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April 3, 2020

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

PROJECT NAME : Barnstable Comprehensive Wastewater Management Plan
PROJECT MUNICIPALITY : Barnstable
PROJECT WATERSHED : Cape Cod
EEA NUMBER : 16148
PROJECT PROPONENT : Town of Barnstable
DATE NOTICED IN MONITOR : February 10, 2020

Pursuant to the Massachusetts Environmental Policy Act (MEPA; M.G. L. c. 30, ss. 61-62I) 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). The EENF was submitted to support the Proponent's request to file a Single EIR, rather than a Draft and Final EIR, pursuant to Section 11.06(8) of the MEPA regulations. The Proponent should submit a Single EIR in accordance with the Scope included in this Certificate.

Project Description

The EENF/Comprehensive Wastewater Management Plan (CWMP) described the Town of Barnstable's plan to address water quality management concerns resulting from population growth and increased development. The CWMP is a 30-year plan focused on traditional sewerage solutions to replace the current dependence on septic systems; these solutions will be implemented in three 10-year phases. The plan has been designed to address multiple goals and needs of the community, specifically: nutrient removal, pond protection, drinking water protection, economic development and other related concerns regarding wastewater management.

Project Site

The Town of Barnstable is located in the central section of Cape Cod. Its year-round population is 45,193 (US Census 2010) while seasonal population can grow to more than three times that amount. The Town is organized into seven villages, and contains eight watersheds (no geographic relationship to the villages) including the Popponesset Bay Watershed, Rushy Marsh Watershed, Three Bays System Watershed, Centerville River System Watershed, Halls Creek Watershed, Lewis Bay Watershed, Barnstable Harbor Watershed and a very small portion of the Scorton Creek Watershed. Of these watersheds, three are contained solely within the Town's borders (Centerville River System Watershed, Halls Creek Watershed and Rushy Marsh Watershed), while the rest are shared with neighboring communities. Five of the eight watersheds have a Total Maximum Daily Load (TMDL) for nitrogen.

A TMDL is the maximum pollutant load a water body can receive and still meet water quality standards. TMDLs are created through a cooperative process involving multiple agencies. In the example of establishing TMDLs for nitrogen on Cape Cod, the process began with the Massachusetts Estuaries Project (MEP), a collaborative effort among MassDEP, University of Massachusetts School of Marine Science and Technology (SMASST), and the United States Geological Survey (USGS). The MEP developed nitrogen thresholds for 70 estuaries in Southeast Massachusetts using a water quality model that predicts water quality changes resulting from land use decisions. The model is run with different watershed loading values to demonstrate that the "nitrogen threshold" can be met, which is the upper limit of nitrogen loading that can enter the estuary and still meet water quality goals. Once MEP has established the nitrogen thresholds, MassDEP takes those numbers and prepares a draft TMDL for the water body. The draft TMDLs are then sent to the United States Environmental Protection Agency (USEPA) for approval; after such approval, the TMDLs become enforceable. As of the submittal date of the EENF/CWMP, TMDLs are in place for Popponesset Bay, Scorton Creek, the Three Bays System, the Centerville River System, Halls Creek, and Lewis Bay.

The Town's existing wastewater infrastructure includes the Barnstable Water Pollution Control Facility (BWPCF) located in Hyannis and a smaller wastewater plant in Marstons Mills referred to as the Marstons Mills Wastewater Treatment Plant (MMWWTP). The BWPCF treats an average daily flow of 1.67 million gallons per day (mgd) and has a maximum-month average daily flow of 1.97 mgd (2018 flow data). The BWPCF is permitted for a treatment capacity of 4.2 MGD and an effluent disposal capacity of 2.7 mgd.

The Federal Emergency Management Agency (FEMA) prepared a series of Flood Insurance Rate Maps (FIRM), effective July 16, 2014, that depict flood zones across the town. Coastal Flood Zones with Velocity Hazard (VE zone) are located along the Town's northern and southern coasts and the 100-year flood plain extends landward from the coasts with varying Base Flood Elevations (BFE).

Permitting and Jurisdiction

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 State Agency

Actions and involves the construction of one or more new sewer mains of ten or more miles in length. The project also exceeds the ENF threshold at 301 CMR 11.03(3)(b)(1)(f) because it involves the alteration of one half or more acres of any other wetlands. The project requires a Sewer Connection/Extension Permit and Groundwater Discharge Permit from Massachusetts Department of Environmental Protection (MassDEP) and a State Highway Access Permit from the Massachusetts Department of Transportation (MassDOT).

The project also requires review under the Massachusetts Endangered Species Act (MESA) by the Natural Heritage Endangered Species Program (NHESP) and review by the Massachusetts Historical Commission under Section 106 of the National Historic Preservation Act of 1966 and M.G.L. Chapter 9, sections 26-27C (950 CMR 70-71). The project may require Federal Consistency Review with the Massachusetts Coastal Zone Management Office. It is subject to review under the May 2010 MEPA Greenhouse Gas (GHG) Emissions Policy and Protocol (“the Policy”).

The project will require an Order of Conditions (OC) from the Barnstable Conservation Commission (or in the case of an appeal, a Superseding Order of Conditions (SOC) from MassDEP). The project is subject to review by the Cape Cod Commission (CCC) to determine its consistency with the Section 208 Area-wide Water Quality Management Plan. The project will also require a National Pollutant Discharge Elimination System (NPDES) Construction Activities Permit from the U.S. Environmental Protection Agency (EPA) and authorizations from the U.S. Army Corps of Engineers (ACOE) under the General Permits for Massachusetts.

The Town will receive Financial Assistance from the Commonwealth through the State Revolving Fund (SRF). Therefore, MEPA jurisdiction is broad and extends to all aspects of the project with the potential to cause Damage to the Environment as defined in the MEPA regulations.

Environmental Impacts

As described in the EENF, implementation of the CWMP Recommended Plan will add one acre of impervious area and impact 390,000 sf (8.95 acres) of Land Subject to Coastal Storm Flowage (LSCSF) and 10,000 sf (0.22 acres) of Bordering Land Subject to Flooding (BLSF) for the proposed sewer infrastructure installation.

The project is intended to improve aquatic health and water quality by providing more effective wastewater treatment. Measures to avoid minimize, and mitigate project impacts include the use of erosion and sediment control measures during construction, and limiting areas of disturbance by locating work within previously disturbed areas where possible. Additional mitigation commitments should be identified in the Single EIR.

Single EIR Request

The Town requested that it be allowed to file a Single EIR in lieu of a Draft and Final EIR. The MEPA regulations indicate 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.

The Proponent submitted an EENF to satisfy the requirements for a Single EIR and, as required, the EENF was subject to an extended comment period. In addition, a two-week extension of the 30-day comment period was granted at the request of the Town to prepare and distribute supplemental information.¹ The comment period closed on March 27, 2020. The EENF provided a detailed project description, a baseline for evaluating environmental impacts and a comprehensive alternatives analysis. The EENF identified how the project is designed to achieve consistency with regulatory standards, including water quality standards and measures to avoid, minimize and mitigate project impacts. Comments from MassDEP, NHESP and the Cape Cod Commission (CCC) identify issues that can be addressed in a Single EIR.

Special Review Procedure

While the Town's initial CWMP may be reviewed at a master planning level through a Single EIR, the plan sets forth a 30-year buildout scenario with varying levels of details for future phases. In particular, it is not yet clear, among other issues, whether specific phases will have unique or different impacts on natural resource areas from those currently known, whether the Town will choose to formally amend its CWMP to include non-traditional methods of water quality management for purposes of TMDL compliance, and whether regional solutions will become more viable and eventually obviate the need for a Town-specific CWMP. To outline the parameters for future reviews based on these and other similar circumstances, a Special Review Procedure (SRP) is warranted.

The Town has agreed to work with the MEPA Office to develop a SRP and submit a proposed framework prior to or together with the Single EIR.² The proposed SRP framework should address the methods for MEPA review in the circumstances outlined above, as well as other anticipated factors that may warrant special consideration. The SRP should also address the types of project changes that will require Notice of Project Change filings.

Review of the EENF

The CWMP included a comprehensive review of existing water quality in the Town's coastal waters, freshwater ponds, and groundwater sources of drinking water. The Town has continued to participate in the Massachusetts Estuaries Project (MEP) to conduct water quality

¹ Supplemental information entitled EENF Addendum dated March 12, 2020 from Griffin Beaudoin on behalf of the Town.

² Email stating that the Town is willing to work with the MEPA office to develop special review procedures for the Barnstable CMWP project prior to submission of the EIR dated March 24, 2020 from Griffin Beaudoin on behalf of the Town.

sampling and identify nutrient loading problems for the Town's coastal embayments. As stated above, the Technical Reports produced by the MEP are used by MassDEP and EPA to establish TMDLs for nitrogen loading to these coastal embayments and their tributaries.

CWMP

The CWMP documented that wastewater discharges from septic systems are the most significant source of nitrogen loading to coastal embayments. It outlined a long-term, three-phase approach to reducing nitrogen by managing wastewater through a variety of traditional means, such as sewerage, expansion and improvements of the current wastewater treatment facility, and construction of new effluent disposal sites. It also outlined non-traditional methods including the control of fertilizer use and stormwater, public education, implementation of innovative and alternative (I/A) technologies, use of permeable reactive barriers (PRB), and wetland restoration.

The CWMP documented how the Town plans to address the water quality and wastewater needs of the community in each of three phases (Phase 1, Phase 2 and Phase 3) of the 30-year plan. The 30-year plan consists of primarily a conventional approach of sewer expansion, but the Town has designed the plan with the ability to integrate non-traditional projects in the last phase (Phase 3) based on demonstration projects. Based on data generated from future potential demonstration projects, the Town will assess how the CWMP can be modified to implement traditional strategies with the incorporation of nontraditional approaches. The focus area of the future non-traditional strategy will be located in the Three Bays Watershed.

A key component of the CWMP is an Adaptive Management Plan (AMP) that will include the reassessment and adjustment of the CWMP as phases of the plan are implemented. The AMP will be informed by the findings of a Wastewater Implementation Committee (WIC) that will monitor the progress of the CWMP, the results of on-going water quality monitoring in the watersheds, WWTF water quality reports, and population growth data. The AMP will assist the Town in evaluating its progress in attaining water quality goals, including compliance with the TMDLs, and adjusting the design or phasing of structural and non-structural components of the CWMP. It will also enable the Town to modify the Preferred Alternative's phasing, timing, or the specific areas to be sewerage based on the results of the earlier implementation phases to comply with the anticipated nitrogen TMDLs.

The CWMP provided a summary of wastewater planning that has occurred to date, described existing conditions and land uses in the project area, identified future needs, and evaluated system alternatives to meet identified wastewater treatment demand and water quality objectives.

