiction of the Town of Bourne.

These alternatives should be considered in much greater detail and analysis. Other communities have developed plans to address (as Bourne has done in Buzzards Bay with Wareham) wastewater solutions together. This appears to be an outright exclusion by the Plan developers.

I/A Systems, the Bourne CWMP Specific Solution

This alternative evaluation of other approaches should result within the town's recommendation(s). I believe that the Bourne CWMP Plan was developed specifically for using a town-wide use of innovative/alternative (I/A) septic systems and specifically avoided almost all use of a conventional sewerage plan for any new infrastructure. As submitted, the Plan avoids:

- major capital costs to the town requiring individual homeowners to directly pay for all improvements;
- the town avoids operational and maintenance costs, as well as replacement costs;
- the town avoids liability if the town fails to implement the CWMP Plan;
- avoids developing new policy, regulations and relies on MassDEP regulations for enforcement.

These four specific points were presented at a public meeting of the Bourne Select Board meeting with the Board of Health on January 7, 2025.

My Understanding/Interpretation of Title 5 Regulations for the Town of Bourne: I/A Systems Approach vs. Water Shed Permits.

Title 5 indicates that for within Bourne's embayments, areas that have been designated as Nitrogen Sensitive Areas (NSA) are Squeteague and Phinney's Harbors. There is a 2-year period to submit a Notice of Intent to pursue a watershed permit for these NSA which began when the NSA was designated in June 2023. The end of this two-year period to submit a Notice of Intent is July 2025.

From July 2025-July 2030, if a town is not in the process of seeking a watershed permit, this is the 5-year period the town must complete I/A installations in all parcels in its NSA's, thus for Squeteague and Phinney's Harbors only.

If the town elects to pursue a Watershed Permit, that application must be submitted by July 2030.

Each watershed/NSA is treated individually; thus, the town needs to prepare a plan for Squeteague Harbor and a separate plan for Phinney's Harbor and the town could opt to apply for two different permits (one for each area).

Alternatively, the town could still pursue a watershed permit during the 5-year period, however this approach would significantly reduce the opportunity for homeowners to upgrade their systems if the town does not give them guidance on its plans.

The number of I/A systems presented in the Squeteague and Phinney's Harbors, 1,418 Systems in the first 5 years is a remarkable requirement and dependent on individual homeowners to undertake a significant investment while competing with other homeowners and System manufactures to meet this incredible deadline.

The Plan does note that if the Town pursues a Watershed Permit for Megansett-Squeteague and Phinney's Harbors, then less than 100 systems need to be installed per year for the watershed permit period of 20 years.

If the town determined to work with Falmouth, it would have the same permit period of 20 years. These approaches have not been reviewed and discussed sufficiently.

The Plan should specifically recommend the Watershed Permit.

New Construction within the Nitrogen Sensitive Areas

The title 5 regulations state that 6 months after the NSA designation (which would have been January 2024 for Squeteague and Phinney's Harbors) all new construction in an NSA must install an I/A from the Best Available Nitrogen Reducing Technology List.

I believe that the Jan 2024 deadline got pushed to June 2024. If the town files a notice of intent to pursue a Watershed Permit, the new construction mandate is paused.

As noted above, the CWMP as presented does not specifically indicate pursuing a Watershed Permit.

Cost Estimates Appear to be Based on Many Assumptions

At the public meeting on January 7, 2025 the Table ES-6, Draft Recommended Cost Summary was shown but had little discussion. It was stated that the costs for the Plan had not been discussed and that would be done at a later date. The Plan was submitted with the goal of this draft recommended plan is to get feedback from stakeholders on addressing nitrogen pollution sources while setting sustainable goals.

Recommendations for a More Thorough Plan

I ask that the Plan not be accepted and allow the town to rework the Plan. The revised Plan should include :

- Applying for Watershed Permits by July 2025; the Town files a Notice of Intent to apply for a watershed permit, applies for and receives a Watershed Permit for each of its nitrogen TMDL watersheds, and extends the time for compliance to 2045.
- Complete a more thorough review of possible shared infrastructure with adjacent towns and facilities;
- The town must address how to support individual homeowners paying for I/A systems. Other communities are also trying to address this as few financial opportunities are currently available. Yet the Plan as presented does not address this. The inability of every homeowner to finance these I/A systems was never addressed and is undoubtedly the most apparent flaw for a successful implementation for our town.
- Review capacity of the Buzzards Bay WWTP and the current allocations made for Economic Development, essentially locking up capacity to existing homeowners. This may require expanding the Buzzards Bay WWTP. This Plant was originally permitted for 3000,000 GPD ground water discharge and the town, on the request of the Shellfish Advisory Committee reduced this utilization to 100,000 GPD.
- More review of Core Sewer Areas and package treatment facilities, replacing the I/A systems.
- The town should undertake the responsibility of regulating, monitoring, building, and maintaining the necessary infrastructure, including town owned WWTP and package treatment facilities.

Immediate Action by the Town

The plan does provide the basis for the suggested re-work. The need to address the shortcomings outlined above are not insurmountable. To meet a goal of applying for the immediate Watershed Permits the Town should consider immediate work to that end.

Thank you for the opportunity to comment on the above-referenced EENF. The CWMP for the town of Bourne will have a profound impact on its residents/taxpayers and homeowners. It should be the best possible Plan and with work, this Plan could be improved and meet Bourne's needs.

Sincerely,

Stephen F. Mealy



February 24, 2025

Secretary Rebecca Tepper
Executive Office of Energy and Environmental Affairs
100 Cambridge Street
10th Floor
Boston, MA 02114

Attn: Alexander Strysky, Massachusetts Environmental Policy Act Office

Re: Bourne Comprehensive Wastewater Management Plan EENF No. 16910

Dear Secretary Tepper,

The Buzzards Bay Coalition (“Coalition”) has reviewed the Expanded Environmental Notification Form, EEA #16910 for the Town of Bourne’s Comprehensive Wastewater Management Plan (the “Bourne CWMP”) and offers the following comments for your consideration.

The Buzzards Bay Coalition is a membership-supported nonprofit organization dedicated to the restoration, protection and sustainable use and enjoyment of Buzzards Bay and its watershed including the following watersheds in the town of Bourne: Buttermilk and Little Buttermilk Bays, Phinneys Harbor, Red Brook Harbor (identified as Pocasset Harbor in the Bourne CWMP), Pocasset River and Megansett/Squeteague Harbor. For more than thirty years we have collected nutrient related water quality monitoring data on these estuaries pursuant to a Massachusetts Department of Environmental Protection and US Environmental Protection Agency Quality Assurance Project Plan. The Coalition works to improve the health of the Bay ecosystem for the public through education, conservation, research and advocacy.

In summary, the Coalition urges the town to file for Watershed Permits, consider more core sewer areas served by neighborhood scale sewer systems or regional sewer systems and rely less on general use innovative alternative septic systems and consider a board of health regulation requiring nitrogen reducing septic systems for all new construction town-wide.

The Buzzards Bay Coalition offers the following more detailed comments:

1. The Town Must File for Watershed Permits for Phinneys Harbor and Megansett/Squeteague Harbor.

The Buzzards Bay Coalition urges the town of Bourne to file for Watershed Permits for the Phinneys and Megansett Squeteague watersheds. Phinneys Harbor and Megansett/Squeteague are designated as Nitrogen Sensitive Areas (NSA) pursuant to 310 CMR 15.000. As a Natural Resource NSA, state regulation provides the town with two alternatives.

Alternative 1: File for watershed permits and develop a plan to meet the Total Maximum Daily Loads (TMDLs) for Phinneys Harbor and Megansett/ Squeteague, and implement that plan over the next twenty years. This allows the town to take planned and thoughtful action to achieve the required water quality results. This alternative also allows the town to spread the implementation cost over several years and take advantage of low interest state revolving fund loans to pay for implementation.

Alternative 2: Require each parcel within the Phinneys and Megansett/Squeteague watersheds to upgrade every septic system to a best available nitrogen reducing technology within five years - by 2030. This alternative does not guarantee that water quality goals for these Harbors are met since GUIA may not provide sufficient nitrogen reductions to meet TMDLs. This alternative places a significant financial burden on every single homeowner within those watersheds.

Further, the Bourne CWMP recommends a sewer district in the Phinneys Harbor Watershed. The Bourne CWMP contemplates sewerage 436 parcels in order to meet the TMDL. Without filing for a watershed permit, MassDEP regulations will require the rest of the homes in the Phinneys watershed to also install nitrogen reducing septic systems even though the core sewer service area will remove enough nitrogen to meet the TMDL. This creates an unnecessary cost burden for those homeowners not part of the sewer service area.

2. Bourne CWMP is Overly Reliant on General Use Innovative Alternative Septic Systems

Wastewater treatment at a sewer treatment plant (large scale or neighborhood/satellite scale) is the most effective way to reduce pollution. Apart from recommended core sewer areas in the Phinneys Harbor and Buttermilk Bay watersheds, the rest of town relies exclusively on the use of General Use Innovative Alternative Septic Systems when sewer may be a better option. GUIA systems should be implemented in areas where sewer is cost prohibitive and nitrogen reductions

are required. However, the Bourne CWMP fails to properly consider the use of sewer in other areas of town.

a. Regional Wastewater Treatment Must Be Considered

Currently the town of Bourne discharges up to 200,000 gallons per day of raw sewage to the town of Wareham for treatment and disposal within the town of Wareham. While the Wareham Water Pollution Control Facility (WPCF) has the capacity to treat additional wastewater from the town of Bourne, Wareham is limited by how much treated wastewater it can discharge into the sensitive Agawam River. If an alternative discharge location was identified, it would be possible for the town of Bourne to increase the amount of wastewater treated at the Wareham WPCF. While not considered in the Bourne CWMP, one such location was identified and verified as a suitable discharge location, the site of the current discharge of the Massachusetts Maritime Academy's wastewater at the Cape Cod Canal. The Coalition urges the town to consider this option.

