



*The Commonwealth of Massachusetts*  
*Executive Office of Energy and Environmental Affairs*  
 100 Cambridge Street, Suite 900  
 Boston, MA 02114

Charles D. Baker  
 GOVERNOR

Karyn E. Polito  
 LIEUTENANT GOVERNOR

Matthew A. Beaton  
 SECRETARY

Tel: (617) 626-1000  
 Fax: (617) 626-1081  
<http://www.mass.gov/eea>

December 7, 2018

**CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS  
 ON THE  
 NOTICE OF PROJECT CHANGE**

**PROJECT NAME** : Town of Orleans Comprehensive Wastewater Management Plan – Effluent Discharge Location  
**PROJECT MUNICIPALITY** : Orleans  
**PROJECT WATERSHED** : Cape Cod  
**EEA NUMBER** : 14414  
**PROJECT PROPONENT** : Town of Orleans  
**DATE NOTICED IN MONITOR** : November 7, 2018

Pursuant to the Massachusetts Environmental Policy Act (MEPA; M.G. L. c. 30, ss. 61-62I) and Section 11.10 of the MEPA regulations (310 CMR 11.00), I hereby determine that this project **does not require** an Environmental Impact Report (EIR).

Original Project and Procedural History

The Orleans Comprehensive Wastewater Management Plan (CWMP) calls for the 20-year phased construction of a wastewater collection system and new, centralized Wastewater Treatment Facility (WWTF) as well as implementation of non-structural program elements to achieve reductions in nitrogen loading to coastal embayments over a 20-year period. Specifically, the CWMP includes: construction of a 0.64 million gallons per day (mgd) WWTF at the Tri-Town Septage Treatment Facility on Overland Way; installation of 74 miles of sewer pipes and 63 pump stations in six construction phases to treat wastewater from 2,800 properties along Pleasant Bay, Town cove, and the Nauset and Rock Harbor watersheds (referred to as the Core Program); employing an adaptive management plan (AMP) that includes compliance with

Total Maximum Daily Load (TMDL) requirements, monitoring for nitrogen loading reductions, and making changes to the CWMP as necessary in response to new data; and evaluating opportunities to accommodate additional wastewater flows from Eastham and/or Brewster (referred to as the Regional Program). The CWMP was last reviewed by MEPA on January 28, 2011 when the Secretary issued a Certificate on the Single EIR which indicated it adequately and properly complied with MEPA and its implementing regulations.

### Project Change

As described in the Notice of Project Change (NPC), the primary change is the relocation of the effluent disposal site from the Tri-Town Septage Treatment Facility to 32 Lots Hollow Road; 43 Lots Hollow Road is proposed as a reserve site. The NPC also described construction of a new effluent force main (4,805 linear feet (lf)) to convey flow from the WWTF site to the disposal site and a change to the effluent disposal technology from rapid infiltration sand beds to a vertical wick discharge. As described in the NPC, construction of the WWTF at Overland Way will be expanded in phases. The first phase will accommodate an initial phase of the Core Program with a design flow of approximately 250,000 gallons per day (gpd), including 16,000 gpd of septage handling. The final design capacity of the WWTF remains 0.64 mgd as previously identified in the Single EIR. Construction of the WWTF at the Overland Way location will occur wholly within previously disturbed areas of the site. The NPC indicated the new effluent disposal location was selected to avoid impacts to archaeological resources and mapped rare species habitat present at the Tri-Town Septage Treatment Facility site. According to the NPC, the change in disposal technology will also reduce the amount of land required for the discharge.

### Project Site

The effluent disposal location is at 32 Lots Hollow Road (3.88 acres); 43 Lots Hollow Road (1.77 acres) is proposed as a reserve site. Both parcels are municipally owned and are located south of the Route 6 and Route 6A interchange in Orleans. The disposal locations are underlain by Harwich Outwash Plain Deposits, a very permeable soil consisting primarily of medium to very coarse sand and pebble to cobble gravel. Groundwater at both locations flows north-northwesterly towards the Namskaket and Little Namskaket Creeks. The NPC indicated that the effluent disposal locations do not contain wetland resource areas and are not located in Priority and/or Estimated Habitat as mapped by the Division of Fisheries and Wildlife's (DFW) Natural Heritage and Endangered Species Program (NHESP) or an Area of Critical Environmental Concern (ACEC). The NPC indicated that the groundwater mound and effluent discharge will eventually reach the Inner Cape Cod Bay ACEC which is designated as an Outstanding Resource Water (ORW) under the Massachusetts Surface Water Quality Standards (314 CMR 4.00).

### Jurisdiction and Permitting

The CWMP 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 will result in the construction of one or more new sewer mains of ten or

more miles in length. The Single EIR indicated that implementation of the CWMP will require a Groundwater Discharge Permit (GWDP) from the Massachusetts Department of Environmental Protection (MassDEP) and may require a Conservation and Management Permit from the NHESP and a Non-Vehicular Access Permits from the Massachusetts Department of Transportation (MassDOT).<sup>1</sup>

The CWMP will require an Order of Conditions from the Orleans Conservation Commission (or in the case of an appeal, a Superseding Order of Conditions from MassDEP) and a National Pollutant Discharge Elimination System (NPDES) Construction General Permit from the U.S. Environmental Protection Agency (EPA). It may require a Section 404 Permit from the U.S. Army Corps of Engineers (ACOE) and Federal Consistency Review by the Office of Coastal Zone Management (CZM).