Needs Assessment

The CWMP included a needs assessment that identified Areas of Concern (AOC). The Town of Barnstable is currently exceeding the TMDL for nitrogen in its coastal embayments. The primary source of the problem is stormwater discharges, septic system failures, boat waste discharges, wildlife and other sources. Hydrographic modeling by MEP identified the needs assessment presented in the CWMP. The needs assessment was based on updated data related to

the original criteria and new information on I/A septic systems, rare species habitat, and areas with established TMDLs.

The Town completed a needs assessment in 2011 that was based on the presence of water supply protection zones, soil characteristics, density of lots, high groundwater, location within flood zones, septic system failures, shellfish closure areas, industrial land uses and filled wetlands. The assessment was completed to determine the nutrient loads generated by existing and future build-out of residential and commercial development in Barnstable. In developing the analysis, the Town reviewed the total number of parcels located within each of the watersheds for the marine embayments surrounding Barnstable and freshwater pond watersheds, and estimated the water use, wastewater flows and nutrient loading to be generated. Existing and future development parcels were evaluated to determine the need for sewers to address the water quality requirements and TMDLs of the Town's marine and freshwater water resources.

Development of an CWMP is an important step toward meeting TMDLs and restoring impaired waters. However, the plans to meet TMDL requirements for nutrient loading must always consider source reduction as the primary means of long-term nutrient control. Source reduction usually focuses on controlling watershed land use loads generated from human activity. Source reduction can include, but are not limited to, constructing new sewer systems, upgrading existing sewer systems (e.g. providing higher levels of treatment and eliminating combined sewer outflows), eliminating fertilizers, reducing runoff from impervious surfaces, reducing impervious surfaces, and tightening standards for new and upgraded septic systems.

In addition to source controls, successful nutrient management plans may include alternative nutrient control strategies to achieve the desired nitrogen concentrations specified in the TMDL and MEP reports. The EENF provided a detailed discussion of the source controls proposed.

Alternatives Analysis

The CWMP developed multiple water quality management scenarios to meet nitrogen removal goals identified in the needs assessment and the MEP studies. The scenarios reflect a broad array of options, including combinations of sewerage, treatment facilities (including regional treatment facilities), effluent recharge sites, discharge of treated wastewater outside the watershed, and various levels of non-structural components such as I/A septic systems and permeable reactive barriers (PRB). The scenarios were intended to provide a screening-level analysis from which a subset would be selected, refined, and further analyzed. The Town determined that five of these scenarios warranted further analysis. Three additional scenarios were developed to evaluate regional wastewater alternatives.

The alternatives were evaluated and compared on the basis of cost, design requirements and reliability of technology, and construction impacts. The Town selected the Preferred Alternative (as presented previously in the Project Description section) because it will collect wastewater from a sufficient number of developed parcels throughout the Town and Popponesset Bay Watershed and the Cotuit Bay Subwatershed of the Three Bays Watershed to meet nitrogen removal requirements and provide sewer infrastructure to economic growth districts. It will meet

MEP and TMDL nitrogen reduction thresholds and can be phased in a manner that provides implementation flexibility.

Preferred Alternative

The Preferred Alternative has been designed to treat an average daily flow of 1.77 million gallons expected from the areas to be sewered, remove 176 kilograms per day (kg/day) of nitrogen after all three phases have been completed. Phase 1 in the first ten years is designed to treat an average daily flow of 782 thousand gallons per day and remove 78 kg/day of nitrogen, which is 44% of the total proposed of nitrogen removal for the project. Phase 2 in years ten to twenty years is designed to treat an average daily flow of 653 thousand gallons per day and remove 65 kg/day of nitrogen, which is 37% of the total proposed of nitrogen removal for the project. Phase 3 in years twenty to thirty years is designed to treat an average daily flow of 782 thousand gallons per day and remove 33 kg/day of nitrogen, which is 19% of the total proposed of nitrogen removal for the project. Please see Phasing Plan Statistics table below:

Phasing Plan Statistics Table

| | Phase 1 (0-10 Years) | Phase 2 (10-20 Years) | Phase 3 (20-30 Years) | Total |
|-----------------------------------|---------------------------------|----------------------------------|----------------------------------|------------------|
| WW Captured (gpd) | 782,000 | 653,000 | 335,000 | 1,770,000 |
| Load N Removed (kg/day) | 78 | 65 | 33 | 176 |
| Number of Parcels Affected | 4,610 | 3,130 | 2,100 | 9,870 |
| Approximate Road Miles | 90 | 60 | 40 | 190 |
| % of N Removed by Plan | 44% | 37% | 19% | 100% |

***(*wastewater: WW; nitrogen: N*)

The Preferred Alternative identified in the CWMP will be implemented in following three phases:

PHASE 1 (0-10 Years)

- Construction of sewer infrastructure along Route 28 to address nutrient related issues within the Three Bays watershed. The Route 28 sewer infrastructure will be the major infrastructure to convey flow from westerly portions of the Town to the Barnstable Water Pollution Control Facility (BWPCF) located in Hyannis.
- Sewer expansion adjacent to Wequaquet Lake, Bearses Pond, Shallow Pond, Long Pond, Red Lily Pond, Lake Elizabeth, and Filenes Pond to address deteriorating water quality.
- Sewer expansion to accommodate identified economic development areas including along the Route 28, Old Yarmouth Road, Attuck’s Lane/Route 132, Kidd’s Hill, Independence Park, and Hyannis Harbor.
- Sewer expansion within the flood zones in the Craigville and Long Beach region to address septic system issues in the area.
- Sewer expansion adjacent to Prince Cove and Warren’s Cove (most impaired waterbodies in the Three Bays Watershed) and the Marstons Mills River.
- Modifications at BWPCF including upgrades to aeration, denitrification upgrades, and upgrades to solids handling.
- Identification, permitting and construction of new effluent disposal site(s).

- Pursuit of a regional sewer option at Joint Base Cape Cod (JBCC).
- Implementation of non-traditional demonstration projects along the Marstons Mills River System (Mill Pond Dredging to cranberry bogs), together with monitoring and analysis of results.
- Continued embayment monitoring.

PHASE 2 (10-20 Years)

- Continued westerly sewer expansion along Route 28.
- Continued sewer expansion within the Centerville River Watershed, specifically the Centerville River East subwatershed and expansion adjacent to Bumps River.
- Sewer expansion into the Nye's Neck region to complete sewer expansion surrounding all of Wequaquet Lake.
- Sewer Expansion to areas south of Craigville Beach Road east of Covell's Beach.
- Sewer expansion into the Millway subwatershed (the one sub-watershed within the Barnstable Harbor Watershed requiring septic load removal per the MEP report).
- Sewer expansion within the Lewis Bay Watershed in the General Patton area and northern Hyannis Port.
- Continued sewer expansion within the Three Bays Watershed, directly adjacent to subembayments requiring septic load removal (Prince Cove and North Bay), to address areas with shortest groundwater travel times.
- Continued monitoring and analysis of non-traditional demonstration projects.
 1. During this phase, it is the Town's intention to present the monitoring and analysis of the non-traditional approaches to the regulatory agencies.
 2. If, as anticipated, the analysis of the monitoring program determines that the nontraditional approaches have improved conditions within the Three Bays Watershed, the Town would then enter discussions with regulatory agencies to pursue non-traditional "credits" in an effort to minimize the required sewer expansion proposed in Phase 3. The Town is not proposing any non-traditional "credits" at this time and has designed the sewer expansion plan to achieve the required septic load removals by traditional approaches only.
- Continued embayment monitoring.

PHASE 3 (20-30 Years)

- Continued sewer expansion into the northerly portion of the Three Bays Watershed.
- Continued sewer expansion within the Lewis Bay/Halls Creek Watershed.
- Continued monitoring and analysis of non-traditional projects and follow-up with regulatory agencies.
- Continued embayment monitoring.

In addition to the three phases of the 30-year plan, the CWMP also documented how the Town will conduct a parallel "3-stage" sewer expansion plan to address the wastewater needs in the Popponesset Bay Watershed and the Cotuit Bay Subwatershed of the Three Bays Watershed. The timing and execution of the 3-stage sewer expansion plan is subject to the involvement and collaboration of adjacent communities who also contribute nitrogen loads into these watersheds. The term "stages" was used for these sewer expansion areas because they do not have a

determined schedule as it is assumed that these areas would be served by a western treatment and disposal solution to accommodate the sewer expansion. The original plan developed by the Water Resources Advisory Committee (WRAC), recommended approaching these areas via an inter-municipal agreement (IMA). However, in order to address water quality concerns in Shoestring Bay and Cotuit Bay that would not be addressed via nitrogen sharing in an IMA, there is a desire for traditional wastewater solution in these areas. If a westerly solution becomes a reality, the Town intends to pursue sewer expansion the areas identified in the stages.

Conclusion

I recognize that the impacts caused by the discharge of nitrogen through both private septic and municipal sewer systems to surrounding water bodies can be severe and that this is a significant issue for towns on Cape Cod. The EENF describes a thorough evaluation of Barnstable's needs for wastewater and nutrient management. Specifically, much of the recommended plan is driven by the findings of the MEP which documented resource impairment from excess nitrogen loads. I support the comprehensive planning for wastewater management and applaud the effort that has gone into the development of this CWMP. In addition, the adaptive management approach proposed in this plan provides a flexible management framework that allows for changes to the planned implementation schedule, based upon future unknown variables, such as changes in water quality, future build-out rates in different watersheds, and economics.

Comments from State agencies and environmental groups are generally supportive of the Town's effort in preparing the CWMP. Based on review of the EENF, consultation with State Agencies and review of comment letters, I have determined that the Proponent may submit a Single EIR. This decision to allow a Single EIR is conditioned upon the Town's agreement to establish a SRP to allow for additional public review and input on future phases of the CWMP as information and plans are developed. The Single EIR should be prepared in accordance with the following Scope.

SCOPE

General

The Single EIR should follow Section 11.07 of the MEPA regulations for outline and content, as modified by this Scope. The Single EIR should identify and describe any changes to the project since the filing of the EENF and provide an update on State, local and federal permitting.

Project Description

The Single EIR should include an executive summary, it should identify significant environmental benefits and impacts, and measures that will be taken to avoid, minimize and mitigate adverse impacts. The Single EIR should describe the planning process that has occurred to date, and the proposed schedule for the remaining phases of planning, design, environmental permitting and review, and construction. Information should be provided for each area where

construction is proposed, including maps that show where sewer lines, cross-country easements, pumping stations, and other facilities will be located, to the extent it is available when the Single EIR is submitted.

The Single EIR should discuss the state permitting process for this project and describe how it will meet all applicable performance standards. I encourage early coordination with MassDEP during preparation of the Single EIR as requested in the agency's comments.