The Bourne CWMP also fails to properly consider the possibility of using the Joint Base Cape Cod (JBCC) wastewater treatment facility as a treatment and disposal location. The Bourne CWMP dismisses this alternative as being more than 1 mile away and therefore not feasible. This is an odd conclusion as the CWMP anticipates more than 12 miles of sewer collection system for the Phinneys Harbor core sewer service area. The JBCC wastewater treatment facility may be a reasonable alternative for the Megansett/Squeteague, and Red Brook/Pocasset Harbor watersheds. The Coalition encourages the town of Bourne to carefully consider regional alternatives as a way to provide the best wastewater treatment at a reduced cost to Bourne's residents.

b. Alternative Core Sewer Area for Megansett/Squeteague

The Bourne CWMP considers a core sewer area for Megansett/Squeteague but later rejects it in favor of 285 GUIA systems. The Megansett/Squeteague watershed is shared with the town of Falmouth. The town of Falmouth has filed for a watershed permit for Megansett/Squeteague and is currently considering alternatives for reducing nitrogen to meet the TMDL. The town of Bourne and Falmouth should work together to consider whether it is both environmentally and economically beneficial to collaborate on a shared solution to meet water quality standards. Both towns should consider whether a shared satellite treatment plant, or connection to the wastewater treatment facility at Joint Base Cape Cod (JBCC) will lower the cost of meeting the TMDL and avoid the cost of individual septic systems.

c. Alternatives for Buttermilk Bay Core Sewer Service Area

The Bourne CWMP recognizes the need for a core sewer service area for Buttermilk Bay. A core sewer service area is considered but ultimately rejected as a preferred alternative because in order to do so would require the town to consider expanding the existing Buzzards Bay wastewater treatment facility. However, there are no costs furnished for the cost to upgrade the Buzzards Bay wastewater treatment facility. There was also no consideration nor costs offered for a regional solution. Instead, the Bourne CWMP recommends upgrading 408 homes at a cost of \$33,410,000 with no guarantee that water quality will be attained in Buttermilk Bay.

d. A GUIA Solution for Red Brook Harbor is Inadequate

The Bourne CWMP suggests that 1,455 parcels within the Red Brook Harbor watershed upgrade to GUIA at a total capital cost of \$62M. It does not appear that the Bourne CWMP evaluated the use of the Cataumet wastewater treatment facility, a facility which was oversized in its construction to accommodate additional sewer, other neighborhood sewer treatment facilities, or the alternative to use JBCC as a treatment facility. Further sewer alternatives must be considered for this watershed.

A TMDL for Red Brook Harbor is imminent and should be considered in the final CWMP. For the last five year, the Buzzards Bay Coalition has partnered with the Buzzards Bay National Estuary Program, Marine Biological Lab in Falmouth, Massachusetts Maritime Academy and Woods Hole Oceanographic in Falmouth to complete the science required to establish a nitrogen threshold report for Red Brook Harbor and Pocasset Harbor. That science will be submitted to the Massachusetts Department of Environmental Protection in the spring of 2025 to establish a total nitrogen TMDL for Red Brook Harbor as soon as possible.

e. A GUIA Solution for Pocasset River is Inadequate.

Similarly, the Bourne CWMP suggests that 645 GUIA is the best alternative for this watershed without fully evaluating sewer alternatives.

3. Alternative Cost Saving Solution for Phinneys Harbor Watershed

The Bourne CWMP recommends meeting the TMDL in Phinneys Harbor through the creation of a core sewer district. With an upgrade to the Bourne Schools WWTF, construction of 12.6 miles of sewer collection system and the connection of 436 parcels, the CWMP estimates a reduction of 1,744kg of nitrogen/year, more than the 1,706 kg of nitrogen/ year required to meet the TMDL. The CWMP estimates a cost of \$37,497,000 in capital costs or \$86,000 per home.

While the Coalition supports the creation of a core sewer district and utilization of the Bourne Schools WWTF to treat and dispose of wastewater outside the Phinneys Harbor watershed, the Bourne CWMP overlooks a critical alternative that may drastically reduce or eliminate costs for homeowners in the Phinneys Harbor watershed.

The Bay View Campground (BVC) is located within the Phinneys Harbor watershed. The BVC operates from at least May through October every year with an estimated 462 campsites, three pools, a tennis/pickleball court, basketball court, ice cream shop, video arcade, a baseball field, and laundry facilities. BVC uses a series of tanks, leach pits, and cesspools to dispose of the wastewater generated at, and brought to, the campground. Pursuant to Title 5 design flows at 310 CMR 15.203 a campground with 462 sites generates an estimated 41,580 gallons/day. The annual nitrogen load discharged from BVC is estimated at 8,098lbs/year or 3,673.2kg/year.

BVC relies on cesspools and other non conforming septic systems to dispose of untreated wastewater. Cesspools are considered failed systems pursuant to the town of Bourne's Board of Health regulation. Based on publicly available information, BVC is also in violation of state groundwater discharge regulations.

The CWMP estimates a required nitrogen reduction of 1,706kg of nitrogen per year within the watershed to meet the TMDL. If the BVC upgraded their wastewater infrastructure in compliance with the state and local law, and constructed a facility that treated their wastewater and reduced total nitrogen to 10mg/L, this upgrade alone could yield a 3,099kg/year reduction of nitrogen/year – nearly two times the amount that is required to meet the TMDL. **In other words, one parcel, complying with the law may avoid the cost to 436 single family home owners of an estimated \$37,497,000.** The BVC is a commercial entity that has contributed a significant amount of nitrogen to Phinneys Harbor over the years. BVC is in a better position to take on the cost of nitrogen reductions than many of the individual homeowners in the watershed.

The Buzzards Bay Coalition urges the Massachusetts Department of Environmental Protection and the town of Bourne to ensure that BVC takes immediate action to comply with state law, apply for a groundwater discharge permit, and reduce the amount of pollution it currently discharges to Phinneys Harbor.

4. Bourne CWMP Should Recommend All New Construction Install Nitrogen Reducing Septic Systems.

While the town wrestles with the best and most affordable approach to reduce nitrogen pollution to its nitrogen polluted waters, the permitting of new construction (residential and/or commercial) on standard title 5 septic systems that are not designed to reduce nitrogen, makes

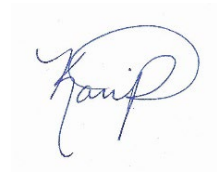
little sense. New standard title 5 systems just add new nitrogen, making an already large problem more challenging and undoing the investments the town will make in reducing existing sources of nitrogen.

The Buzzards Bay Coalition encourages the town Board of Health to pass a regulation that requires all new construction, town-wide, to install a nitrogen reducing septic system that meets 12mg/L total nitrogen. Communities across the Bay-region are passing and implementing regulations of this nature, including the towns of Westport, Marion, Wareham, Mashpee and Tisbury. Falmouth is also currently considering this regulation.

The cost of installing a nitrogen reducing septic systems is more easily absorbed into the cost of new construction and protects the town's investments in reducing nitrogen pollution from existing sources.

The Coalition welcomes the opportunity to assist the Bourne Board of Health with this regulation.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Korrin' followed by a stylized 'P'.

Korrin Nygren Petersen, Esq.
Vice President of Clean Water Advocacy
petersen@savebuzzardsbay.org

Cc: Massachusetts Department of Environmental Protection
Town of Bourne
Select Board/Sewer Commissioners
Board of Health

Town of Falmouth Wastewater Management Committee



THE COMMONWEALTH OF MASSACHUSETTS

EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS

OFFICE OF COASTAL ZONE MANAGEMENT

100 Cambridge Street, Suite 900, Boston, MA 02114 • (617) 626-1200

MEMORANDUM

TO: Rebecca Tepper, Secretary, EEA
ATTN: Alex Strysky, MEPA Unit
FROM: Alison Brizius, Director, CZM
DATE: February 24, 2025
RE: EEA-16910; Bourne Comprehensive Wastewater Management Plan; Bourne

The Massachusetts Office of Coastal Zone Management (CZM) has completed its review of the above-referenced Environmental Notification Form (ENF) noticed in the *Environmental Monitor* dated January 8, 2025, and offers the following comments.

Project Description

The Bourne Comprehensive Wastewater Management Plan (CWMP) calls for a three-phase approach to meeting the Town's nitrogen management needs. The proposed Phase 1 central to the current ENF includes sewerage in the Phinney's Harbor Core Sewer Area and expansion of the Bourne Schools Wastewater Treatment Facility (WWTF) and its infiltration beds beneath town athletic fields. The proposed Phinney's Harbor Core Sewer Area would require 12 miles of sewer and up to three pump stations to convey wastewater to the WWTF. Table ES-5 in the ENF describes both an Innovative/Alternative septic system option and a sewer option for addressing nitrogen in each of the five watersheds subject to this CWMP, including Phinney's Harbor. The ENF reports that the Phinney's Harbor Core Sewer Area alternative was chosen as Phase 1 primarily due to a need for increasing regular wastewater flow to the existing Bourne Schools WWTF (which experiences low flows when school is not in session) and nitrogen removal requirements under the Phinney's Harbor nitrogen Total Maximum Daily Load (TMDL). Future phases of the CWMP may include a mix of sewerage (which would require expansions of the Wareham and Buzzards Bay WWTFs), upgrades to septic systems to Innovative Alternative systems, and stormwater Best Management Practices (BMPs).

Project Comments

Addressing Nitrogen Management Goals

As stated above, the proposed project envisions some combination of sewerage, onsite septic system upgrades, and stormwater management to achieve nitrogen management goals. The sewerage option in any given watershed is contingent upon several factors, including whether existing WWTFs can be expanded and whether the receiving waters (marine or ground) can reasonably accept the additional loads. In the description of nitrogen load attenuation, it is not clear if the calculations include future development, especially because sewerage can facilitate development where it wasn't previously allowed due to septic system constraints. In the Environmental Impact Report the Town should detail how their nitrogen removal goals in each watershed account for potential future development.

Regarding septic system alternatives, given that many phases of the Town's CWMP call for the implementation of General Use Innovative Alternative (GUIA) septic systems, the Town should consider participation in Barnstable County's Responsible Management Entity (RME) program--the Massachusetts Alternative Septic System Technology Center (MASSTC)--to ensure proper performance tracking and maintenance of implemented GUIA systems. RMEs like MASSTC are management support systems tasked with ensuring decentralized infrastructure, such as on-site septic



systems and Innovative/Alternative septic systems, are functioning as designed to meet health and environmental goals.

Regarding the reduction of nitrogen loads via stormwater BMPs, the Town's implementation plan for the installation of structural BMPs is prioritized based on existing nitrogen loading, focusing on the areas with the highest nitrogen loading first: Old Head of Bay Road at Head of the Bay Road, Barlows Landing Beach, Beach Access Road off Squeteague Harbor Road, End of Massasoit Avenue, and Circuit Avenue at Outfall 86. Due to the connection of the Town's municipal separate storm sewer system to numerous outfalls that discharge stormwater into impaired waters, the Town acknowledged the nitrogen load reduction role of green stormwater infrastructure implementation throughout the watershed. To optimize nitrogen-reducing credit from stormwater management practices toward its TMDL, the Town should continue identifying locations for new green stormwater infrastructure and retrofits of existing systems that primarily address nitrogen as the contaminant of concern.