The NPC indicated that the project changes continue to require a GWDP from MassDEP and a Non-Vehicular Access Permit from MassDOT for installation of the effluent sewer main beneath Route 6, a state-jurisdictional roadway. The project change will not require a CMP from NHESP.

As anticipated in the Single EIR, the Town has applied for State Financial Assistance in the form of a \$45 million loan from the Clean Water State Revolving Fund (SRF) to plan, design, and implement the CWMP. Therefore, MEPA jurisdiction is broad and extends to all aspects of the project that are likely, directly or indirectly, to cause Damage to the Environment, as defined in the MEPA regulations.

### Environmental Impacts and Mitigation

As described in the NPC, the project changes will decrease land alteration (from 6.5 acres to 4 acres), decrease impervious area (from 6 acres to 4 acres), and eliminate permanent impacts to mapped rare species habitat (from 4.9 acres). The project changes will add 4,805 linear feet (lf) of new sewer main (74.91 total miles). The project changes will not directly impact wetland resource areas. The NPC indicated that implementation of the CWMP will improve water quality through elimination of failing septic systems which will increase protection for the Inner Cape Cod Bay ACEC.

As described in the NPC, the project changes do not require modification of any previously identified mitigation measures or draft Section 61 Findings. Measures to avoid, minimize, and mitigate environmental impacts include: the use of erosion and sediment control measures during construction, implementation of dust control measures, restrictions on work hours, and limiting areas of disturbance by locating work within previously disturbed areas where possible.

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<sup>1</sup> The Single EIR Certificate indicated that implementation of the CWMP also required a Chapter 91 (c.91) License, and 401 Water Quality Certificate (WQC) from MassDEP. Information provided with the NPC clarified that this was erroneous and these Permits are not required. Information provided with the NPC also clarified that implementation of the CWMP will require Non-Vehicular Access Permits from MassDOT.

### Review of the NPC

The NPC included a description of the project as previously presented in the Single EIR, described the project changes, and included conceptual site plans. It identified potential environmental impacts and described measures to avoid, minimize, and mitigate said impacts. The NPC included a “Groundwater Discharge Hydrogeologic Evaluation – 32 and 43 Lots Hollow Road” (dated August 2, 2018) which assumed a maximum effluent discharge of 500,000 gpd at each location and included a summary of pump test data and field investigations, groundwater flow modeling, and groundwater mounding analysis.

The Proponent’s consultant provided supplemental information to the MEPA Office and MassDEP regarding agency actions, vegetation monitoring, nitrogen loading, and freshwater flows to facilitate MEPA review.<sup>2</sup> This information provided a revised table which identified anticipated nitrogen loading for each receiving watershed based on particle tracking, and clarified that no additional nitrogen load will reach Pleasant Bay. A primary focus of MassDEP’s review of the GWDP application will be to ensure that the project does not introduce additional nitrogen into impaired waterbodies without an appropriate offset. I refer the Town to comments from MassDEP which indicate this information will be reviewed thoroughly as part of the GWDP application. The Town should provide this and any other supporting information on nitrogen loading that is prepared during the GWDP process to CZM for their review.

Comments from MassDEP generally support the project and acknowledge it is an important first step in addressing the Town’s nitrogen mitigation strategy. I refer the Town to comments from the Massachusetts Historical Commission (MHC) which requests additional information to evaluate archaeological and historic impacts. Comments from MassDOT identify information that should be provided during permitting.

### *Wastewater/Water Quality*

Supplemental information from the Town’s consultant clarified that the nitrate load from the effluent discharge will eventually reach Cape Cod Bay, Little Namskaket Creek, Namskaket Creek, Town Cove, Rock Harbor, and Boat Meadow River. This supplemental information clarified that the nitrate load to each watershed, with the exception of Cape Cod Bay, will be offset by the nitrate load removed through installation of the wastewater collection system and treatment at the WWTF. This information is summarized in Table 1 below. The NPC indicated that the additional nitrogen load to Cape Cod Bay is not anticipated to cause adverse water quality or benthic habitat impacts as the bay experiences significant daily tidal flushing.

As described in the NPC, the effluent discharge and groundwater mound will occur within the Inner Cape Cod Bay ACEC which includes Cape Cod Bay, Namskaket and Little Namskaket Creeks, Boat Meadow River, and Rock Harbor. The NPC indicates that use of vertical wicks to dispose of effluent will keep the discharge deep enough to avoid impacting coastal resources within the ACEC. Additionally, implementation of the CWMP is anticipated to reduce nutrient and pathogen impacts to these water bodies as sub-standard and failing septic systems are eliminated and properties are connected to the sewer system. I refer the Town to

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<sup>2</sup> Emails from Jennifer Doyle-Breen (AE COM) to Page Czepiga (MEPA Office) sent 11/19/18 and 11/21/18.

comments from CZM which recommend the Town summarize and share this information to support assessment of water quality relative to long-term goals.