CWMP

The Single EIR should include the following supplemental information as related to the CWMP:

Alternatives Analysis

The Preferred Alternative presented in the EENF does not rely on any percent nitrogen removal credit for the non-traditional components of the CWMP, including dredging, aquaculture, land use controls and open space acquisition, and stormwater management and fertilizer use reduction programs and provided little detail on these non-traditional components of the CWMP. Regardless of the fact that the Town is not seeking any percent nitrogen removal credit, the Single EIR should provide a conceptual description of non-traditional nitrogen reduction measures that it intends to implement through demonstration projects assist to achieve the nitrogen removal, including, in addition to water quality benefits, a conceptual description of environmental impacts and mitigation measures to the extent this can be identified at this stage. The proposed SRP framework should include procedures to review non-traditional methods of nitrogen removal, either together with the CWMP or outside any review procedures applicable to the CWMP and/or any subsequent amendments.

In addition, the Single EIR should provide more detail about the water quality embayment monitoring program described under the Preferred Alternative, including the general approach to be used, how it will be implemented, monitoring locations, and water quality parameters to be measured. It should address how the monitoring program will be designed to evaluate the effectiveness of non-traditional treatment options.

Regional Planning

The Town is investigating several opportunities for regional cooperation with neighboring towns. Many local studies have shown that economies of scale from a cost savings and sustainability perspective offer significant advantages to regional solutions. Barnstable shares several watersheds with neighboring communities and is investigating community partnerships with them. The Town shares the Popponesset Bay Watershed with Sandwich and Mashpee. The Towns have executed an inter-municipal agreement (IMA) to establish a work group. The objective of the work group is to come to agreement on a formula for allocation of responsibilities and costs, establish a municipal fiscal agent lead. The EENF also discusses that there are water quality concerns in the Shoestring Bay Subwatershed of Popponesset Bay and the Cotuit Bay Subwatershed of the Three Bays Watershed that would not be addressed via nitrogen

trading in the IMA. As aforementioned, a potential “westerly solution” would allow Barnstable to carry out the 3-stage sewer expansion plan addressing those concerns.

The Town of Barnstable has also been participating in discussions with the Upper Cape Communities in an effort to form an Upper Cape regional treatment and disposal solution at Joint Base Cape Cod (JBCC). The EENF states that Barnstable, Bourne, Falmouth, Mashpee and Sandwich are conducting a regional evaluation of wastewater discharge options on Joint Base Cape Cod JBCC. Specifically, the EENF also states that the Towns are discussing the possibility of utilizing the existing wastewater treatment facility at JBCC, which currently consists of a treatment plant and four infiltration basins northwest near the Cape Cod Canal, as a regional facility. Comments from MassDEP express support for the regional efforts of the Upper Cape Communities and Barnstable and will continue provide regulatory guidance.

The Single EIR should provide updates on opportunities for wastewater planning on a regional scale identified in the EENF, including its coordination with Bourne, Falmouth, Mashpee and Sandwich to establish nutrient loadings and discussions related to the potential use of the JBCC wastewater facility. In addition, the NHESP notes that the four existing infiltration basins at JBCC near the Cape Cod Canal are located within the Camp Edwards Wildlife Management Area. Chapter 47 of the Acts of 2002 transferred the care, custody and control of the northern 15,000 acres of JBCC to the Division as the Camp Edwards Wildlife Management Area to conserve fish and wildlife resources for the benefit of the citizens of the Commonwealth. I remind the Town that any projects or activities within the Camp Edwards Wildlife Management Area, including but not limited to any potential upgrades to or expansion of existing wastewater treatment facilities, would require review and approval by the NHESP. To the extent these planning efforts result in regional wastewater management solutions that obviate the need for town-specific CWMPs, the SRP framework should propose a mechanism for conducting appropriate MEPA reviews.

Adaptive Management Plan

The EENF discusses how an Adaptive Management Plan (AMP) will allow for a systematic and prescribed process to report on the Town’s activities and to incorporate new technical information and potential agreements among the towns in the shared watersheds. The AMP will assist the Town to evaluate the Town’s compliance with established TDMLs and identify the need for adjustments or mid-course corrections to subsequent phases of the structural and non-structural components of the Preferred Alternative program.

Comments from MassDEP recognize that this the AMP is subject to modification based on partnerships with towns that share common watersheds and the advancement of nutrient management strategies and technologies. The Single EIR should provide a detailed description of the Town’s proposed AMP and its water quality monitoring program in the Town of Barnstable.

Land Use and Alteration

The Single EIR should provide an estimate of the total amount of alteration associated with the proposed project in greater detail than what was provided in the EENF (including areas

to be altered for sewer mains, pump station impacts, and other project components). The Single EIR should include a breakdown showing the amount of alteration for different project elements. The Single EIR should clarify the location, type and amount of alteration in previously undisturbed areas.

The Single EIR should clarify the amount of new impervious area associated with the construction of the components of the Town's CWMP. The Single EIR should describe how the Town's proposed stormwater management system will be designed and constructed to be consistent with MassDEP's stormwater management regulations and policy standards and avoid and minimize adverse impacts associated with any new impervious area. The Single EIR should describe proposed measures to manage stormwater during project construction.

Growth Management

Executive Order #385 requires that State and local agencies engage in protective and coordinated planning oriented towards resource protection and sustainable economic development. For reasons of both environmental protection and fiscal prudence, investments in public infrastructure should be carefully targeted toward those areas for which clear existing needs have been established and for areas where denser development is appropriate, thereby relieving development pressures on open space, agricultural lands, and other valuable natural resources.

The Single EIR should identify parcels located within the proposed sewer service areas that are undeveloped or that have development constraints due to the lack of sewers, and compare the potential secondary growth impacts that may be induced by public sewers with local and regional growth management policies and zoning. It should examine what regulatory or physical constraints would remain on home expansions after sewers are constructed, and whether such expansions might have unanticipated impacts on estimated wastewater flows and water use.

Wetlands and Waterways

According to the EENF, the project will impact LSCSF and BLSF. Although not indicated in the EENF, the project may qualify as a limited project pursuant to 310 CMR 10.53(3)(d) for the construction of underground public utilities (sewer lines). In addition, construction of wastewater treatment plants' related structures are exempt from the requirements for Riverfront Area pursuant to 310 CMR 10.58(6)(h). According to the EENF, the majority of work within these areas will occur within paved right-of-way, will be temporary in nature, and will be restored to original conditions following completion of construction. The Single EIR should identify areas of impacts to wetland resource areas and describe mitigation measures. It should address the project's compliance with appropriate standards of the Wetlands Regulations (310 CMR 10.00).

The Single EIR should also delineate on a plan of reasonable scale all environmental resources areas located within areas proposed for sewerage, including wetlands, drinking water supplies, sensitive habitats, fisheries, designated Areas of Critical Environmental Concern (ACEC), Article 97 lands, historic resources, and agricultural lands. Where it has been

demonstrated that impacts are unavoidable, the Single EIR should demonstrate that the impacts have been minimized, and that adequate mitigation will be pursued.

I note that any proposed sewer lines that cross over or under tidelands or tidal rivers and streams will likely require a Chapter 91 License from MassDEP. The Single EIR should include information on which future phases of the CWMP are located in Chapter 91 jurisdictional areas or landlocked tidelands subject to a Public Benefits Determination by the Secretary of EEA.

Rare Species

The Town of Barnstable's ponds, bays and estuarine waters provide critical foraging, breeding, migration and over-wintering habitats for a suite of state-listed rare species. Portions of Barnstable are mapped as Priority Habitat for state-listed rare species. All projects proposed within Priority Habitat, which are not otherwise exempt from review pursuant to 321 CMR 10.14, require review through a direct filing with the Natural Heritage and Endangered Species Program (NHESP) within the Division of Fisheries and Wildlife pursuant to the Massachusetts Endangered Species Act (M.G.L. c. 131A) and its implementing regulations (MESA; 321 CMR 10.00).

As described in the EENF, a portion of the phased sewer main installations is located near or within Priority Habitat for state-listed rare species. According to comments from NHESP, based on its review of the EENF it appears that the proposed work is exempt from MESA review (321 CMR 10.14). However, if proposed activities do not meet the MESA exemptions, a checklist for these activities must be filed with NHESP. The Town should submit detailed construction plans to NHESP to confirm the exempt status.

If NHESP should subsequently find that the project will require a Conservation and Management Permit pursuant to MESA, the Single EIR should analyze the impacts to rare or endangered species and evaluate avoidance/mitigation strategies. I ask that the Town continue to work closely with NHESP and consult with the Barnstable Conservation Commission during the preparation of this section of the Single EIR. The Single EIR should identify necessary project construction and post-construction conditions and commitments to avoid an adverse impact to resource area habitats of state-listed species located within and adjacent to the project areas. The Single EIR should report on the results of the Town's consultations with NHESP. If sufficient detail is not available to conduct a full evaluation of all phases, the Town should propose procedures in the SRP to enable a review of rare species impacts as appropriate during future phases of the CWMP buildout plan.

NHESP's comments indicate that, in addition to the proposed sewerage, any proposed upgrades to or expansions of the wastewater treatment facilities would require review by the NHESP for compliance with the MESA that because they are located within Priority Habitat. The Single EIR should address applicability of any permitting requirements by NHESP in the manner described above.

Wastewater / Facility Upgrades

The EENF describes that the Barnstable Water Pollution Control Facility (BWPCF) discharges all of its treated wastewater effluent to disposal sites at the treatment facility. The Town is planning to invest in maintenance and improvement of existing infrastructure, including pump stations, collection system upgrades, and infrastructure to minimize infiltration and inflow (I/I). The Town is planning to upgrade and expand the facility's treatment capacity throughout Phase 1 of the CWMP with improvements to the reactor trains, modifications of the secondary clarifier and expansion of the aeration system. The goal is to reduce the annual effluent nitrogen concentration while accommodating the anticipated new flow from sewer expansion projects.

In 2017, MassDEP conservatively lowered the disposal capacity in the Town's groundwater discharge permit to allow time to study the disposal capacity and understand the potential downgradient hydrogeological impacts that may result from increased sewer flows. Where soil and groundwater conditions are favorable for recharge of groundwater, treated sewage effluent can infiltrate into the soil and move down to the groundwater creating a recharge capacity. The lower level of soils then act as a natural filter and can remove essentially all suspended solids, biodegradable materials, bacteria, viruses, and other microorganisms. Significant reductions in nitrogen, phosphorus, and heavy metals concentrations can also be achieved. The preliminary findings presented in the EENF indicate that the estimated average annual recharge capacity of the BWPCF is 2 mgd when the depth to groundwater is less than 8 feet at a downgradient receptor. The CWMP states that the annual average flow is not expected to reach 2 mgd until 2027. MassDEP supports the Town's current plan to maintain flows below 2 mgd until the Town designs, permits and constructs the new disposal effluent sites.