Adaptive Management

Bourne's commitment to reassessing the status of nitrogen loading in the Cape Cod Canal and Buzzards Bay watersheds as part of their Adaptive Management Plan (AMP) to determine if additional nitrogen loading reduction is needed is important. The Town should enhance its AMP to include periodic checkpoints during which it will evaluate the implementation and monitoring of GUIDA systems to ensure proper nitrogen removal performance and alignment with nitrogen removal goals. Additionally, the Town should detail the responsible party or people for making decisions to change approaches within their CWMP timeline. Lastly, annual reporting by the Town should also detail progress, findings, and decisions around the feasibility of upgrading the Bourne Middle School, Wareham, and Buzzards Bay WWTFs and alternatives that might be pursued if these upgrades are not implemented.

Coastal Hazards

As part of the alternatives analysis for the CWMP for Bourne, a detailed vulnerability analysis should be conducted to determine if wastewater infrastructure could withstand the flood and erosion hazards where new or expanded infrastructure is being proposed. The Flood Insurance Rate Maps (FIRMs) produced by the Federal Emergency Management Agency (FEMA) provide information about flooding that has a 1% chance of occurring each year. Bourne is susceptible to hurricanes, which occur less frequently than the 1% chance storm, but have a greater impact. For critical infrastructure, such as the sewerage proposed in this ENF, the planning needs to consider all the potential hazards the infrastructure would need to withstand during its design life. Ongoing technical and financial assistance is being provided to coastal communities in Buzzards Bay that have identified threats to existing wastewater infrastructure from chronic erosion as well as less frequent hurricanes that are going to be very expensive to mitigate. Since there are more tools and information available to assess the potential threats to critical infrastructure, it is important that the analysis of potential hazards go beyond the FEMA FIRMs.

The concern for flood and erosion hazards is greater in lower-lying areas adjacent to the shoreline, such as Old Dam Road, Shore Road, and North Beach Ave in the Phinney's Harbor planning area. Based on the [Massachusetts Sea Level Rise and Coastal Flooding Viewer](#), mean higher high water will be reaching portions of the roads in the project area after one foot of sea level rise (2008 benchmark). The viewer provides information about the source of the sea level rise data, including a link to [Appendix B of the 2022 MA Climate Change Assessment](#), which contains the most

recent downscaled sea level rise projections for Massachusetts. Depending on the timing of the analysis, more recent projections may become available. The [Massachusetts Climate Change Clearinghouse](#) is a good resource for the most recent information.

The Seal Level Rise and Coastal Flooding Viewer has two additional data sets that should be considered as part of the planning for the project. These include the National Hurricane Center [Sea Lake and Overland Surge \(SLOSH\) maps](#), and the [Massachusetts Coast Flood Risk Model \(MC-FRM\)](#). The SLOSH maps provide mapping of the possible inundation extent associated with Category 1, 2, 3, and 4 hurricanes. A large portion of the Phinney's Harbor project area is shown within the inundation area for a Category 1 Hurricane, and most of the planning area is within the Category 4 inundation area. The MC-FRM data show the extents and depths of flooding predicted to occur as a result of sea level rise and storm surge in 2030, 2050, and 2070. All of these data sources should be considered to evaluate the potential flood hazards associated with each option for addressing wastewater treatment.

The erosion information available through the [Massachusetts Coastal Erosion Viewer](#) has averaged out the erosion that has occurred over time. Shoreline data before and after the major storms that have occurred is not available, and the changes that have been captured are averaged out over a long period of time. Therefore, the shoreline change rates don't reflect the erosion hazard or provide the information needed to assess the vulnerability of wastewater infrastructure. To assess the vulnerability of potential sewer lines and pump stations in each project area, a quantitative analysis of the shoreline erosion likely to occur in a major hurricane for the life of the project, including sea level rise, is needed. This analysis is critical to determine if the infrastructure associated with the sewer alternative will withstand the erosion that is likely to occur in a major storm event.

The availability of sewer infrastructure in coastal areas subject to storm damage, flooding, and erosion could allow new or expanded development in these hazard-prone areas. This development may also adversely impact natural buffers to storm waves and erosion, and compromise the storm protection provided to landward development, infrastructure, natural resources, and upland areas. Due to the ongoing impacts of these hazards, planning efforts for new infrastructure in the areas subject to them are important. Specific planning considerations should be developed for areas located within coastal flood zones as part of the planning process.

If sewerage is chosen as the preferred alternative after the hazards informed analysis is completed, design options should be considered to ensure that the proposed infrastructure is designed in a resilient manner. Technical assistance is available as needed in this effort.

Federal Consistency

The proposed project may be subject to CZM federal consistency review. For further information on this process, please contact, Sean Duffey, Project Review Coordinator, at sean.duffey@mass.gov or visit the CZM website at <https://www.mass.gov/federal-consistency-review-program>.

AB/tc/rh/km

cc: Steve McKenna, CZM
Rebecca Haney, CZM
Todd Callaghan, CZM

Kathleen Mason, CZM
Gerard Martin, MassDEP
Jonathan Hobill, MassDEP
Maggie Leary, MassDEP
Andrew Osei, MassDEP
Marlene McCollem, Town of Bourne Administrator
Kathryn Roosa, Apex



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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Maura T. Healey
Governor

Kimberley Driscoll
Lieutenant Governor

Rebecca L. Tepper
Secretary

Bonnie Heiple
Commissioner

February 24, 2025

Rebecca L. Tepper,
Secretary of Energy and Environment
Executive Office of Energy and
Environmental Affairs
100 Cambridge Street, Suite 900
ATTN: MEPA Office
Boston, MA 02114

RE: EENF Review. EOEEA # 16910
BOURNE. Bourne Comprehensive
Wastewater Management Plan (CWMP)

Dear Secretary Tepper,

The Southeast Regional Office of the Department of Environmental Protection (MassDEP) has reviewed the Expanded Environmental Notification Form (EENF) for the Town of Bourne Comprehensive Wastewater Management Plan, Bourne, Massachusetts (EOEEA #16910). The Project Proponent provides the following information for the Project:

There is currently no centralized, municipally owned and operated wastewater collection systems south of the Cape Cod Canal in Bourne. This project proposes a Phinney's Harbor Core Sewer Area with the primary purpose of removing nitrogen loading from the Phinney's Harbor Embayment system and transferring flow outside the watershed to the existing Bourne Schools Wastewater Treatment Facility (WWTF), located in the Cape Cod Cana Watershed. The existing Bourne Schools WWTF will require capacity assessment and discharge assessment, including hydrogeologic modeling of the existing groundwater discharge beds. The proposed Phinney's Harbro Core Sewer Area will encompass approximately 12 miles of sewer and up to three pump stations to convey wastewater to the existing Bourne Schools Wastewater Treatment Facility (WWTF). The existing WWTF would be expanded for treatment and discharge, subject to permit approval/permitting, and remove nitrogen loading from Phinney's Harbor watershed. The design is only at the pre-design/conceptual stage, so several factors are subject to change as the design is progressed. This is considered part of Phase 1 of a three Phase Comprehensive Wastewater Management Plan Recommended Plan.

Several alternatives were evaluated as part of the Comprehensive Wastewater Management Plan Alternatives Analysis. The full analysis and results are included in Attachment 11 – Draft Recommended Plan and Attachment 13 – Alternatives Analysis. The current Phinney's Harbor Core Sewer Area alternative was chosen primarily due to a need for increasing regular wastewater flow to the existing Bourne Schools WWTF and removal requirement for nitrogen under the Phinney's Harbor Nitrogen TMDL.

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This information is available in alternate format. Please contact MassDEP at 617-292-5500.

TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

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Bureau of Water Resources (BWR) Comments

Wetlands. The MassDEP SERO has reviewed the Expanded Environmental Notification Form (EENF) for the Phase 1 of the Comprehensive Wastewater Management Plan (CWMP) in Bourne, Massachusetts. The EENF notes that the Project design has not yet been completed. As such, a final limit of work has not been determined. The EENF states that only Buffer Zone within existing rights-of-way will be impacted by the installation of the Phinney's Harbor sewer phase of the CWMP and that either a Request for Determination or a Notice of Intent will be submitted to the Bourne Conservation Commission for work within jurisdiction of the Wetlands Protection Act.

While the EENF states that the installation of sewer in Phase 1 will only occur within buffer zones to resource areas, much of the area where the sewer is proposed falls within Land Subject to Coastal Storm Flowage (LSCSF) based on FEMA FIRM 25001C0501J, effective 7/16/2014. Additionally, portions of the area fall upstream of Mouth of River lines, indicating that portions of the Project may fall within Riverfront Area (310 CMR 10.58). Both temporary and permanent LSCSF and Riverfront Area impacts must be quantified, and the Proponent must demonstrate compliance with all applicable performance standards in any Notice of Intent filing.

The Project may result in an increase in impervious area, but it has not been quantified yet due to design being incomplete. A Stormwater Management Report may be required per 310 CMR 10.05(6)(k)-(q).

Waterways: There is no work proposed within Waterways jurisdiction.

Wastewater Management: MassDEP Southeast Regional Office is pleased to have the opportunity to comment on the Town of Bourne's Comprehensive Wastewater Management Plan (CWMP) Draft Recommended Plan. MassDEP commends the Town on its ongoing efforts to restore and protect nitrogen-sensitive watersheds impacted by nutrient enrichment and development.

General:

The design of the entire Project should follow the appropriate portions of the NEIWPCC; TR-16, Guides for the Design of Wastewater Treatment Works.

MassDEP recommends that CWMPs follow the guidance provided by the State Revolving Fund (SRF) for the contents of the document. The guidance can be found at: <https://www.mass.gov/doc/wastewater-facility-planning-guidance/download>

Introduction:

The Bourne Comprehensive Wastewater Management Plan (CWMP) represents a 20-year strategy to address nitrogen impacts across seven of its watersheds: Phinney's Harbor, Megansett-Squeteague Harbor, Buttermilk Bay, Pocasset Harbor, Pocasset River, Buzzards Bay, and Cape Cod Canal. The Massachusetts Estuaries Project (MEP) reports indicate that two of these

watersheds have a nitrogen loading threshold that needs to be met to maintain healthy ecosystem conditions. In 2006, the Phinneys Harbor, Eel Pond and Back River System MEP report was published, followed by the issuance of the Nitrogen TMDL Report by MassDEP in 2007. Similarly, in 2015, the Megansett-Squeteague Harbor Estuarine System MEP report was released, with its corresponding Nitrogen TMDL Report issued by MassDEP in 2020.