**Table 1**

Watershed	Nitrate Load (kg/yr)		
	Nitrate to WWTF	Nitrate from WWTF	Nitrate Removed from Watershed
Town Cove	3,536	429	3,107
Boat Meadow Harbor	36	30	6
Rock Harbor Stream	3,000	307	2,693
Little Namskaket Creek	825	767	58
Namskaket Creek	470	31	439
Cape Cod Bay	0	1,502	-1,502
Pleasant Bay	0	0	0
<b>Total</b>	<b>7,867</b>	<b>3,066</b>	<b>4,801</b>

The NPC indicated that groundwater mounding in Namskaket and Little Namskaket Creek systems may cause a change in vegetation which could facilitate growth in freshwater invasive species. The NPC indicated a vegetation monitoring plan will be developed in consultation with MassDEP to identify shifts in plant cover and triggers for mitigation. I refer the Town to comments from the Division of Marine Fisheries (DMF) which recommends that surveys be performed prior to discharge to establish a pre-impact baseline.

Comments from CZM note that implementation of remaining portions of the CWMP will locate components of the wastewater collection infrastructure within coastal AE and VE flood zones. CZM recommends that the Town consider alternative locations for infrastructure and/or implement adaptation and resiliency measures to protect infrastructure from the vulnerabilities associated with the effects of climate change. I expect the Town will continue to evaluate alternative locations outside the floodplain for system components, such as pump stations, and will incorporate design features to increase the resiliency of the infrastructure from effects associated with sea level rise and changes in precipitation.

#### *Construction Period*

The Town will be required to implement stormwater management measures during construction in accordance with the NPDES Construction General Permit. The Town should implement measures to prevent and minimize dust, noise, and odor nuisance conditions that may occur during construction of the project. All construction activities should be undertaken in compliance with the conditions of all State and local permits. The Town should also minimize idling of construction equipment in accordance with the Air Quality regulations (310 CMR 7.11) which limit vehicle idling to five minutes. I encourage the Town to select project contractors that have installed retrofit emissions control devices, or vehicles that use alternative fuels, and to participate in the Clean Air Construction Initiative (CACI) in an effort to reduce emissions of volatile organic compounds, carbon monoxide and particulate matter (VOC, CO and PM) from diesel-powered equipment. Off-road vehicles are required to use ultra-low sulfur diesel fuel (ULSD).

*Future NPC*

This NPC indicated that the Town is planning to reduce the scope of the original sewer plan and to incorporate alternative nitrogen reduction strategies that are currently under review, including the use of permeable reactive barriers and deployment of shellfish. The Town's consultant indicated that these changes will be incorporated into a future NPC. I expect the next NPC will provide calculations and/or monitoring results to demonstrate that implementation of these measures will achieve identified nitrogen removal targets and/or include comprehensive information on how the effectiveness of these measures will be assessed and monitored. The future NPC should also provide an update on each of the core elements of the CWMP: Orleans WWTF, Core Program, Non-Structural Program Elements, Adaptive Management Plan, and Regional Wastewater Management Opportunities. The update should describe each element, identify any changes since the Single EIR was reviewed, and include an updated summary of environmental impacts associated with implementation of the CWMP. It should also include an updated summary of mitigation measures, draft Section 61 Findings, and an updated schedule for implementation of the remaining phases of the CWMP.


I expect the NPC will also address Executive Order 569: *Establishing an Integrated Climate Change Strategy for the Commonwealth* (EO 569), which was issued in September 2016. EO 569 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. Specifically, the future NPC should provide an analysis and discussion of the vulnerabilities of the wastewater collection and treatment system to the potential effects of climate change and identify design features that could increase the resiliency of the proposed infrastructure under future climate change conditions. To assist in the evaluation of climate change resiliency and adaptation measures, the Town should review the New England Interstate Water Pollution Control Commission's "*Preparing for Extreme Weather at Wastewater Utilities: Strategies and Tips*" (September 2016).<sup>3</sup>

Conclusion

The NPC has sufficiently defined the nature and general elements of the project for the purposes of MEPA review and demonstrated that the project's environmental impacts can be avoided, minimized, and/or mitigated to the extent practicable. Based on the information in the NPC and after consultation with State Agencies, I find that no further MEPA review is required at this time. I encourage the Town to consult with the MEPA Office prior to filing a subsequent NPC.

December 7, 2018

Date

  
Matthew A. Beaton

<sup>3</sup> Available at: <http://neiwpc.org/wp-content/uploads/2017/10/9-20-2016-NEIWPCC-Extreme-Weather-Guide-for-web.pdf>

Comments received:

11/19/2018 Division of Marine Fisheries (DMF)  
11/27/2018 Massachusetts Department of Environmental Protection (MassDEP)  
11/27/2018 Office of Coastal Zone Management (CZM)  
11/28/2018 Natural Heritage and Endangered Species Program (NHESP)  
11/21/2018 Massachusetts Historical Commission (MHC)  
12/06/2018 Massachusetts Department of Transportation (MassDOT)

MAB/PRC/prc