MassDEP supports the Town's current plan to maintain flows below 2 mgd until the Town designs, permits and constructs the new disposal sites. The Single EIR should present the proposed locations and preliminary designs for the proposed new disposal sites. As requested by MassDEP. MassDEP also requests that the Town investigate and permit additional wastewater sites in parallel with the wastewater treatment upgrades planned Phase 1. The Town should continue consulting with MassDEP and present the results of the discussion in the Single EIR.

In addition, the Single EIR should include any identified upgrades and or modifications of the wastewater treatment facilities through Phase 1, and, to the extent future upgrades are anticipated, either provide details on those upgrades or a process by which they could be reviewed through the SRP if relevant thresholds are met or exceeded.

Climate Change

Governor Baker's Executive Order 569: Establishing an Integrated Climate Change Strategy for the Commonwealth (EO 569; the Order) was issued on September 16, 2016. The Order recognizes the serious threat presented by climate change and directs agencies within the administration to develop and implement an integrated strategy that leverages state resources to combat climate change and prepare for its impacts. The Order seeks to ensure that Massachusetts will meet greenhouse gas (GHG) emissions reduction limits established under the Global Warming Solution Act of 2008 (GWSA) and will work to prepare state government and cities

and towns for the impacts of climate change. Review of these issues through the GHG Policy and requirements to analyze the effects of climate change through EIR review is an important part of this statewide strategy. These analyses inform State Agencies and proponents' understanding of a project's GHG emissions and a project's vulnerability to the effects of climate change.

Adaptation and Resiliency

The Town is a participant in the Commonwealth's Municipal Vulnerability Preparedness (MVP) program. The MVP program is a community-driven process to define natural and climate-related hazards, identify existing and future vulnerabilities and strengths of infrastructure, environmental resources and vulnerable populations, and develop, prioritize and implement specific actions the Town can take to reduce risk and build resilience.

Components of the wastewater collection infrastructure, such as proposed pump station sites, appear to be located within coastal flood zones. The Town should consider alternative locations for the infrastructure proposed to be sited in these locations, or to otherwise implement climate change adaptation measures to protect the pump stations. The Single EIR should review alternative locations for system components, such as pump stations, including locations outside the floodplain. It should identify design features that could increase the resiliency of the proposed infrastructure under future sea level conditions. The Town should consult the best available data on climate change predictions, including data available on the resilientMA.org website, to develop climate change scenarios for the project and identify potential adaptation measures for the appropriate design life of the project. EEA's Climate Change Adaptation Report (September 2011) and the Town's Climate Change Vulnerability Assessment (dated December, 2019) provide additional resources to assist in this analysis. The Single EIR should discuss climate resiliency considerations made in designing and implementing other components of the CWMP, including the siting and construction of new sewer mains.

Greenhouse Gas Emissions

This project is subject to review under the May 5, 2010 MEPA GHG Policy. The Policy requires Proponents to quantify carbon dioxide (CO₂) emissions and identify measures to avoid, minimize or mitigate such emissions. The analysis should quantify the direct and indirect CO₂ emissions of the project's energy use. Direct emissions include on-site stationary sources, which typically emit GHGs by burning fossil fuel for heat, hot water, steam and other processes. Indirect emissions result from the consumption of energy, such as electricity, that is generated off-site by burning of fossil fuels, and from emissions from vehicles used by employees, vendors, customers and others. The Policy directs proponents to use applicable building codes to establish a project emissions baseline that is "code-compliant." However, there is no building energy code equivalent that applies specifically to WWTFs or energy use models (such as eQUEST) designed to estimate the projected energy use of the WWTF processing energy loads.

The Single EIR should include a more project-specific GHG evaluation of emissions associated with modification to the WWTF and any other facilities, such as pump stations, that may emit GHG. It should establish a Base Case and an as-proposed Preferred Alternative Case along with providing the other information required by the Policy. Both the projected energy

consumption and related GHG emission should be quantified for both cases. Design assumptions for the base case should be based on a typical WWTF and pump station design that meets the requirements of TR-16, *Guides for the Design of Wastewater Treatment Works*, 2016 Edition, which is commonly used as a guide for wastewater facility design in Massachusetts. The as-proposed Preferred Alternative design should include features and measures that would result in a significant reduction from the Base Case in both the consumption of grid electricity and the related GHG emissions. Measures that should be evaluated include: increasing piping sizes to reduce friction loss; use of premium efficiency pumps and motors; and use of variable frequency pump drives (VFD).

The Town should consult MassDEP's "Energy Efficiency and Renewable Energy Opportunities at Water and Wastewater Facilities" webpage³, the Water Environment Research Foundation's *Utilities of the Future Energy Findings*⁴ report published in 2014, the EPA's *Evaluation of Energy Conservation Measures for Wastewater Facilities*⁵ (2010), the *Water and Wastewater Energy Management Best Practices Handbook*⁶ (2010) prepared by the New York State Energy Research and Development Authority, and other resources to identify energy efficiency practices at WWTFs. The Single EIR should review energy-efficient alternatives identified in the reports cited above and indicate whether the Town will adopt the measure or not, and provide a rationale for the decision. The Single EIR should review opportunities for on-site energy generation, including biogas and solar photovoltaic (PV) systems. The Town should consult with MEPA staff before completing this analysis.

Historical/Archaeological Resources

The Town should provide MHC with a US Geological Survey topographical map that clearly locates the phased project areas and scaled project plans showing existing and proposed conditions. These plans should be submitted to MHC as early as possible during the design phase corresponding to each of the proposed project development phases. The Town should continue to coordinate with MHC to ensure review of any potential historic impacts from the project and the Single EIR should provide an update on the status of these discussions. If MHC deems the project to have an "adverse effect" on historic or archaeological resources, the Single EIR should include a discussion of mitigation measures that the Town will undertake to address the adverse effect.

Construction Impacts

The EENF indicated that the project will require a Access Permit from MassDOT to address work within State-controlled roadways. The Town should consult with MassDOT to confirm what elements of the project will require approval. The Single EIR should identify areas

³ <http://www.mass.gov/eea/agencies/massdep/climate-energy/energy/water-utilities/energy-efficiency-at-water-and-wastewater-facilities.html>

⁴ Available online at <https://www.werf.org/a/ka/Search/ResearchProfile.aspx?ReportId=ENER6C13>

⁵ Available online at <https://nepis.epa.gov/Exe/ZyPDF.cgi/P1008SBM.PDF?Dockey=P1008SBM.PDF>

⁶ Available online at <https://www.nysrerda.ny.gov/-/media/Files/Programs/Clean-Energy-Communities/NYSERDA-Water-Wastewater-Energy-Management-Best-Practices-Handbook.pdf>

subject to MassDOT review, describe potential project impacts in those areas, and identify mitigation measures.

Construction period impacts and mitigation measures should be described in the Single EIR, including impacts from noise and dust, impacts on trees and other vegetation, and traffic impacts. Measures that will be taken to minimize and mitigate construction period impacts (in particular impacts on sensitive receptors or exceptional resources) should be detailed.

While much of the project will occur within existing roadways, it will increase impervious area by approximately one acre due to the placement of pump stations and other system components. The Single EIR should describe impervious areas to be created by the project and review alternatives for minimizing new impervious surfaces. The Single EIR should identify sedimentation and erosion control measures to be used during construction. A Stormwater Pollution Prevention Plan will be developed for the project in accordance with MassDEP's Stormwater Management Standards. The Single EIR should describe any stormwater best management practices (BMPs) to be constructed to offset new impervious area.

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 Proponent 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. I encourage the Town to reuse or recycle construction and demolition (C&D) debris to the maximum extent.

Mitigation Measures/Section 61 Findings

The Single EIR should include a separate chapter summarizing proposed mitigation measures. This chapter should also include draft Section 61 Findings for each permit or other approval to be issued by State Agencies. The Single EIR should contain clear commitments to implement these mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and a schedule for implementation. The Single EIR 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 phase.

Response to Comments

The Single EIR should contain a copy of this Certificate and a copy of each comment letter received. In order to ensure that the issues raised by commenters are addressed, the Single EIR should include direct responses to comments to the extent that they are within MEPA jurisdiction. This directive is not intended to, and shall not be construed to, enlarge the Scope of the Single EIR beyond what has been expressly identified in this certificate.

Circulation

The Proponent should circulate the Single EIR to those parties who commented on the EENF, to any State Agencies from which the Proponent will seek permits or approvals, and to any parties specified in section 11.16 of the MEPA regulations. Per 301 CMR 11.16(5), the Proponent may circulate copies of the Single EIR to commenters in CD-ROM format or by directing commenters to a project website address. However, the Proponent must make a reasonable number of hard copies available to accommodate those without convenient access to a computer and distribute these upon request on a first-come, first-served basis. The Proponent should send correspondence accompanying the CD-ROM or website address indicating that hard copies are available upon request, noting relevant comment deadlines, and appropriate addresses for submission of comments. The Single EIR submitted to the MEPA office should include a digital copy of the complete document. A copy of the Single EIR should be made available for review at the Barnstable public library.⁷

April 3, 2020

Date

K. Theoharides

Kathleen A. Theoharides

Comments received:

| | |
|------------|--|
| 03/12/2020 | Natural Heritage and Endangered Species Program (NHESP) |
| 03/12/2020 | Massachusetts Department of Environmental Protection (MassDEP– Southeast Regional Office (SERO)) |
| 03/12/2020 | Cape Cod Commission (CCC) |
| 03/27/2020 | Massachusetts Department of Transportation (MassDOT) |
| 03/30/2020 | Division of Marine Fisheries (DMF) |

KAT/ACC/acc

⁷ Requirements for hard copy distribution or mailings will be suspended during the Commonwealth's COVID-19 response. Please consult the MEPA website for further details on interim procedures during this emergency period: <https://www.mass.gov/orgs/massachusetts-environmental-policy-act-office>.