Bournes CWMP identifies priority watersheds Phinneys Harbor and Megansett-Squeteague Harbor to be addressed in Phase 1, due to existing TMDL requirements for nitrogen. Buttermilk Bay, Pocasset Harbor, and Pocasset River, are highlighted in Phase 2 of the plan for nitrogen reduction and adaptive management. Buzzards Bay and Cape Cod Canal will be addressed in Phase 3 to reassess whether nitrogen reducing measures need to be taken into consideration. The CWMP incorporates a phased approach with conventional sewer infrastructure, enhanced Innovative/Alternative (I/A) septic systems, and stormwater management strategies to meet these goals.

MassDEP seeks clarification regarding the differences in how the Project phases have been presented. At the MEPA Remote Consultation Session meeting on January 28, 2025, the phasing was outlined as Phase 1 (1-5 years) and Phase 2 (over a 20-year period), with no description of Phase 3 timeline. However, the CWMP presents Phase 1 (1-10 years), Phase 2 (years 11-20), and Phase 3 (11-20 years). To ensure consistency and alignment across planning documents, MassDEP requests clarification on whether these differences reflect an update to the phasing approach, a change in Project scope, or an inconsistency in presentation.

TMDL Compliance:

According to the Massachusetts Estuaries Project (MEP) reports and associated Total Maximum Daily Load (TMDL) analyses, significant nitrogen enrichment has impaired water quality and ecological health in Bourne's coastal embayments. Restoration efforts detailed in Bourne's CWMP aim to achieve nitrogen thresholds necessary to support the recovery of critical habitats, such as eelgrass and infaunal communities. Please confirm or clarify if MassDEP has misconstrued the town's plan as the CWMP presents that Town of Bourne will be pursuing wastewater management and nitrogen abatement to achieve TMDL compliance and estuarine

habitat restoration without obtaining a Watershed Permit. Given this decision, it is critical to ensure that any Innovative/Alternative (I/A) technology utilized for on-site sewage disposal is compliant with the Best Available Nitrogen Reducing Technology (BANRT) requirements under 310 CMR 15.215(2)(a) and (b). The Town's list of General Use Approved I/A systems will be limited outside of a Watershed Permit, as systems installed outside of such permits are required to use Best Available Nitrogen Reducing Technology (BANRT).

For any new construction or existing systems in designated Nitrogen Sensitive Areas (NSAs) under 310 CMR 15.214(1)(b), the installed technology must be on MassDEP's BANRT list unless the area is subject to an approved Watershed Permit or De Minimis Nitrogen Load Exemption. In alignment with 314 CMR 21.00, MassDEP recommends referring to "traditional" strategies as "conventional strategies". The latter is directly defined in the regulations. Consistent use of regulatory terms can help avoid confusion. Similarly, MassDEP recommends referring to "non-traditional" strategies as "alternative strategies". This terminology is consistent with the regulations and better reflects the evolving nature of wastewater and nitrogen management.

MassDEP recommends avoiding the term “GUIA”, as MassDEP does not refer to General Use Approved Innovative/Alternative (I/A) systems using this acronym. Enhanced Innovation/Alternative onsite system (EIA) is not a MassDEP-defined term. The Department recommends specifying the technologies being considered, such as NitROE and Nitrex, or describing them as systems capable of achieving lower nitrogen concentrations. We are seeing much confusion about the I/A program. MassDEP believes it is due to use of various other terms and creation of categories that do not accurately reflect the I/A approval process or the Natural Resource Nitrogen Sensitive Area regulations.

MassDEP does not recommend referring to compliance with the revised Title 5 regulations as “the default”. Title 5 requirements can be met through a De Minimis Load Application, a Watershed Permit Application, or Individual Homeowner Upgrades. Because the Town of Bourne plan appears to focus on Individual Homeowner Upgrades, the Department suggests referring to it as the Individual Homeowner Upgrade Plan for clarity and accuracy.

MassDEP's requirement for a conventional backup plan applies specifically within the Watershed Permitting Framework. Outside of this framework, the Town is not strictly required to adhere to this requirement. It would be considered best practices to include conventional back up strategies for each alternative strategy. If the Town is not pursuing a Watershed Permit, the Department suggests clarifying the language in the CWMP that incorporating a conventional backup plan is “a recommended component” or “best practice” within their plan rather than a “MassDEP requirement”. Additionally, the definition of a conventional backup should be clearly tied to the regulatory context in which it applies to avoid confusion regarding its necessity and implementation. In the CWMP in Section 4.1.1 on page 12 of the Draft Recommended Plan, the Town states the removal requirement is 75% nitrogen source removal over the permit monitoring period. Per the watershed permitting regulations, 314 CMR 21.00, the nitrogen removal requirement under the Watershed Permit is 100%; however, a minimum removal of 75% may be approved if the Town provides sufficient justification and supporting information as required by the regulations. Please clarify in the CWMP that the town’s goal is not being determined by the watershed permit regulations. The Town has approximately five months left in the specified period per 314 CMR 21.00 to submit a Notice of Intent for a Watershed Permit. For clarification purposes, holders of a watershed permit are required to submit an update report every five years.

Those outside of a watershed permit are not required to submit update reports every five years. Please clarify any references to this information in the CWMP.

Megansett-Squeteague:

According to the CWMP, the nitrogen reduction target for Megansett-Squeteague Harbor is set at 564 kg-N/year. It states that the proposed restoration strategies include installing Innovative/Alternative (I/A) septic systems to remove approximately 504–631 kg-N/year and implementing stormwater Best Management Practices (BMPs) to reduce an additional 113 kg-N/year. These measures are projected to achieve a total nitrogen removal of approximately 617–744 kg-N/year.

The nitrogen reduction targets presented for the Megansett-Squeteague watershed in the CWMP reference the TMDL Report associated with Megansett-Squeteague Harbor as a source, but the proposed nitrogen reduction targets in the CWMP do not match the TMDL Report. According to the CWMP, Bourne has a 39% percent contribution of the controllable attenuated nitrogen load to Megansett Harbor, while Falmouth has a 61% contribution. The Megansett-Squeteague Watershed contains 3 sub-embayments: Squeteague Harbor, Megansett Channel, and Megansett Harbor. MassDEP requests clarification on what methodology was used to develop the nitrogen reduction targets and a breakdown of how the proposed reduction is applied to the sub-embayments. If the plan is only addressing the sub-embayment, it is necessary to explain how the Town intends to maintain assimilative capacity in the other parts of the Megansett-Squeteague Harbor system that is within Town boundaries.

For compliance with Natural Resource Nitrogen Sensitive Area regulations in 310 CMR 15.00, the entire Nitrogen Sensitive Area (NSA) within the Town's boundaries must be considered, not just a specific area of the NSA within the Town. The primary restoration strategies for this watershed include installing Innovative/Alternative (I/A) septic systems and implementing stormwater Best Management Practices (BMPs). The CWMP proposes a conventional back-up strategy for Megansett-Squeteague focused on sewerage.

The Megansett-Squeteague Harbor Sewer option is referred to as an alternative and as a core sewer area. MassDEP considers centralized wastewater collection and treatment as a conventional strategy. Please refer to potential plans to sewer in watersheds as centralized treatment options or sewer options to avoid confusion. Additionally, core sewer area is a term from the watershed permitting regulations (314 CMR 21.00) that describes an area that requires centralized wastewater treatment due to density of development. In these circumstances, they are not options but are identified by the town as a required sewer area in order to meet the TMDL, meet local water quality and town needs, and sustain the TMDL when considering future growth in the watershed. Please clarify if the intention is to communicate that this is an identified area where centralized treatment is required in the plan versus if it is an option in comparison to other strategies.

The Megansett-Squeteague Harbor "sewer alternative" includes a new wastewater treatment facility that will collect wastewater from 150 parcels. The proposed location's address is 0 Megansett Road, which is currently vacant, and Town owned. The estimated average daily flow for this proposed facility is 30,440 gallons per day. The amount of pipe required to sewer this area is 4.8 miles. If the town were to pursue the implementation of this strategy, MassDEP would require a WP83 application for review of a hydrogeological analysis assessing the feasibility of a treated wastewater effluent discharge and a WP79 application for establishing a new WWTF.

The Department recommends conducting preliminary scoping to identify any sensitive receptors, such as wetlands, residential properties, or other potentially affected structures, that could be impacted by the proposed discharge. This assessment is critical to ensuring regulatory compliance and minimizing environmental and community impacts.

Phinneys Harbor:

The nitrogen reduction targets presented for the Phinneys Harbor watershed in the CWMP reference the TMDL Report associated with Phinneys Harbor as a source, but the proposed

nitrogen reduction targets in the CWMP do not match the TMDL Report. Bourne has a 100% percent contribution of the controllable attenuated nitrogen load to Phinneys Harbor. Phinneys Harbor has four sub-embayments: Back River Inner, Back River Outer, Eel Pond, and Phinneys Harbor. MassDEP requests clarification on what methodology was used to develop the nitrogen reduction targets and a breakdown of how the proposed reduction is applied to the sub-embayments. If the plan is only addressing a sub-embayment, it is necessary to explain how the Town intends to address other needs and/or maintain assimilative capacity in the other parts of the Phinney's Harbor system. For compliance with Natural Resource Nitrogen Sensitive Area regulations in 310 CMR 15.00, the entire Nitrogen Sensitive Area (NSA) within the Town's boundaries must be considered, not just a specific area of the NSA within the Town. The primary restoration strategies for this watershed include a collection system expansion by connecting about 436 parcels to the existing Bourne Middle School WWTF and implementing stormwater Best Management Practices (BMPs).

The Phinneys Harbor Sewer option is referred to as an alternative and as a core sewer area. Sewering is considered a conventional strategy. MassDEP considers centralized wastewater collection and treatment as a conventional strategy. Please refer to potential plans to sewer in watersheds as centralized treatment options or sewer options to avoid confusion. Additionally, core sewer area is a term from the watershed permitting regulations (314 CMR 21.00) that describes an area that requires centralized wastewater treatment due to density of development. In these circumstances, they are not options but are identified by the town as a required sewer area in order to meet the TMDL, meet local water quality and town needs, and sustain the TMDL when considering future growth in the watershed. Please clarify if the intention is to communicate that this is an identified area where centralized treatment is required in the plan versus if it is an option in comparison to other strategies.

The Bourne Middle School WWTF is currently permitted for 35,400 gpd under MassDEP GWDP #670-3. The proposed parcel connections are estimated to generate 86,100 gpd of wastewater and were selected based on their proximity to Bourne Middle School. The proposed sewer expansion would increase influent flow to approximately 121,500 gpd. The amount of pipe required to sewer this area is 12.6 miles. This strategy focuses on transferring wastewater flow to the Bourne Schools Wastewater Treatment Facility (WWTF), which is proposed to be upgraded to handle increased capacity while improving nitrogen removal efficiency.