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Kathleen A. Theoharides
Secretary

Martin Suuberg
Commissioner

March 12, 2020

Kathleen A. Theoharides
Secretary of Environment and Energy
Executive Office of Energy and
Environmental Affairs
ATTN: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

RE: ENF Review. EOEEA 16148
BARNSTABLE. Comprehensive Waste
Water Management Plan – Town Wide

Dear Secretary Theoharides,

The Southeast Regional Office of the Department of Environmental Protection (MassDEP) has reviewed the Environmental Notification Form (ENF) for the Comprehensive Waste Water Management Plan – Town Wide, Barnstable, Massachusetts (EOEEA 16148). The Project Proponent provides the following information for the Project:

Describe the proposed project and its programmatic and physical elements: *The Project is a Town-wide Comprehensive Wastewater Management Plan which will expand wastewater infrastructure throughout the Town. The project is a thirty year plan, comprised of three, 10-year phases, predominantly focused on sewer expansion to achieve reduction in nutrients and address TMDL's in embayments, while also addressing water quality in ponds, drinking water source protection, targeted economic development and other wastewater needs of the community. The phases will be further broken up into individual projects, during which the Town anticipates that project specific permitting requirements (such as wetland resources, habitat, historical, etc.) will be reviewed in consultation with the appropriate agencies. The details of the plan are explained in extensive detail in the attached Comprehensive Wastewater Management Plan, specifically in Sections 5 and 6.*

Bureau of Water Resources Comments:

Wetlands and Waterways. The Wetlands and Waterways Program has reviewed the EENF for the Barnstable Comprehensive Wastewater Management Plan and offers the following comments.

Wetlands

The Project Proponent provides very little detail on the locations of the proposed facilities. It is therefore not possible for the Program to provide detailed comments on the potential Project

impacts on wetland resource areas, or the Projects ability to meet the regulatory performance standards and protect the interests of the Act.

However, the Program would like to comment on some of the information included in the EENF. The EENF indicates that the Project is not considered a Limited Project under the Wetlands Protection Act Regulations. The Project Proponent may wish to review 310 CMR 10.24(7)(b) regarding the Limited Project status of the proposed activities. Additionally, portions of the Project may meet the regulatory requirements to be considered a Minor Exempt Activity. The Project Proponent should review 310 CMR 10.02(2)(b) 1. & 2.j. prior to preparing and submitting any Notices of Intent.

Waterways.

The CWMP primarily focuses on future sewer system expansion, upgrading the wastewater treatment facility, water quality improvements and a variety of non-traditional nitrogen management methods. The ENNF does not provide information on which components of these future Projects will be constructed within area subject to Chapter 91 jurisdiction. Proposed sewer lines which cross over or under tidelands or tidal rivers and streams will likely require a Chapter 91 License. The conceptual non-traditional nitrogen management methods which include targeted dredging, cranberry bog conversion and bivalve aquaculture will also likely require Chapter 91 permitting. The Waterways Program recommends that the EIR include information on which future Projects of the CWMP are located in Chapter 91 jurisdictional areas.

Wastewater Management. MassDEP's Southeast Regional Office is pleased to have the opportunity to comment on the Town of Barnstable's Draft Comprehensive Wastewater Management Plan and Expanded Environmental Notification Form (EENF). MassDEP commends the Town on its efforts to restore the coastal embayments impacted by nutrient enrichment with an accelerated timeline.

Introduction

The Town has submitted an Expanded Environmental Notification Form for the Town's Draft Comprehensive Wastewater Management Plan (DCWMP). The DCWMP provides a summary of the evaluations and activities the Town has completed since 2003, the 2011 needs assessment report, and the activities anticipated through 2050. The Town plans to utilize a variety of strategies including sewerage, wetland restoration, innovative alternative septic systems (I/A Systems), permeable reactive barriers (PRBs), and aquaculture to achieve nitrogen reduction targets necessary to meet the Total Maximum Daily Load (TMDL) in each of the watersheds linked to an identified impaired embayment. At the same time, the planning efforts account for wastewater needs other than nitrogen mitigation.

The EENF/DCWMP states that the Town plans to address the various wastewater needs of the community in a 30-year plan (3 phases of ten years). The Town also has parallel 3-stage sewer expansion plan to address needs in the Popponesset Bay Watershed and the Cotuit Bay Subwatershed of the Three Bays Watershed. The timing and execution of the 3-stage plan is subject to a "westerly solution" involving the collaboration of multiple communities. The 30-year plan consists of primarily a conventional approach of sewer expansion, but the Town has designed the plan with the ability to integrate non-traditional Projects in the last phase based on demonstration Projects. Based on the results of the demonstration Project data, the Town will assess how the Town can modify the existing plan to implement traditional strategies with the incorporation of non-traditional approaches. The focus of non-traditional strategy application is within the Three Bays Watershed.

The Barnstable DCWMP provides a clear schedule toward resource restoration with allowances for adaptive management and economic development. MassDEP recognizes that this is a plan subject to modification based on partnerships with towns that share common watersheds and the advancement of nutrient management strategies and technologies. As such, MassDEP supports the Town of Barnstable's plan to submit a 2025 Adaptive Management Report as an update to the 2020 DCWMP and Notice of Project Change filings (NPCs) for future non-traditional Projects.

Wastewater Treatment

The Town has diligently maintained and improved the existing Barnstable Water Pollution Control Facility (BWPCF) and associated infrastructure and plans to do so through Phase 1 of the 30-year plan. The Town is planning to invest in maintenance and improvement of existing infrastructure, including pumping stations, collection system evaluation studies and to address infiltration and inflow. The Town is planning to upgrade and expand the facility's treatment capacity throughout Phase 1 with improvements to the reactor trains, modifications of the secondary clarifier and expansion of the aeration system. The goal is to reduce the annual effluent nitrogen concentration from 6 mg/l to 3 mg/l while accommodating the anticipated new flow from sewer expansion Projects. In Phase 1, Barnstable will also upgrade the solids handling facility in years 2 through 4; upgrade the headworks in years 3 through 8; and install additional emergency generators in years 4 and 5.

The proposed changes are consistent with demands that will be placed on the facility and all design issues will be addressed during plan and/or permitting review. The treatment facility and associated infrastructure are regulated under MassDEP's groundwater discharge permit GW# 021-1. The permit expires in November 2023. The permit states the following in Section D. Supplemental Conditions 10:

“Simultaneously with the permit renewal application in 2023, the permittee shall submit and engineering report prepared by a registered professional engineer to the Department for its review and approval that outlines in sufficient detail what modification (if any) to the facility or other changes are required to insure that the facility can remain in compliance with its GWDP and other applicable requirements through the next 5 year permit term (year 2028) and beyond”.

For the engineering report, rather than Projecting required upgrades through the next 5-year permit term, MassDEP advises the Town to include any identified upgrades and or modifications of the facility through Phase 1 in accordance with Barnstable's DCWMP. Depending on the timing of the design and permitting of critical upgrades or modifications that could expand discharge capacity, the Town should consider submission of a WP11 in lieu of a WP12 permit application. MassDEP can be flexible with the submission date of the permit renewal, within reason, to simplify permit renewal and potential plan approval reviews.

Wastewater Disposal

The DCWMP acknowledges limitations in wastewater recharge at the BWPCF. The Barnstable Water Pollution Control Facility (BWPCF) discharges all of its treated wastewater effluent to disposal sites at the treatment facility. As a result of a planning level analysis conducted in 2017, MassDEP conservatively lowered the disposal capacity in the groundwater discharge permit to allow time to study the disposal capacity and understand the potential downgradient hydrogeological impacts. The Town has retained a consultant to investigate and model the hydrogeological impacts of different discharge capacities at the facility. The current Project seeks to discover the actual maximum disposal volume that would cause issues; further define the issues,

locate the properties where the issues would be observed; and assess the gravity and extent of those defined issues in the identified locations. Initial modeling indicates that depth to groundwater in low lying areas is the limiting factor, and that capacity varies depending on the amount of recharge from precipitation over the preceding three months. The preliminary Project findings indicate that the estimated average annual recharge capacity of the BWPCF is 2 MGD when the depth to groundwater is less than 8 feet at a downgradient receptor. The DCWMP states that the annual average flow is not expected to reach 2 MGD until 2027.

With potential complications at 2 MGD, based on the current on-going study, MassDEP supports the Town's current plan to maintain flows below 2 MGD until the Town designs, permits and constructs the new disposal sites. The disposal limitation is a significant obstacle in Barnstable's wastewater plan. MassDEP considers it imperative that the Town's plan prioritize its stated intent to investigate and permit additional wastewater sites in parallel with the wastewater treatment upgrades planned Phase 1.

Opportunities for Regional Cooperation

The Town is investigating several opportunities for regional cooperation with neighboring towns. Many local studies have shown that economies of scale from a cost savings and sustainability perspective offer significant advantages to regional solutions. Barnstable shares several watersheds with neighboring communities and is investigating community partnerships with them. Barnstable retained the University of Massachusetts School for Marine Science and Technology (SMASST) to conduct a Massachusetts Estuaries Project (MEP) model run for TMDL compliance of the Lewis Bay Watershed using the proposed plans of the two towns (Barnstable and Yarmouth) sharing this watershed. The model indicates that the Towns will meet the TMDL if the Towns execute their proposed plans. Additionally, the Towns are discussing and have studied options centered on Barnstable providing treatment for Yarmouth's raw wastewater and Yarmouth providing disposal capacity for some of Barnstable's wastewater in addition to the treated effluent from Yarmouth's wastewater. MassDEP supports the potential partnership and believes that a Watershed Permit can organize the expectations the Towns have of each other to carry out proposed plans for the restoration of Lewis Bay.

The Town shares the Popponesset Bay Watershed with Sandwich and Mashpee. The Towns have executed an inter-municipal agreement (IMA) to establish a work group. The objective of the work group is to apply for a Watershed Permit, come to agreement on a formula for allocation of responsibilities and costs, establish a municipal fiscal agent lead, and "to provide assurance that each town will take affirmative steps toward water quality improvement". Barnstable believes there are water quality concerns in the Shoestring Bay Subwatershed of Popponesset Bay and the Cotuit Bay Subwatershed of the Three Bays Watershed that would not be addressed via nitrogen trading in the IMA. As aforementioned, a potential "westerly solution" would allow Barnstable to carry out the 3-stage sewer expansion plan addressing those concerns. Barnstable has also been participating in discussions with the Upper Cape Communities (Bourne, Falmouth Mashpee and Sandwich) in an effort to form an Upper Cape regional treatment and disposal solution at Joint Base Cape Cod (JBCC). Barnstable is also discussing alternative "western solutions" with different permutations of Upper Cape Community partnerships outside of utilizing the facility on JBCC. MassDEP supports the regional efforts of the Upper Cape Communities and Barnstable and will continue provide regulatory guidance.

Lastly, the Town has formed a collaborative relationship with the Barnstable Clean Water Coalition (BCWC), a 501 (c) (3) non-profit organization. The Town and BCWC are working towards assessment of non-traditional technologies in the Three Bays Watershed.

TMDL Compliance. The Town retained SMAST to conduct a MEP model run with updated land use and water use data which demonstrated that the 30-year plan, once executed, will meet all of the nutrient removal targets to achieve the TMDLs in all of the embayments that are primarily in Barnstable: Three Bays, Centerville River, Lewis Bay and Barnstable Harbor. Barnstable designed the DCWMP with solely traditional strategies; the Town will apply adaptive management if necessary to adjust the plan with non-traditional strategies in the future. The Town not only considered MEP nitrogen target thresholds for choosing sewer expansion areas, but also considered areas with traditional Title 5 concerns, pond protection needs, flood zone considerations and economic development. The Town's DCWMP has a detailed breakdown of the Phase 1 sewer expansion in Barnstable Harbor, Centerville, Lewis Bay, Hall Creek and Three Bays Watersheds, with the expectation to submit a similar detailed plan for Phase 2 with the 2025 adaptive management update.

The Town of Barnstable implemented its own fertilizer regulation and continually invests in stormwater upgrades. The Town believes fertilizer regulations and stormwater upgrades are difficult to quantify for nitrogen reduction purposes and have decided not to rely or include those efforts towards TMDL compliance. MassDEP supports the implementation of fertilizer regulations and stormwater upgrades, but agree that they are hard to quantify towards TMDL compliance. Additionally, Barnstable's fertilizer regulation appears to overall provide best management practices and performance standards rather than prohibit fertilizer use, making it even more difficult to quantify the actual reduction.

The Town should continue to work towards a "western solution" to address the respective needs of Popponesset Bay and the Three Bays embayments. The Town should continue to consider alternative partnerships and solutions to assure the Town meets the TMDLs and water quality needs in those embayments.

Lewis Bay

The Town plans to expand sewer collection through 1,081 parcels in the Lewis Bay Watershed. The BWPCF treats and discharges within the Lewis Bay watershed and the Town plans to decrease annual total nitrogen from 6 mg/l to 3 mg/l. As discussed in the Opportunities for Regional Cooperation section, the Town is collaborating with Yarmouth on wastewater solutions for the shared embayment; however, the CWMPs for each Town anticipate meeting the TMDL on their own should a partnership not develop.

Centerville River

The Town plans to expand sewer collection through 55% of the watershed's parcels. The watershed septic reduction equivalency of the Centerville River Watershed sewer expansion will exceed the MEP nitrogen reduction target. The Town plans to execute the majority of this sewerage in Phase 1.

Three Bays

The Town plans to expand sewer collection into 66% of the watershed's parcels. The watershed septic reduction equivalency of the Three Bays Watershed sewer expansion will not meet the MEP nitrogen reduction target. The Town is proposing several non-traditional demonstration Projects in the watershed with a focus of a reduction of the nitrogen load to the Marston's Mills River. The DCWMP includes six (6) non-traditional demonstration initiatives: Cranberry Bog Restoration Project, Mill Pond Dredging Project, Warren's Cove Dredging and Aquaculture Project, Sampson's Island Dredging Project, Horse Farm Permeable Reactive Barrier (PRB) Project, and the Innovative Alternative Technologies (I/A Systems) Project. With the exception of Sampson's Island Dredging

Project, all non-traditional initiatives are in the feasibility and Project design stage. The DCWMP acknowledges that the conventional approach does not meet the target nitrogen reduction (even accounting for Sandwich's portion of the load). The DCWMP states that the remaining load can be addressed through these non-traditional approaches; however, there should be a conventional contingency plan provided in the event that the non-traditional approaches do not produce the desired results.

The BCWC is assisting the Town with the Cranberry Bog Restoration Project, I/A Systems Project, and the Horse Farm PRB Project. The BCWC is currently working with the cranberry bog farmers to frame a demonstration Project that would restore wetlands in certain areas of the bogs for enhanced nitrogen attenuation without adversely affecting the ability to farm the bogs. Based on an SMAST study, the Town believes that a dredging Project would increase the residence time of an on-site pond, which would improve nitrogen attenuation. The Town would like to dredge Warren's Cove back to its sandy layer. Hypothetically, this may remove the nitrogen contribution from the decayed benthic layer and create an environment for local aquaculture, leading to enhanced nitrogen removal. The Cranberry Bog Restoration Project, Mill Pond Dredging Project and Warren's Cove Dredging Project are ecological restoration Projects with potential water quality benefits. The Projects have several benefits with respect to different aquatic species and public health and safety. As such, the Town should assure to gain permitting approval from all applicable regulatory agencies. As the Town moves from planning to permitting, the Town should work with MassDEP to form a water quality-monitoring plan and discuss the sustainability of the proposed water quality effects. Adequate monitoring data before and after the implementation of these interventions facilitates the assessment of potential enhanced nitrogen attenuation and water quality benefits. At the minimum, monitoring plans should consider use of nearby monitoring station locations used for the MEP, utilized an adequate number of upgradient and downgradient monitoring stations to capture the effect of the intervention, and the testing of the same parameters used in the MEP according to the existing MEP Quality Assurance Project Plan (QAPP).

The Sampson's Island Dredging Project is a three-phase, three-year ecological restoration Project that will widen the channel width by approximately 400 feet to improve flushing and navigation in Cotuit Bay. The Town plans to complete the Project in winter 2020. MassDEP will consider monitoring data taken before the start of the intervention conducted incongruent with MEP standards. The Town should develop a monitoring plan for MassDEP approval to estimate the nitrogen attenuation impact of the Project moving forward.

Barnstable and BCWC are in the planning and feasibility stage for a PRB demonstration Project to investigate the interception of groundwater from a horse farm that contributes high loads of nitrogen during rainfall events. The DCWMP did not mention aboveground stormwater management in the description of this Project; as the Project is formed, aboveground stormwater management should be considered in an effort to capture nitrogen loads from the farm above and below the ground surface. BCWC is also collaborating with the Massachusetts Alternative Septic System Test Center (MASSTC) to create a demonstration Project to install and monitor I/A systems in a residential neighborhood. BCWC has teamed with the Nature Conservancy in this effort to develop a financing plan in creating a roadmap for widespread replacement of standard Title 5 septic systems with I/A septic systems. MassDEP will continue to work with BCWC and the Town as the demonstration Project continues to take form. All demonstration Projects involving I/A systems without general approval must coordinate with MassDEP's I/A program as part of the MassDEP I/A approval process. As the Town, BCWC, and the Nature Conservancy develop a financing plan, the Project team should factor in that the MassDEP expects any I/A initiative for

TMDL compliance and nitrogen reduction to be municipally managed. This will help assure that maintenance and required monitoring meets an acceptable quality standard.

Barnstable Harbor

Barnstable Harbor does not have a TMDL. The embayment has assimilative capacity for nitrogen with the exception of the Millway Subwatershed. The Draft MEP report indicates a 65% (4.7 kg/day-N) reduction in septic load for the Millway Subwatershed. The Town is planning to expand sewers into 370 parcels within the Millway Subwatershed. The watershed septic reduction equivalency of the Millway Subwatershed sewer expansion will exceed the MEP nitrogen reduction target.

Halls Creek Watershed

Halls Creek was evaluated as part of the Lewis Bay MEP report and TMDL. The MEP model shows the Halls Creek embayment system to have assimilative capacity for nitrogen. The Town plans to sewer a residential neighborhood located in the southwestern corner of the watershed to address pond protection considerations, water supply protection considerations, flood zone considerations, and economic development needs. The Town has already installed sewers in the uppermost section of the watershed.

Rushy Marsh Pond

Rushy Marsh Pond has a relatively low nitrogen load from its watershed. The watershed is small and has a large percentage of undeveloped area. According to the 2006 MEP report, its nitrogen enrichment may not be anthropogenic, but rather caused by the very low tidal exchange rate as the barrier beach restricts the inlet to Nantucket Sound. In 2012, the Town attempted to implement inlet widening to promote better flushing with a 10-foot wide box culvert in the southern portion of the basin, but the inlet did not maintain its width. Due to the tidal prism and the rate of littoral sand transport along the beach, a stable inlet is not feasible without extensive maintenance and hard structures such as jetties or extended pipe within the surf zone. MassDEP supports the Town's plan to focus restoration efforts towards other watersheds.

Popponesset Bay

As discussed in the Opportunities for Regional Cooperation section, the Town has an IMA with Mashpee and Sandwich to develop methodologies, strategies, and further agreements on nitrogen trading and monitoring responsibilities. The DCWMP relies on the formation of a "western solution" to address water quality and nitrogen reduction needs for the watershed. MassDEP will look to the 2025 Adaptive Management Report for a refinement of the plan for Popponesset Bay.

Adaptive Management

MassDEP views adaptive management as a certain amount of flexibility to recognize alternative approaches that allow for mid-course corrections in the implementation of a recommended plan. The Barnstable DCWMP is a plan Projected to meet TMDL compliance and the reliance on adaptive management is solely for the refinement of the existing plan amidst several variables that exist today. The Town plans to submit a 2025 Adaptive Management Report. MassDEP will look towards that report for further explanation of the plan for Phase 2 sewerage, an update on non-traditional demonstration Projects, an update on disposal capacity expansion, and either materialization of a "western solution" or refinement of the plan for the Shoestring Bay Subwatershed of Popponesset Bay and the Cotuit Bay Subwatershed of the Three Bays Watershed.

Conclusion

The Barnstable DCWMP is a well-defined step forward. MassDEP commends Barnstable's efforts in addressing the Town's nitrogen management in a phased approach focusing not only on nutrient reduction but economic development, water supply protection, coastal resilience, and pond protection. MassDEP recognizes the effort of the Town to maintain existing infrastructure while expanding. MassDEP supports the Town's approach to combine traditional approaches while engaging in demonstration Projects for non-traditional approaches and observing their effectiveness.

As the Town is aware, the disposal capacity limitation is a potential impediment to the Town's progress. MassDEP looks forward to the completion of the study of the existing disposal beds and the permitting and construction of new disposal sites. MassDEP will continue to provide regulatory guidance during the process. MassDEP recognizes that the DCWMP is clearly the result of hard work and thoughtful deliberation. Furthermore, MassDEP believes that the DCWMP will serve as the basis of a sound and innovative plan that will accommodate both the needs of the Town and MassDEP. MassDEP looks forward to working cooperatively with Barnstable, as both parties have in numerous past occasions, in order to achieve the goal of habitat restoration that we both ardently desire.