MassDEP requires a WP11 application to process permit modifications and review plans for proposed facility modifications within the same application. If the town were to pursue the implementation of this sewer expansion, MassDEP may require a WP83 application for review of a hydrogeological analysis before the submittal of a WP11 application if the permit modifications will be desired more distant into the foreseeable time horizon.

Buttermilk Bay:

The CWMP presents I/A systems as the primary strategy for nitrogen load reduction in the Buttermilk Bay Watershed. The CWMP presents two conventional back-up strategies which focus on sewerage rather than I/A systems. The removal estimates for Buttermilk Bay are based on estimated 25% removal of total controllable nitrogen load.

The Buttermilk Bay Sewer option is referred to as an alternative and as a core sewer area. Sewering is considered a conventional strategy. MassDEP considers centralized wastewater collection and treatment as a conventional strategy. Please refer to potential plans to sewer in watersheds as centralized treatment options or sewer options to avoid confusion. Additionally, core sewer area is a term from the watershed permitting regulations (314 CMR 21.00) that describes an area that requires centralized wastewater treatment due to density of development. In these circumstances, they are not options but are identified by the town as a required sewer area in order to meet the TMDL, meet local water quality and town needs, and sustain the TMDL when considering future growth in the watershed. Please clarify if the intention is to communicate that this is an identified area where centralized treatment is required in the plan versus if it is an option in comparison to other strategies.

The CWMP presents two Buttermilk Bay sewer options. The first option proposes expansion of the Buzzard's Bay WWTF to approximately 330 residential parcels to collect about 60,000 gallons per day (gpd) along the southern portion of Buttermilk Bay. The second option includes connecting 778 parcels, including the parcels identified in option one. Option two results in an estimated flow of 156,000 gpd. These sewer options require an additional flow capacity at the Buzzards Bay WWTF, both at the treatment plant and for its groundwater discharge permit. The Buzzards Bay WWTF is currently permitted for 100,000 gpd under MassDEP GWDP #974-1.

MassDEP requires a WP11 application to process permit modifications and review plans for proposed facility modifications within the same application. If the town were to pursue the implementation of this sewer expansion, MassDEP may require a WP83 application for review of a hydrogeological analysis before the submittal of a WP11 application if the permit modifications will be desired more distant into the foreseeable time horizon.

The estimated expansion of flow is dependent on buildout in the existing Buzzards Bay collection system. MassDEP requests clarification on whether planning for Buttermilk Bay is contingent on growth within the watershed. As currently described, it is unclear whether "development" refers to potential land use changes through anticipated future residential and commercial growth in the Buttermilk Bay watershed or to system upgrades and capacity expansions at the Buzzards Bay WWTF in relation to the existing Buzzards Bay WWTF service area. Build-out can refer to the maximum amount of growth and development that can occur in a watershed based on local restrictions and by-laws. Projected growth is typically what is considered in a specific time horizon, rather than the maximum build out per local restrictions.

and by-laws. The term build-out can also refer to the design flow of a wastewater treatment facility based on the sewer service area. It is not clear how this term is being used in the report as it discusses potential extensions into the Buttermilk Bay watershed. In Section 4.1.1 on page 13 of the Recommended Plan it is stated that the nitrogen reduction target for Buttermilk Bay Watershed cannot be achieved solely using "GUIA". The Department requests clarification on the calculations used to support this statement that the nitrogen reduction target for the Buttermilk Bay watershed cannot be achieved solely using GUIA systems. The most efficient way to clarify this would be through a technical memorandum attached as an appendix to the CWMP. The analysis should include clear documentation and of nitrogen load estimates, removal efficiencies, and any modeling assumptions used to determine this conclusion. In general, there should be a technical memo dedicated to demonstrating the assumptions and nitrogen reduction calculations for each watershed presented in the report.

Pocasset Harbor:

Proposed restoration strategies for Pocasset Harbor include installing Innovative/Alternative (I/A) septic systems and implementing stormwater Best Management Practices (BMPs). The removal estimates for Pocasset Harbor are based on estimated 25% removal of total controllable nitrogen load. In a technical memo attached as an Appendix, please provide the technical basis or methodology use to estimate the total controllable nitrogen load.

Pocasset River:

Proposed restoration strategies for Pocasset River include installing Innovative/Alternative (I/A) septic systems and implementing stormwater Best Management Practices (BMPs). The removal estimates for Buttermilk Bay are based on estimated 25% removal of total controllable nitrogen load. In a technical memo attached as an Appendix, please provide the technical basis or methodology use to estimate the total controllable nitrogen load.

Alternative Strategies and Demonstration Projects:

The Town of Bourne's CWMP presents a mix of conventional and non-traditional nitrogen abatement strategies to achieve watershed nitrogen reductions. These strategies include general use I/A systems, stormwater Best Management Practices (BMPs), and fertilizer management. It is unclear if the sewer options will be constructed in concert with I/A strategies to address dense development needs; if they serve as a back-up to the individual homeowner deployment of general use I/A systems on the BANRT list; or if they are options presented as a consideration to be compared to Bourne's wastewater plan. The report presents a comparison of different I/A technologies rather than a comparison of different nitrogen abatement strategies. We recommend reviewing and referencing the Cape Cod Commission's 208 Plan for a comprehensive list of nitrogen abatement and reduction strategies for consideration in Bourne's plan. The applicable strategies should be considered as part of this analysis and there should be discussion on why certain strategies are not suitable for the specific watersheds.

Please clarify the assumptions that were used to calculate estimated nitrogen removal loads from "Table 2: Summary of 2022 Alternatives and Total Estimated Nitrogen Removal" estimates. For example, it is not clear if actual water use data was used or if estimates were assumed from specific time frames. A Technical Memorandum and/or Quality Assurance Project Plan (QAPP) should be provided to document the methodology, assumptions, and data sources used in this analysis to ensure transparency and reproducibility. Please clarify which alternative is being presented as the recommended plan.

The Needs Assessment should focus on identifying both wastewater management challenges, specific town needs and regulatory requirements, while the Alternatives Analysis is the appropriate section for evaluating potential solutions, including sewer alternatives. The Needs Assessment did not address, in depth, if there were nutrient abatement needs pertaining to maintaining freshwater health and recreational uses that led to certain strategies being superior to others. The exact matrix of creating the plan is not well understood and seems to focus primarily on regulatory compliance and nitrogen. There is minimal to no discussion around emerging

contaminants of concern such as PFAS and PFOA compounds or pharmaceuticals and if or how those contaminants impact the selection of strategies to promote protection of drinking supplies and other environmental ecosystem services. Under Section 4.1.2 on page 21 of the Recommended Plan, it is stated that pilot and provisional I/A Onsite Systems fall into the enhanced onsite wastewater treatment category. MassDEP does not have a specific category in the I/A program called Enhanced Onsite Wastewater treatment. The Department suggest the Town revises this to accurately reflect their regulatory designation and treatment capabilities and avoid confusion in public education and outreach.

I/A Systems:

MassDEP suggests the Town should clearly outline the monitoring requirements for pilot, provisional, and general use systems in accordance with MassDEP regulations to ensure residents understand their compliance obligations. As the Town of Bourne pursues a wastewater management and nitrogen abatement without obtaining a Watershed Permit, it is critical to ensure that any Innovative/Alternative (I/A) technology utilized for on-site sewage disposal is compliant with the Best Available Nitrogen Reducing Technology (BANRT) list pursuant to 310 CMR 15.215(2)(a) and (b). Specifically, for any new construction or existing systems in designated Nitrogen Sensitive Areas (NSAs) under 310 CMR 15.214(1)(b), the installed technology must be on MassDEP's BANRT list unless the area is subject to an approved Watershed Permit or De Minimis Nitrogen Load Exemption. The Town is expected to foster compliance with the Nitrogen Sensitive area provisions and use enforcement as necessary with the authority established in 310 CMR 15.025.

MassDEP recommends utilizing county data to assess the actual performance of these systems rather than relying solely on their general use approval status or approval letters. Actual performance data can provide a more accurate representation of nitrogen removal efficiency under local conditions. MassDEP recommends updating the CWMP to reflect the need to use Best Available Nitrogen Reducing Technology (BANRT) systems outside of a watershed permit rather than "nitrogen reducing systems", "EIA" or "GUIA". The Department requests this terminology should be corrected for accuracy. Furthermore, MassDEP requests clarification on the source of the numbers and the methodology used to determine that a minimum of 3,900 systems is required to meet the town-wide nitrogen removal goals. A technical memorandum or supporting calculations should be provided to ensure transparency and reproducibility of these estimates. Absent the conditions stated in 310 CMR 15.215 (2) (a) 1-3, every existing system will need to be upgraded by July 7, 2030. This is not associated with a specific number of systems or a specific nitrogen load.

Stormwater Management:

The Town of Bourne has proposed stormwater management projects aimed at reducing nutrient levels entering its nitrogen-sensitive watersheds. These efforts focus on addressing non-point source pollution through the implementation of structural BMPs such as infiltration systems, bio-retention areas, and vegetated swales. The Town is also exploring the integration of innovative materials like biochar into stormwater systems to enhance nutrient removal. Before implementation, pilot studies will assess the efficacy of these materials in nitrogen reduction.

Under a Watershed Permit, MassDEP allows for an assumed 25% nitrogen removal through stormwater BMPs, but towns can demonstrate higher removal rates if supported by data. This 25% assumption is not a MassDEP maximum but a general guideline within the watershed permitting framework. Outside of this framework, the assumption does not apply. Although this maximum amount has been allowed in watershed permitting, it is understood that this assumption is applied best when the total load attributed to stormwater is less than 5% of the total controllable nitrogen load. MassDEP suggests that the Town consider the risk of their assumptions in nitrogen load removal assessments.

According to Section 4.1.2 on page 23 of the Recommended Plan, it is stated that MassDEP is in the process of updating the current Stormwater Regulations for Wetlands Protection Act (310 CMR 10.00) and Water Quality Certification (314 CMR 9.00) for Massachusetts with measures of updating outdated precipitation data to reflect increasing frequency, intensity of storm events, and alignment with EPA MS4's permit conditions. To clarify, MassDEP is working to align with the EPA MS4's Permit conditions to the extent possible but will not be able to achieve full alignment. MassDEP will not be establishing approved nitrogen removal rates per each BMP but will suggest potentials for phosphorus removal and estimates for nitrogen removal that still require monitoring for confirmation of actual nutrient load removal. The primary goal of MassDEP's efforts is to better align MS4 pollutant removal requirements with stormwater control measures (SCMs).

Fertilizer Management:

Bourne has adopted a proactive approach to fertilizer management through its local Nitrogen Control By-law. The bylaw aims to reduce nutrient contributions from residential and commercial properties, aligning with BMPs to minimize excess fertilizer use. The Town collaborates with the Cape Cod Cooperative Extension to educate the public and enforce compliance. Educational initiatives include in-store signage at local retailers, public outreach through mailers, and community workshops. These efforts ensure residents and businesses understand the environmental impacts of fertilizer use and adopt practices that minimize nitrogen runoff.

MassDEP recommends that the Town continue to educate and enforce, to the best of its ability, fertilizer control to maximize nitrogen reductions. Similar to stormwater nitrogen removal, under a Watershed Permit, MassDEP allows for an assumed 25% nitrogen removal fertilizer reduction BMPs like by-laws, but towns can demonstrate higher removal rates if supported by data. This 25% assumption is not a MassDEP maximum but a general guideline within the watershed permitting framework. Outside of this framework, the assumption does not apply. Although this maximum amount has been allowed in watershed permitting, it is understood that this assumption is applied best when the total load attributed to fertilizer is less than 5% of the total

controllable nitrogen load. MassDEP suggests that the Town consider the risk of their assumptions in nitrogen load removal assessments.

Adaptive Management:

The Town of Bourne's Comprehensive Wastewater Management Plan (CWMP) adopts an adaptive management process to evaluate and implement cost-effective strategies, including non-traditional methods, as they demonstrate feasibility and effectiveness. MassDEP requests

clarification on how the Town is defining adaptive management. What are the specific protocols in place or proposed to assess whether modifications to the plan are necessary? How will adjustments be made to best meet the needs of the watershed over time? What will be the frequency of these plan reviews?

The CWMP identifies the potential use of Innovative and Alternative (I/A) septic systems as part of the Town's adaptive management strategy. It is unclear how this will work because in compliance with the Nitrogen Sensitive Area provisions in Title 5 for upgrading all existing systems, absent the conditions stated in 310 CMR 15.215 (2) (a) 1-3, there would not be additional upgrades or replacements that could occur using I/A septic systems. The other consideration the town could consider in adaptive management would be overseeing operation and maintenance of the systems through a town ran management entity or regional septic utility.

The Town is using data from Buzzards Bay Coalition, Buzzards Bay National Estuary Program, Cape Cod Commission, Bourne Health Department Beach Monitoring, Conservation Commission Studies, and Bourne Conservation Trust for data collection and sources of embayment monitoring. It is unclear if the Town of Bourne has committed to ongoing and future performance evaluation of I/A systems, stormwater BMPs, and centralized treatment options. The CWMP states that data generated from these programs will inform refinements to the CWMP and guide decision-making to meet nitrogen reduction goals, but a monitoring strategy was not proposed or presented.

MassDEP recommends that as data is generated, assumptions should be checked and refined as needed to assure adequate nitrogen load removal is executed on an annual basis. We recommend avoiding the assumption that because a system is generally approved by the MassDEP I/A program for a concentration, the ongoing annual average performance of that system technology installed in its various locations in the watershed will meet the needs of the estuary. Performance of any nitrogen strategy should be based on ongoing performance data. MassDEP recommends considering the margin for error of its nitrogen removal estimates.

Opportunities for Regional Cooperation:

The Town of Bourne has engaged with neighboring communities to explore regional approaches to wastewater management and nitrogen mitigation. Bourne has initiated discussions with nearby municipalities, including Wareham and Falmouth, to align on strategies and solutions. These discussions have focused on coordinating sewer infrastructure expansions, sharing wastewater treatment capacities, and addressing nitrogen reduction goals collaboratively.

MassDEP suggests the town further its exploration on how it can collaborate with neighboring towns to address wastewater treatment and nitrogen abatement needs.

Wastewater Collection, Treatment, and Disposal:

The Buzzards Bay Wastewater Treatment Facility (WWTF), located at 33 Armory Way in Bourne, has an approved design flowrate of 100,000 gallons per day (gpd). Wastewater from Bourne's existing collection system is diverted through a main gravity interceptor to a pumping station at the Veteran's Memorial Community Center, across from the Bourne Main Street Pump Station. After settling in an equalization tank, influent wastewater undergoes solids screening

before treatment in three Membrane Bioreactors, which remove organics and contaminants. The treated effluent is then disinfected and dispersed through a soil absorption system.

The potential upgrades include the addition of advanced biological and tertiary treatment processes to ensure effluent meets stringent nitrogen limits. The facility is equipped with Sequencing Batch Reactors (SBRs) for biological treatment, post-equalization tanks for flow control, cloth media disc filters for tertiary treatment, and ultraviolet disinfection. The design of the upgraded WWTF incorporates future growth and inflow/infiltration (I/I) estimates, ensuring scalability to accommodate peak flow conditions. Current estimates project the facility will manage average annual flows ranging from 177,000 to 223,600 gallons per day (gpd), with a design peak capacity of 616,700 gpd when accounting for I/I.

MassDEP requires a WP11 application to process permit modifications and review plans for proposed facility modifications within the same application. If the town were to pursue the implementation of this sewer expansion, MassDEP may require a WP83 application for review of a hydrogeological analysis before the submittal of a WP11 application if the permit modifications will be desired more distant into the foreseeable time horizon.

The second municipal wastewater treatment facility in the Town of Bourne is the Bourne School Complex Wastewater Treatment Facility (WWTF) which serves Peebles Elementary, Bourne Middle, and Bourne High Schools on Waterhouse Road. It includes primary treatment, flow equalization, rotating biological contactors (RBCs), a secondary clarifier, a tertiary denitrification filter, disinfection, and a subsurface discharge system beneath the school fields. According to the Town, for Phase one, the Bourne Schools WWTF has capacity for the potential expansion of the sewer collection system to address the needs of the Megansett-Squeteague watershed. MassDEP suggests referring to the Small Wastewater Treatment System Guidelines for the recommended methodology to assess treatment facility capacity. TR-16 or an equivalent engineering resource is also acceptable. Additional assessment methods should also be considered and presented to ensure a comprehensive evaluation of the WWTF's actual capacity, performance, and ability to accommodate future flows.

According to Section 4.1.1 on page 19 of the Recommended Plan, the WWTF treats 8,000–10,000 gallons per day (gpd), with a design capacity of 35,400 gpd, leaving approximately 25,000 gpd available. However, the Phinneys Harbor Core Sewer Alternative may require 86,000 gpd, exceeding the facility's available capacity by 61,000 gpd. To address this shortfall, potential solutions include adding flow equalization tanks (FETs), expanding treatment capacity with an additional treatment train, constructing a second facility on the Bourne Schools Campus under the existing discharge permit, or upgrading the effluent discharge system through methods such as vertical wicks or additional disposal fields. The sewer expansion designs and potential modifications to the Bourne Schools WWTF were not preliminarily designed as part of the CWMP process.

the Needs Assessment of the CWMP include an asset analysis or an asset management plan of the Buzzards Bay WWTF and Bourne Schools WWTF. This section should include a detailed evaluation of its current operational capacity, current equipment condition, operation and preventative maintenance protocols and anticipated upgrades. The Needs Assessment should also address plans for managing landfill leachate, as this is another aspect of the town's wastewater management responsibilities.

MassDEP recommends that the Town of Bourne continue to refine its wastewater collection and treatment strategies.

Conclusion:

MassDEP notes that further hydrogeological review may be required for the proposed effluent disposal beds or any potential expansions. Such reviews will ensure that Bourne remains aligned with state and regional water quality objectives. MassDEP looks forward to working more closely with the Town of Bourne during the potential treatment facility expansion and hydrogeological analysis application processes. MassDEP offers pre-permitting technical assistance and CWMP guidance. These meetings are technical assistance work meetings in nature and are less like a regulatory compliance presentation. A well-defined plan will help ensure regulatory alignment, effective nitrogen mitigation, necessary and future oriented wastewater management and continued progress toward achieving water quality goals across Bourne's watersheds

Stormwater Management/National Pollutants Discharge Elimination System (NPDES):

The Project Proponent acknowledges its requirement to obtain a NPDES Stormwater Permit for its Construction Activities through a Notice of Intent (NOI) to EPA via the [Stormwater Discharges from Construction Activities | National Pollutant Discharge Elimination System \(NPDES\) | US EPA](#). for the development of a Storm Water Pollution Prevention Plan (SWPPP).

The Proponent is advised to consult with Sania Kamran (Kamran.Sania@epa.gov, 617- 918-1522) for questions regarding EPA's NPDES Construction General Permit requirements.

In addition, the Proponent is reminded that local Planning Boards (and/or other local authorities) may require stormwater controls beyond that of the Wetlands protection Act. These controls are usually created to keep stormwater onsite so as not to create nuisance conditions offsite.

Bureau of Waste Site Cleanup (BWSC) Comments

Based upon the information provided, the Bureau of Waste Site Cleanup (BWSC) searched its databases for disposal sites and release notifications that have occurred at or might impact the proposed Project area. A disposal site is a location where there has been a release to the environment of oil and/or hazardous material that is regulated under M.G.L. c. 21E, and the Massachusetts Contingency Plan [MCP – 310 CMR 40.0000].

There are no listed MCP disposal sites located at or in the vicinity of the site that would appear to impact the proposed Project area.

Interested parties may view a map showing the location of BWSC disposal sites using the MassGIS data viewer at [MassMapper](#). Under the Available Data Layers listed on the right sidebar, select "Regulated Areas", and then "DEP Tier Classified 21E Sites". MCP reports and the compliance status of specific disposal sites may be viewed using the BWSC Waste Sites/Reportable Release Lookup at: <https://eeaonline.eea.state.ma.us/portal/dep/wastesite/>

The Proponent is advised that if oil and/or hazardous materials are encountered during the install of sewer main lines addressing contamination might be accomplished using the Utility-Related Abatement Measures provisions at 310 CMR 40.0461 through 40.0469.

The Project Proponent is advised that if oil and/or hazardous material are identified during the implementation of this Project, notification pursuant to the Massachusetts Contingency Plan (310 CMR 40.0000) must be made to MassDEP, if necessary. A Licensed Site Professional (LSP) should be retained to determine if notification is required and, if need be, to render appropriate opinions. The LSP may evaluate whether risk reduction measures are necessary if contamination is present. The BWSC may be contacted for guidance if questions arise regarding cleanup.

Spills Prevention and Control: The Project Proponent is advised that a spills contingency plan addressing prevention and management of potential releases of oil and/or hazardous materials from pre- and post-construction activities should be presented to workers at the site and enforced. The plan should include but not be limited to, refueling of machinery, storage of fuels, and potential on-site activity releases.