Miscellaneous Comments/Edits:

1. Table 2-3 indicates that Threshold TN Concentrations for the Barnstable Harbor Sentinel Station is "To Be Determined". The MEP Report indicates that the threshold concentration is the average of the bioactive nitrogen concentrations at Stations BM-11, BM-13, and BSH-4 and is set a 0.16 mg/L. The additional sentinel station in the Millway (as shown in Figure VIII-3 of the MEP Report) has a threshold concentration of 0.21 mg/L.
2. In Section 2.2.1.2, it mentions that the 208 Plan Update identifies stormwater contributing 23% of the controllable nitrogen load to the Three Bays watershed. This is a significantly higher figure than identified in the MEP report for this watershed. The difference in the numbers should be explained or reconciled.
3. In general, the discussion about stormwater should discuss how stormwater improvements, particularly in leaching catch basins, may or may not treat for total nitrogen.
4. The Town should consult with MassDEP's Air Quality section to determine if there are any permitting requirements for the proposed replacement and additional generators.
5. On Page 2-23 there is a typographical error in the last line of the first paragraph stating "Error! Reference Source not found".
6. On Figure 2-12: Nitrogen Hot Spots, most of the Town is not color coded. Perhaps this figure could be better described.
7. In Section 5.2.1.1.1 Nutrient Removal, the reference should be to Appendix QQ.
8. In Table 5-5, is there an update on the status of Mary Dunn, Campground and Aunt Betty's Ponds?

Bureau of Waste Site Cleanup Comments:

EENF #16148 – 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].

The proposed Comprehensive Wastewater Management Plan is a three-phase Project spanning thirty years. There are many MCP sites located near and possibly within the proposed Project areas. Some of these sites have been closed, but other sites require on-going response actions and reporting until final closure under the MCP. A list of all MCP sites will not be presented here. Interested parties may view a map showing the location of BWSC disposal sites using the MassGIS data viewer (Oliver) at: http://maps.massgis.state.ma.us/map_ol/oliver.php Under “Available Data Layers” 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#!/search/wastesite>

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. 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. Information related to spills prevention best practices may be obtained at the following web page: https://www.mass.gov/files/spill_prevention.pdf?

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

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.

Massachusetts Idling Regulation

The ENF reports that the Project Proponent proposes simply to “minimize idling.” 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 occupied, MassDEP requests that the Proponent install permanent signs limiting idling to five minutes or less on-site.

Climate Change Comments:

Climate Change – Greenhouse Gas Emissions. Pursuant to the Global Warming Solutions Act of 2008 (GWSA) (Chapter 298 of the Acts of 2008) and the Commonwealth’s Clean Energy and Climate Plan the Commonwealth has established economy-wide greenhouse gas (GHG) emission reduction limits for Massachusetts that will achieve reductions of 25 percent below statewide 1990 GHG emission levels by 2020 and 80 percent below statewide 1990 GHG emission levels by 2050. Furthermore, Section 7 of the GWSA amended Section 61 of Chapter 30 of the Massachusetts General Laws by inserting, “in considering and issuing permits, licenses and other administrative approvals and decisions, the respective agency, department, board, commission or authority shall also consider reasonably foreseeable climate change impacts, including additional greenhouse gas emissions, and effects, such as predicted sea level rise.”

The Proponent should consider potential GHG impacts (e.g., energy demand, use of renewable energy sources, transportation modes, etc.) of its Project in the context of furthering the Commonwealth’s goals and recommended GHG mitigation policies in the *Clean Energy and Climate Plan for 2020*. Additional information on the Commonwealth’s efforts to reduce GHG emissions can be found at: <http://www.mass.gov/eea/air-water-climate-change/climate-change/massachusetts-global-warming-solutions-act/>.

Sea Level Rise. The Project’s location will subject it to the impacts of climate change-induced sea level rise. MassDEP recommends that the Proponent consider various scenarios and future conditions that are beyond the scope of the 100-year flood elevations designated in the Flood Insurance Rate Maps (FIRMs) to evaluate impacts such as sea level rise, shoreline change, and hurricane inundation. Recognizing the vulnerability of the coastline in the vicinity of the proposed Project site, the Proponent should be prepared to address the impacts of sea level rise and damage to property, businesses, and infrastructure over the lifespan of the Project. The potential risks to the Project should be evaluated based on sea level rise scenarios developed by known authorities, including the Massachusetts Coastal Zone Management Agency or community/localized studies.

One recommended resource is the Massachusetts Sea Level Rise and Coastal Flooding Viewer <https://www.mass.gov/service-details/massachusetts-sea-level-rise-and-coastal-flooding-viewer>. Please note that the viewer doesn’t include all types of wastewater treatment and drinking water infrastructure.

Adaptation strategies should be considered to accommodate the effects of sea level rise and manage risk. Adding pre-disaster adaptation and post-disaster recovery measures will improve the Project resiliency to flooding and the impacts of extreme storm events. Please be aware that the Sea Level Rise and Coastal Flooding Viewer does not account for storm surge, waves, erosion and other dynamic factors, while FIRMs do not account for sea level rise, shoreline erosion, changes in the frequency and magnitude of storm events, etc. Therefore, it’s important to review and consider

these combined with hurricane surge scenarios (which use current sea level) in order to plan for worst case scenarios and appropriate adaptation measures.

Climate Change – Adaptation. Section 7 of the Global Warming Solutions Act of 2008 (GWSA) (Chapter 298 of the Acts of 2008), amended Section 61 of Chapter 30 of the Massachusetts General Laws by inserting, “in considering and issuing permits, licenses and other administrative approvals and decisions, the respective agency, department, board, commission or authority shall also consider reasonably foreseeable climate change impacts, including additional greenhouse gas emissions, and effects, such as predicted sea level rise.”

MassDEP recommends that the Proponent review and consider the data and recommendations identified in the 2011 Massachusetts Climate Change Adaptation Report issued by the Executive Office of Energy and Environmental Affairs (EEA) (<http://www.mass.gov/eea/docs/eea/energy/cca/eea-climate-adaptation-report.pdf>), the 2014 National Climate Assessment, specifically the Northeast region section, (<https://nca2014.globalchange.gov/>) and the 2017 U.S. Global Change Research Program Climate Science Special Report (<https://science2017.globalchange.gov/>) to address potential climate change impacts and adaptation measures feasible for implementation on the Project site. MassDEP also recommends that you check the following link for updates to the Massachusetts State Hazard Mitigation and Climate Adaptation Plan (<https://resilientma.com/updates/>) which is anticipated to be finalized in 2018. Once completed, this plan will include more usable data and information.

Wastewater & Drinking Water Treatment Facilities and Climate Change. The Proponent should consider the potential impacts of climate change as part of the planning, design and operation of the proposed expansion of the Headworks Facilities and upgrade of the WWTF. Wastewater 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 Emerging Technologies and for Wastewater Treatment and In-Plant Wet Weather Management (2013).

Assessment

- Energy Efficiency and Renewable Energy Opportunities at Water and Wastewater Facilities-<http://www.mass.gov/eea/agencies/massdep/climate-energy/energy/water-utilities/energy-efficiency-at-water-and-wastewater-facilities.html>

- 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

- MassDEP's Clean Energy Results Program – Achieving Positive Cash Flow Through Energy Saving Upgrades at Water Infrastructure Facilities – 2014
<http://www.mass.gov/eea/docs/dep/energy/cash-flow.pdf>;
- Mass save® Municipal Energy Saving Program <http://www.mass.gov/eea/docs/doer/green-communities/eap/mass-save-municipal-sector-sheet.pdf>;
- Massachusetts Clean Energy Center <http://www.masscec.com/get-clean-energy/government-and-non-profit>;

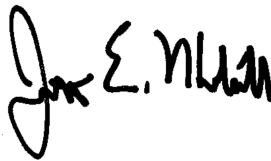
Proposed s.61 Findings

The “Certificate of the Secretary of Energy and Environmental Affairs on the 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 Jonathan Hobill at (508) 946-2870.

Very truly yours,



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

JH/GZ

Cc: DEP/SERO

ATTN: Millie Garcia-Serrano, Regional Director
David Johnston, Deputy Regional Director, BWR
Gerard Martin, Deputy Regional Director, BWSC
Seth Pickering, Deputy Regional Director, BAW
Jennifer Viveiros, Deputy Regional Director, ADMIN

Brian Dudley, Chief, Wastewater Management, BWR
Andrew Osei, Wastewater Management, BWR
Dan Gilmore, Wetlands and Waterways, BWR
Mark Dakers, Solid Waste, BAW
Alison Cochrane, Solid Waste, BAW
Allen Hemberger, Site Management, BWSC



MASSWILDLIFE

DIVISION OF FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581

p: (508) 389-6300 | f: (508) 389-7890

MASS.GOV/MASSWILDLIFE

March 12, 2020

Kathleen A. Theoharides, Secretary
Executive Office of Environmental Affairs
Attention: MEPA Office
Anne Canaday, EEA No. 16148
100 Cambridge Street
Boston, Massachusetts 02114

Project Name: Comprehensive Wastewater Management Plan
Proponent: Town of Barnstable
Location: Town-Wide
Document Reviewed: Environmental Notification Form
EEA No.: 16148
NHESP No.: 12-30930

Dear Secretary Theoharides:

The Natural Heritage & Endangered Species Program of the Massachusetts Division of Fisheries & Wildlife (the "Division") has reviewed the *Environmental Notification Form* (dated January 2020) for the Town of Barnstable's Comprehensive Wastewater Management Plan (CWMP; the Project) and would like to offer the following comments regarding state-listed species and their habitats.

The Town of Barnstable's ponds, bays and estuarine waters provide critical foraging, breeding, migration and over-wintering habitats for a suite of state-listed rare species. We commend the Town for its efforts to improve water quality within these critical habitats, and for its consideration of both traditional and non-traditional approaches to wastewater and nutrient management.

Portions of Barnstable are mapped as Priority Habitat for state-listed rare species. All projects proposed within Priority Habitat, which are not otherwise exempt from review pursuant to 321 CMR 10.14, require review through a direct filing with the Division pursuant to the Massachusetts Endangered Species Act (M.G.L. c. 131A) and its implementing regulations (MESA; 321 CMR 10.00). The MESA is administered by the Division and prohibits the Take of state-listed species, which is defined as "in reference to animals...harm...kill...disrupt the nesting, breeding, feeding or migratory activity...and in reference to plants...collect, pick, kill, transplant, cut or process...Disruption of nesting, breeding, feeding, or migratory activity may result from, but is not limited to, the modification, degradation, or destruction of Habitat" of state-listed species (321 CMR 10.02).

To the extent possible, the Division has evaluated and provided comments below on the recommended Phase 1 actions outlined within the ENF (Sections 5.1.2 and 5.2.4.2). For many of the proposed actions,

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the Division has not yet received a direct filing pursuant to the MESA; therefore, the comments provided below should be considered preliminary in nature.

Construction of New Sewer Infrastructure

The Division notes that wastewater collection systems proposed within Priority Habitat may be exempt from MESA review pursuant to 321 CMR 10.14 (6) and or (10), which state that “[t]he following Projects and Activities shall be exempt from the requirements of 321 CMR 10.18 through 10.23...”