The Project Proponent is advised that if contaminated media is encountered a Licensed Site Professional (LSP) must be employed or engaged to manage, supervise or actually perform the necessary response actions at the site for excavating, removing and/or disposing of contaminated soil or contaminated media (which includes contaminated sediment) must be conducted under the provisions of Massachusetts General Law Chapter 21E (and, potentially, c.21C) and all other applicable federal (including the Environmental Protection Agencies Toxic Substance Control Act - TSCA), state, and local laws, regulations, and bylaws. Contaminated media cannot be managed without prior submittal of appropriate plan to MassDEP (such as a Release Abatement Measure (RAM) Plan), which describes the proposed handling and disposal approach for any contaminated media encountered and health and safety precautions for those conducting the work. If contamination at the site is known or suspected, the appropriate tests should be conducted well in advance of the start of construction and professional environmental consulting services should be readily available to provide technical guidance to facilitate any necessary permits

Bureau of Air and Waste (BAW) Comments

Air Quality: Construction and operation activities shall not cause or contribute to a condition of air pollution due to dust, odor or noise. To determine the appropriate requirements please refer to:

310 CMR 7.09 Dust, Odor, Construction, and Demolition

310 CMR 7.10 Noise

Construction-Related Measures:

The Project Proponent reports: “Contractor and equipment are subject to 310 CMR 7 and MGL Chapter 90, Section 16B limiting vehicle idling on school grounds. As a baseline, the Project may also include MassDOT Diesel Retrofit requirements for construction equipment and vehicles to be used onsite (a mandatory requirement for any State Revolving Fund Project).”

In the absence of disclosing how this Project plans to comply, the Project Proponent is reminded of the following regulatory requirements:

- MassDEP requests that all non-road diesel equipment rated 50 horsepower or greater meet EPA's Tier 4 emission limits, which are the most stringent emission standards currently available for off-road engines. If a piece of equipment is not available in the Tier 4 configuration, then the Proponent should use construction equipment that has been retrofitted with appropriate emissions reduction equipment. Emission reduction equipment includes EPA-verified, CARB-verified, or MassDEP-approved diesel oxidation catalysts (DOCs) or Diesel Particulate Filters (DPFs). The Proponent should maintain a list of the engines, their emission tiers, and, if applicable, the best available control technology installed on each piece of equipment on file for Departmental review.
- MassDEP reminds the Proponent that unnecessary idling (*i.e.*, in excess of five minutes), with limited exception, is not permitted during the construction and operations phase of the Project (Section 7.11 of [310 CMR 7.00](#)). With regard to construction period activity, typical methods of reducing idling include driver training, periodic inspections by site supervisors, and posting signage. In addition, to ensure compliance with this regulation once the Project is underway, MassDEP recommends that the Proponent install signs limiting idling to five minutes or less on-site.

New Source Review:

Many industrial, commercial and institutional development activities have facility heating and supplemental or emergency power generation units associated with them that may require air quality permitting/plan approval from MassDEP before construction or operation. If required, such applicable equipment and/or activities must be certified through MassDEP's Environmental Results Program (ERP) at 310 CMR 7.26 or approved by MassDEP, prior to construction via the Plan Application program at 310 CMR 7.02, depending on equipment type, specifications, size, activities and/or emissions etc.

Smaller sized equipment/units such as, engines (emergency and non-emergency), combined heat and power (CHP) units and boilers may not require an air quality permit/plan approval but instead may be subject to 310 CMR 7.26 performance standards and ERP certification. For example:

- 310 CMR 7.26(30) thru (37) – Boilers; and
- 310 CMR 7.26(40) thru (45) – Engines and Combustion Turbines (including Emergency Engines and Turbines)

Learn more about these provisions at <https://www.mass.gov/how-to/compliance-certification-commercial-industrial-or-institutional-boiler> and <https://www.mass.gov/how-to/compliance-certification-stationary-engine-or-turbine>.

Some proposed facilities and/or activities may include process-related air emissions sources such as solvent cleaning, other disinfection, chemical reactors, solid or liquid material handling and storage. Equipment and/or activities and associated potential emissions that does not meet the applicability requirements of the ERP provisions, may require a plan approval pursuant to 310 CMR 7.02. Learn more about whether Plan Approval is required for your Project at: <https://www.mass.gov/guides/massdep-air-plan-approval-applications>.

The Air Pollution Control Staff in MassDEP's Boston and Regional Offices can provide assistance regarding the applicability of MassDEP's regulations for any such equipment and/or activities planned.

Should the Proponent decide to enroll any emergency generators in a demand response program, it may affect the regulatory status of emergency generators and trigger additional plan approval requirements. The Proponent is recommended to consult with the MassDEP Southeast Regional Office New Source Review, Air Permit Section staff before enrolling in a demand response program.

Resource Conservation and Recovery Act (RCRA): If the implementation of the Project will generate hazardous waste and/or waste oil, that entity must register with the MassDEP or EPA to obtain a permanent identification number for legally generating and managing regulated waste.

Solid Waste Management: The Project Proponent reports: "Any items to be removed or demolished during expansion of the existing Bourne School WWTF will be disposed of in accordance with Local, State, and Federal requirements by the Contractor. Any materials that are suitable for reuse by Bourne School District or the Town of Bourne will be returned to the District/Town for this use by the Contractor."

Solid Waste Comments:

In the absence of disclosing how this Project plans to dispose any of its solid waste, the Project Proponent is reminded of the following regulatory requirements:

1. *Tree removal/land clearing:* As defined in 310 CMR 16.02, clean wood means "discarded material consisting of trees, stumps and brush, including but limited to sawdust, chips, shavings, bark, and new or used lumber" ...etc. Clean wood does not include wood from commingled construction and demolition waste, engineered wood products, and wood containing or likely to contain asbestos, chemical preservatives, or paints, stains or other coatings, or adhesives. The Solid Waste section would like to note to the Proponent the following: wood is not allowed to be buried or disposed of at the Site pursuant to 310 CMR 16.00 & 310 CMR 19.000 unless otherwise approved by MassDEP. Clean wood may be handled in accordance with 310 CMR 16.03(2)(c)7 which allows for the on-site processing (i.e., chipping) of wood for use at the Site (i.e., use as landscaping material) and/or the wood to be transported to a permitted facility (i.e., wood waste reclamation facility) or other facility that is permitted to accept and process wood.
2. *Reuse of any demolition material requires submittal of MassDEP's BWP SW41 – Beneficial Use Determination – Restricted Applications.* The permit is intended to protect public health, safety and the environment by comprehensively regulating the reuse of waste materials as effective substitutes for a commercial product or commodity. Information pertaining to this requirement is available at <https://www.mass.gov/doc/instructions-sw-39-40-41-42-beneficial-use-determinations/download>.
3. *Compliance with Waste Ban Regulations:* Waste materials discovered or generated during construction that are determined to be solid waste (e.g., construction and demolition waste, clean gypsum wallboard) and/or recyclable material (e.g., metal, asphalt, brick, and concrete) shall be

disposed, recycled, and/or otherwise handled in accordance with the Solid Waste Regulations including 310 CMR 19.017: *Waste Bans*. Waste Ban regulations prohibit the disposal, transfer for disposal, or contracting for disposal of certain hazardous, recyclable, or compostable items at solid waste facilities in Massachusetts, including, but not limited to, metal, wood, asphalt pavement, brick, concrete, and clean gypsum wallboard. The goals of the waste bans are to: promote reuse, waste reduction, or recycling; reduce the adverse impacts of solid waste management on the environment; conserve capacity at existing solid waste disposal facilities; minimize the need for construction of new solid waste disposal facilities; and support the recycling industry by ensuring that large volumes of material are available on a consistent basis. Further guidance can be found at: <https://www.mass.gov/guides/massdep-waste-disposal-bans>.

4. *Asphalt, brick, and concrete (ABC) rubble*, such as the rubble generated during demolition must be handled in accordance with the Solid Waste regulations. These regulations allow, and MassDEP encourages, the recycling/reuse of ABC rubble. The Proponent should refer to MassDEP's Information Sheet, entitled "*Using or Processing Asphalt Pavement, Brick and Concrete Rubble, Updated February 27, 2017*", that answers commonly asked questions about ABC rubble and identifies the provisions of the solid waste regulations that pertain to recycling/reusing ABC rubble. This policy can be found on-line at the MassDEP website: <https://www.mass.gov/files/documents/2018/03/19/abc-rubble.pdf>.

If you have any questions regarding the Solid Waste Management Program comments above, please contact Jennifer Wharff at Jennifer.Wharff@mass.gov or Mark Dakers at Mark.Dakers@mass.gov.

Climate Change – Energy – Wastewater Treatment Plants

The Proponent should consider the potential impacts of climate change as part of the design and operation of the proposed wastewater and/or drinking water treatment facility. Wastewater and drinking water treatment plants are among the largest energy consumers in many cities and towns across Massachusetts.

Therefore, minimizing the life-cycle operational costs and associated greenhouse gas emissions will have long-term economic and environmental benefits for the community and the Commonwealth.

MassDEP suggests review of the following resources, as well as any other governmental, industry, or research institute reports to identify GHG and energy reduction strategies, and climate resilience and adaptation measures that the Proponent, as feasible, should commit to implement or continue to explore upon completion of the MEPA review. The resources listed below under Implementation also include potential funding sources.

Planning and Design:

- TR-16 – Guides for the Design of Wastewater Treatment Works (2011 Edition as Revised in 2016) issued by the New England Interstate Water Pollution Control Commission (NEIWPCC);

- BMP guidance documents (Evaluation of Energy Conservation Measures for Wastewater Treatment Facilities EPA 832-R-10-005, September 2010) <https://www.epa.gov/sites/production/files/2016-01/documents/p1008sbm.pdf>;
- EPA's Adaptation Strategies Guide for Water Utilities – 2015 https://www.epa.gov/sites/production/files/2015-04/documents/updated_adaptation_strategies_guide_for_water_utilities.pdf;
- EPA's Emerging Technologies and for Wastewater Treatment and In-Plant Wet Weather Management (2013).

Assessment:

- EPA's Strategies for Saving Energy at Public Water Systems - 2013 <https://www.epa.gov/sites/production/files/2015-04/documents/epa816f13004.pdf>;
- EPA's Energy Efficiency in Water and Wastewater Facilities – 2013 <https://www.epa.gov/sites/production/files/2017-06/documents/wastewater-guide.pdf>;
- EPA's Climate Resilience Evaluation and Awareness Tool (CREAT) – 2016 <https://www.epa.gov/crwu/creat-risk-assessment-application-water-utilities>; and
- Massachusetts Municipal Vulnerability Preparedness Program - <https://www.mass.gov/municipal-vulnerability-preparedness-program>.

Implementation:

- EPA – Reducing Operating Costs and Energy Consumption at Water Utilities – 2017 https://www.epa.gov/sites/production/files/2017-04/documents/water_utility_heat_pump_brochure_508.pdf;
- Massachusetts Clean Water and Drinking Water State Revolving Funds (SRF) Loan Assistance - <https://www.mass.gov/state-revolving-fund-srf-loan-program>;
- MA DOER's Green Communities Grant Program <https://www.mass.gov/green-communities-designation-grant-program>;

Proposed s.61 Findings

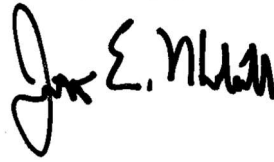
The “Certificate of the Secretary of Energy and Environmental Affairs on the Expanded Environmental Notification Form may indicate that this Project requires further MEPA review and the preparation of an Environmental Impact Report. Pursuant to MEPA Regulations 301 CMR 11.12(5)(d), the Proponent will prepare Proposed Section 61 Findings to be included in the EIR in a separate chapter updating and summarizing proposed mitigation measures. In accordance with 301 CMR 11.07(6)(k), this chapter should also include separate updated draft Section 61 Findings for each State agency that will issue permits for the Project. The draft Section 61 Findings should contain clear commitments to implement mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and contain a schedule for implementation.

Other Comments/Guidance

The MassDEP Southeast Regional Office appreciates the opportunity to comment on this EENF. If you have any questions regarding these comments, please contact George Zoto at

George.Zoto@mass.gov or Jonathan Hobill at Jonathan.Hobill@mass.gov.

Very truly yours,

A handwritten signature in black ink, appearing to read "Jon E. Hobill". The signature is stylized with a large, looped "J" and a cursive "Hobill".

Jonathan E. Hobill,
Regional Engineer,
Bureau of Water Resources

JH/GZ

Cc: DEP/SERO

ATTN:Gerard Martin, Regional Director

John Handrahan, Deputy Regional Director, BWSC
Seth Pickering, Deputy Regional Director, BAW
Jennifer Viveiros, Deputy Regional Director, ADMIN
Andrew Osei, Chief, Wastewater Management, BWR
Maggie Leary, Wastewater Management, BWR
Maissoun Reda, Chief, Wetlands, BWR
Whitney McClees, Wetlands, BWR
Brendan Mullaney, Chief, Waterways, BWR
Mark Dakers, Chief, Solid Waste, BAW
Jennifer Wharff, Solid Waste Management, BAW
Jeffrey Hunter, Solid Waste Management, BAW
Mark Poudrier, Chief, Air/Operating Permits, BAW
Christopher Redus, Air/Operating Permits, BAW
Angela Gallagher, Chief, Site Management, BWSC
Amanda Cantara, Site Management, BWSC
Ashley Bosse, Site Management, BWSC



Comment Details

EEA #/MEPA ID

16910

Comments Submit Date

2-23-2025

Certificate Action Date

2-24-2025

Reviewer

Alexander Strysky, (857)408-6957, alexander.strysky@mass.gov

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Organization

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Affiliation Description

Individual

Status

Opened

Comment Title or Subject

Topic: Bourne Comprehensive Wastewater Management Plan

Comments

i have reviewed the above plan. As a long-term seasonal resident of Pocasset, I am interested in restoration of the water quality of Buzzards Bay. The increasing algal growth in embayments I have observed over the past 60 years is a disgusting water quality hazard. Unfortunately, the plan proposed by Bourne to address this issue, no matter how well-intentioned, does not provide the required assurances that the plan can achieve water quality requirements, nor does it lay out a more conventional collection and treatment strategy when reliance on the alternative septs plan fails to attain needed nutrient reduction requirements.

The Town of Bourne has many communities of small closely spaced lots (less than 0.25-acres and smaller) that would be better served by a municipal wastewater solution. Just because the Town usurped its responsibility to install proven municipal wastewater technologies in the past, is no reason, to let them continue to saddle homeowners in these communities (many of whom are lower income) with the individual cost of solving the Town's wastewater problems.

Attachments

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Comment Details

EEA #/MEPA ID

16910

Comments Submit Date

2-24-2025

Certificate Action Date

2-24-2025

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Opened

Comment Title or Subject

Topic: Town of Bourne Comprehensive Wastewater Management Plan draft

Comments

Composting toilets are not included in the CWMP Draft Recommended Plan options for the Megansett-Squeteague Harbor watershed that I live in (Alternatives Analysis Table 2, page 14). Composting toilets should be included. They are allowed by the Town of Bourne Health Regulations, and State regulations 310 CMR 15.289 (3) (a). Application forms and instructions are available at Town Hall. General Use Individual Alternative (GUIA) nitrogen reducing systems are included in the plan. Composting toilets remove much more nitrogen than GUIA systems. Alternatives Analysis Table 2, page 14 gives expected nitrogen removal of 28% by GUIA systems, and 62% by composting toilets (more than twice the removal). The compost can be transported to a Wastewater Treatment Facility (WTF) by a licensed septage hauler in accordance with State Regulations. Since there are no WTFs receiving septage in the Meganett-Squeteague Watershed, the nitrogen would be removed from the Watershed. Page 19 of the Draft Recommended Plan states "Beginning in July 2025, individual homeowners located in the TMDL watersheds are required to upgrade their onsite septic systems to the Best Available Nitrogen Reducing Technology". A composting toilet removing twice as much nitrogen as a GUIA would be better technology. The Draft Recommended Plan Table 20, page 47: GUIA Opinion Probable Construction Costs - New Installation, \$42,425. Table 22, page 48: GUIA Operation, Monitoring and Maintenance Costs, average annual \$2,390. A self contained composting toilet with internal composting that is used like a regular toilet can be purchased for as little as \$2,000. The Sun-Mar Excel (\$2,050 <https://usa.sun-mar.com>) is a good example (recommended by a friend using one in another town on Buzzards Bay). It is self contained, and the urine is composted, not diverted. Installation cost would be a small fraction of the amount for GUIA systems (probably in the range of regular toilet installation). A small fan (35 watts) removes odors through a vent pipe. A small heater (250 watts) maintains temperature for composting. The heater is controlled by a thermostat and is only on part of the time. Sun-Mar estimates that the average power consumption is about 150 watts (0.15 KW) so electricity cost would be less than \$500/year at \$0.36/KWH. Disposal of the compost by a licensed septage hauler once a year should be less than the cost of pumping out a septic tank (about \$300) since the volume would be so small. So the operating costs should be about \$800/year or less. Houses with more than one bathroom could either install multiple self contained toilets, or a central compost tank connected to a number of toilets. The Sun-Mar Centrex 3000 connects to and composts from either waterless or ultra low flush (1 pint/flush) toilets. A number of homeowners are very concerned about the high cost of GUIA systems and might prefer less expensive composting toilets.

Attachments

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From: [William Grant](#)
To: [Strycky, Alexander \(EEA\)](#)
Subject: Bourne CWMP (EEA No 16910)
Date: Monday, February 24, 2025 11:56:23 AM

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Alex

My comments on the plan:

The Plan is more accurately called an “inchoate” plan, for it is not sufficiently “comprehensive” to provide a practical roadmap for addressing Bourne’s water quality needs,

As a concerned resident I was hoping for a plan mapping various possible paths to cleaner water beyond references to a possible Watershed Permit, the default option of installation of IA systems, and imprecise references to sewerage. In particular, there are few details of the proposed sewerage for Phinneys Harbor, leaving unanswered the question of whether the School Board would agree to the expansion, and vague about whether the expansion of the existing system is financially practical. What we have been given is a concept, not a plan of action.

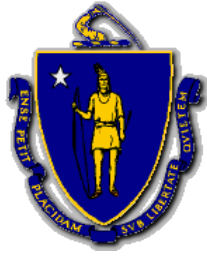
Another example of the myopic scope of the “comprehensive” plan is the lack of any reference to the town implementing a nitrogen fertilizer bylaw to reduce that source of nutrient loading in the embayments. Shellfish aquaculture does not appear to have been factored into the calculations.

With regard to Squeteague, the simply states “the 0 Megansett Road parcel is the best available location now for a proposed satellite wastewater treatment facility location for the Megansett-Squeteague watershed.” (Draft Recommended Plan, p.27) What further actions are necessary to determine whether this option should be pursued? An intermunicipal agreement for a Watershed Permit Megansett and Squeteague should be more fully explored, but again no reference to how to practically pursue this option.

“Adaptive Management” is fine if based on a concrete and detailed proposal, but this plan is an inadequate basis for further action. It would appear that a truly “comprehensive” plan would have to be devised to effectively address water quality issue in Bourne. This superficial and ineffectual plan should be rejected and a more thorough plan prepared.

William F. Grant
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COMMONWEALTH OF MASSACHUSETTS
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Maura Healey
Governor

Kim Driscoll
Lt. Governor

Rebecca Tepper
Secretary

Elizabeth Mahony
Commissioner

28 February 2025

Rebecca Tepper, Secretary
Executive Office of Energy & Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02114
Attn: MEPA Unit

RE: Bourne CWMP, Bourne, MA, EENF #16910

cc: Jo Ann Bodemer, Director of Energy Efficiency, Department of Energy Resources
Elizabeth Mahony, Commissioner, Department of Energy Resources

Dear Secretary Tepper:

We've reviewed the Expanded Environmental Notification Form (EENF) for the proposed project. The project is a long range wastewater system improvement project which may include new support building(s) (typically 10,000-sf) to house infrastructure.

Bourne is a stretch code community. Accordingly, any new built space (new building, addition, or renovation) which is heated and/or cooled, whether it is intended for human occupancy/use or otherwise, must follow the stretch code which includes rigorous requirements for envelope, ventilation energy recovery, thermal bridge mitigation, and low air infiltration. These requirements are designed to reduce space heating demands and enable ready use of electric air source heat pump space heating so that gas (or other fossil fuel) space heating can be avoided.

Bourne CWMP, EENF No. 16910
Bourne, Massachusetts

Accordingly, our recommendation for the project is to avoid fossil fuel use for space heating. If the building also includes service hot water, we recommend use of air source heat pump water heating.

Sincerely,

A handwritten signature in black ink, appearing to read 'Becca Edson'.

Becca Edson
Decarbonization Architect

A handwritten signature in black ink, appearing to read 'Paul F. Ormond'.

Paul F. Ormond, P.E.
Energy Efficiency Engineer
Massachusetts Department of Energy Resources