[6] construction, repair, replacement or maintenance of septic systems, private sewage treatment facilities, utility lines, sewer lines, or residential water supply wells within existing paved areas and lawfully developed and maintained lawns or landscaped areas, provided there is no expansion of such existing paved, lawn and landscaped areas;

[10] installation, repair, replacement, and maintenance of utility lines (gas, water, sewer, phone, electrical) for which all associated work is within ten feet from the edge of existing paved roads...;

The complete list of MESA filing exemptions may be found on the Division’s website. We would encourage the Town to examine design alternatives which avoid and minimize impacts to Priority Habitat, including re-use of existing paved, developed and or landscaped areas wherever possible. For any proposed work within Priority Habitat, the Town should proactively consult with the Division to confirm whether proposed work is exempt from MESA review or will require review through a direct filing with the Division.

Modifications to Existing Barnstable Water Pollution Control Facility (BWPCF)

The Division notes that the Town’s existing wastewater treatment facility does not appear to be located within the Priority Habitat of state-listed rare species, as indicated in the Massachusetts Natural Heritage Atlas (14th Edition). Therefore, the Division anticipates that any proposed upgrades to the BWPCF would not require review for compliance with the MESA.

New Discharge Site

The ENF states that a new effluent disposal site(s) will need to be identified, permitted and constructed to accommodate flows from proposed sewer areas. As provided above, any new effluent disposal site(s) proposed within Priority Habitat would require review for compliance with the MESA. The Division encourages the Town to examine alternative locations for the proposed disposal site(s) that are located outside of, or that otherwise avoid and minimize disturbance within, Priority Habitat. For any proposed work within Priority Habitat, the Division would encourage the Town to contact the Division in advance of a formal filing to proactively address any rare species concerns and discuss potential MESA permitting pathways.

Joint Base Cape Cod

The ENF states that Barnstable, Bourne, Falmouth, Mashpee and Sandwich are conducting a regional evaluation of wastewater discharge options on Joint Base Cape Cod (JBCC). Specifically, the ENF also states that the Towns are discussing the possibility of utilizing the existing wastewater treatment facility at JBCC – which currently consists of a treatment plant and four infiltration basins northwest near the Cape Cod Canal – as a regional facility.

The Division notes that, with the exception of the treatment plant itself, the existing JBCC wastewater treatment facilities and their surrounds appear to be located within Priority Habitat. Any proposed upgrades to or expansions of these facilities would require review by the Division for compliance with the MESA.

In addition, the Division notes that the four existing infiltration basins at JBCC near the Cape Cod Canal are located within the Camp Edwards Wildlife Management Area. Chapter 47 of the Acts of 2002 transferred the care, custody and control of the northern 15,000 acres of JBCC to the Division as the Camp Edwards Wildlife Management Area to conserve fish and wildlife resources for the benefit of the citizens of the Commonwealth. Any proposed projects or activities within the Camp Edwards Wildlife Management Area, including but not limited to any potential upgrades to or expansion of existing wastewater treatment facilities, would require review and approval by the Division.

The Town should contact the Division as soon as possible to discuss this proposal. In advance, we request that the Town provide more detailed information about this proposal to the Division for review, including but not limited to whether it would include upgrades to or expansion of existing JBCC effluent disposal facilities. In advance, we request that the Towns evaluate alternative locations for this proposal that avoid and minimize work within Priority Habitat.

Cotuit Cut / Sampson's Island Dredging

The Division reviewed and determined (October 6, 2009) that this project, as proposed, would not result in a Take of state-listed species. Therefore, the Division has no additional comments on this project at this time.

Non-Traditional Approaches for Marstons Mills River System: Mill Pond Dredging

The ENF states that the Town will pursue dredging of Mill Pond as a component of its non-traditional approaches to nutrient management. The Division notes that Mill Pond is mapped as Priority Habitat for a state-listed fish species. Based on a review of information submitted to the Division to date and information currently contained in our database, the Division anticipates that this project, as proposed, **will likely result in a Take (321 CMR 10.18 (2)(b))** of state-listed species. Projects resulting in a Take of state-listed species may only be permitted if they meet the performance standards for a Conservation and Management Permit (CMP; 321 CMR 10.23). In order for a project to qualify for a CMP, the applicant must demonstrate that the project has avoided, minimized and mitigated impacts to state-listed species consistent with the following performance standards: (a) adequately assess alternatives to both temporary and permanent impacts to the state-listed species; (b) demonstrate that an insignificant portion of the local population will be impacted; and (c) develop and agree to carry out a conservation and management plan that provides a long-term net benefit to the conservation of the state-listed species.

The Town has been consulting with the Division to proactively address state-listed species concerns and MESA permitting associated with this project. Coordination and consultation with the Division remain ongoing at this time. As the MESA review process for this project remains ongoing, no work or activities associated with this project may occur until the Division has made a final decision relative to the CMP.

We appreciate the opportunity to comment on this project. If you have any questions about components of this letter related to MESA, please contact Jesse Leddick, Chief of Regulatory Review, at jesse.leddick@mass.gov or 508-389-6386. If you have any questions about the components of this letter

related to the Camp Edwards Wildlife Management Area, please contact Jason Zimmer, Southeast District Manager, at jason.zimmer@mass.gov or 508-759-3406. We look forward to working with the Town to address the comments provided herein and further its efforts to improve water quality in the Town of Barnstable's ponds, bays and estuarine waters.

Sincerely,

A handwritten signature in black ink, reading "Everose Schlüter". The signature is written in a cursive style with a large initial "E".

Everose Schlüter, Ph.D.
Assistant Director

cc: Daniel Santos, Barnstable Department of Public Works
Town of Barnstable Board of Selectmen
Town of Barnstable Planning Board
Town of Barnstable Conservation Commission
Jason Zimmer, MassWildlife Southeast District Manager



Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO



March 27, 2020

Kathleen Theoharides, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114-2150

RE: Barnstable: Barnstable Comprehensive Wastewater Management Plan – EENF
(EEA #16148)

ATTN: MEPA Unit
Anne Canaday

Dear Secretary Theoharides:

On behalf of the Massachusetts Department of Transportation, I am submitting comments regarding the Expanded Environmental Notification Form for the Barnstable Comprehensive Wastewater Management Plan project in Barnstable, as prepared by the Office of Transportation Planning. If you have any questions regarding these comments, please contact J. Lionel Lucien, P.E., Manager of the Public/Private Development Unit, at (857) 368-8862.

Sincerely,

David J. Mohler
Executive Director
Office of Transportation Planning

DJM/jll

cc: Jonathan Gulliver, Administrator, Highway Division
Patricia Leavenworth, P.E., Chief Engineer, Highway Division
Mary Joe Perry, District 5 Highway Director
Neil Boudreau, Assistant Administrator of Traffic and Highway Safety
Planning Board, Town of Barnstable
Cape Cod Commission



Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO



MEMORANDUM

TO: David Mohler, Executive Director
Office of Transportation Planning

FROM: J. Lionel Lucien, P.E, Manager
Public/Private Development Unit

DATE: March 27, 2020

RE: Barnstable Comprehensive Wastewater Management Plan – EENF
(EEA #16148)

The Public/Private Development Unit (PPDU) has reviewed the Expanded Environmental Notification Form (EENF) for the Barnstable Comprehensive Wastewater Management Plan in Barnstable. The town-wide sewer expansion project consists of adding 190 miles of new sewer main and several above-ground pump station structures.

The project will require a Non-Vehicular Access Permit from MassDOT. The new sewer lines will run along and cross state highways Route 132 and Route 28, and the state jurisdictional portions of Route 6A and Phinney's Lane. Though the new sewer lines will not generate traffic, temporary traffic impacts related to the construction of the project may occur. Accordingly, the proponent should develop a Traffic Management Plan (TMP) to be reviewed and approved by MassDOT. The proponent may also wish to adopt a Temporary Traffic Control Plan (TTCP), to be developed consistent with FHWA and MassDOT guidelines.

MassDOT recommends that no further environmental review be required based on transportation issues. The details of the above and any other access-related issues can be addressed during the permitting process for the project. If you have any questions regarding these comments, please contact me at (857) 368-8862 or Nicholas Zavalas at (857) 368-8856.

March 30, 2020

Secretary Kathleen Theoharides
Executive Office of Energy and Environmental Affairs (EEA)
Attn: MEPA Office
Anne Canaday, EEA No. 11333
100 Cambridge Street, Suite 900
Boston, MA 02114

Dear Secretary Theoharides:

The Division of Marine Fisheries (MA DMF) has reviewed the Notice of Project Change (NPC) for the Town of Bourne's Integrated Solid Waste Management Facility. The project was reviewed with respect to potential impacts to marine fisheries resources and habitat.

Based on the information provided, MA DMF has no recommendation for sequencing, timing, or methods that would avoid or minimize impact at this time.

Questions regarding this review may be directed to John Logan in our New Bedford office at (508) 742-9722.

John Logan, Ph.D.
MA Division of Marine Fisheries
836 South Rodney French Boulevard
New Bedford, MA 02744
(508) 742-9722
<http://www.mass.gov/eea/agencies/dfg/dmf/>

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BARNSTABLE, MASSACHUSETTS 02630



CAPE COD
COMMISSION

(508) 362-3828 • Fax (508) 362-3136 • www.capecodcommission.org

Via Email

March 12, 2020

Kathleen A. Theoharides, Secretary of Energy and Environmental Affairs
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office, Eva Anne Canaday, MEPA Analyst
100 Cambridge Street, Suite 900, Boston, MA 02114

Re: Environmental Notification Form — EEA No. 16148 (CCC File No. 20037)
Barnstable Comprehensive Wastewater Management Plan

Dear Secretary Theoharides:

Thank you for the opportunity to comment on the above-referenced ENF.

Commission staff believe the ENF sufficiently details the scope of the Town's Plan and addresses the appropriate environmental issues that will be addressed through subsequent MEPA review. Further, staff support the Town's request for and the Secretary's grant of a Single EIR, as the ENF describes and analyzes a wide variety of alternatives, provides sufficient environmental baseline information, and includes planning and design to avoid environmental impacts. The overall purpose of the Plan is to protect or improve a variety of natural resources from environmental degradation: coastal waters, freshwater ponds and drinking water supplies.

The Cape Cod Commission reserves further substantive comment for later stages of MEPA review. Commission staff have consulted with and provided comments to the Town as the Town has developed the Plan. Ultimately, after MEPA review concludes, the Cape Cod Commission will review the Plan to determine its consistency with the Section 208 Area-wide Water Quality Plan for Cape Cod.

Commission staff are available to discuss any questions you might have about these comments.

Sincerely,

Kristy Senatori
Executive Director

Cc: Project File
Mark Ells, Barnstable Town Manager, via email
Dan Santos, Barnstable DPW Director, via email
Barnstable Cape Cod Commission Representative via email
Cape Cod Commission Chair via email
Cape Cod Commission Committee on Planning and Regulation Chair via email