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July 10, 2009

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

PROJECT NAME : Town of Orleans Comprehensive Wastewater
Management Plan
PROJECT MUNICIPALITY : Town of Orleans
PROJECT WATERSHED : Cape and Islands
EOEA NUMBER : 14414
PROJECT PROPONENT : Town of Orleans
DATE NOTICED IN MONITOR : May 6, 2009

Pursuant to the Massachusetts Environmental Policy Act (G. L. c. 30, ss. 61-62I) and Section 11.03 of the MEPA regulations (301 CMR 11.00), I hereby determine that this project **requires** the preparation of an Environmental Impact Report (EIR).

In accordance with Section 11.05(7) of the MEPA regulations, the Town of Orleans (the Town) has submitted an Expanded Environmental Notification Form (EENF) with a request that I allow the Proponent to fulfill its EIR obligations under MEPA with a Single EIR (SEIR), rather than the usual process of a Draft and Final EIR. The EENF received an extended comment period pursuant to Section 11.06(8) of the MEPA regulations and the Town voluntarily extended the comment period an additional four weeks. The EENF includes clear descriptions of the project, a description of the extensive planning and alternatives analysis conducted to date, identifies potential environmental impacts associated with the project and provides commitments to mitigate impacts. Comments received from the Department of Environmental Protection (MassDEP), the Cape Cod Commission (CCC) and others indicate overwhelming support for the analysis and conclusions included in the EENF and that it is consistent with legal requirements. Based on a review of the EENF and after consultation with state agencies, I hereby find that the EENF meets the regulatory requirements and I am permitting the Proponent to file a SEIR in fulfillment of Section 11.03 of the MEPA regulations.

The Scope described below is intended to identify additional analysis and information necessary to complete MEPA review and ensure that impacts and issues are fully analyzed.

Project Overview

The Town of Orleans' comprehensive wastewater management process has been undertaken for the purposes of:

- 1) Evaluating and planning for the impacts to the Town's marine and freshwater water resources from anticipated future residential and commercial growth and development in the Town of Orleans over the 20-year project planning period (ending in 2030);
- 2) Evaluating and quantifying the Town of Orleans' existing and future contributions to nitrogen loading of coastal embayments and phosphorous loading of freshwater ponds from the Town's on-site septic systems over the 20-year project planning period;
- 3) Evaluating the feasibility of centralized and de-centralized municipal sewer options to meet the estimated 2030 nitrogen control needs and Total Maximum Daily Loads (TMDLs) established for the marine embayments surrounding Orleans;
- 4) Evaluating alternative methods for the disposal of treated wastewater including on-site and off-site groundwater disposal using rapid infiltration basins and wastewater reuse for landscape spray irrigation, with the intent of reducing groundwater discharges from the proposed Orleans Wastewater Treatment Facility (WWTF);
- 5) Evaluating the feasibility of non-structural and non-traditional nutrient management techniques to further reduce nutrient loading to the marine embayments surrounding Orleans; and,
- 6) Reviewing the long-term effectiveness of regional wastewater treatment and disposal options involving the Towns of Orleans, Eastham and Brewster.

The Town's draft comprehensive wastewater management plan (Draft CWMP) has been designed to achieve reductions of nitrogen loading and meet nutrient Total Maximum Daily Loads (TMDLs) to the Town of Orleans' coastal embayments including Pleasant Bay, Nauset Marsh/Town Cove, Cape Cod Bay, and to achieve reductions of phosphorous loading to protect the water quality associated with a number of fresh water ponds located in Orleans over the 20-year project implementation period.

I note that the Inner Cape Cod Bay and Pleasant Bay have been designated as Areas of Critical Environmental Concern (ACECs) and Outstanding Resource Waters (ORW) under the Massachusetts Surface Water Quality Standards (314 CMR 4.00). Extensive areas of Priority and Estimated Habitat of rare wildlife have been mapped by the Natural Heritage and Endangered Species Program (“NHESP”) within each of these ACECs.

The Town’s core sewer construction plan (Core Program) involves the six phase construction of new sewers including a new wastewater treatment facility (Orleans WWTF) to be located at the existing Tri-Town Septage Treatment facility located near the intersection of Route 6 and Route 6A at 29 Overland Way in Orleans. The Core Program includes the construction of approximately 74 miles of new municipal sewer pipe, and approximately 63 sewer pump stations. Under the Core Program, 0.64 million gallons per day (MGD) of wastewater flow will be collected from 2,800 individual properties (approximately 53% percent of the Town) in the 2030 design year for treatment and on-site disposal. As currently designed, the Draft CWMP incorporates reserved treatment capacity to accommodate the projected future 2030 build-out of Orleans including reserving approximately 17,000 gallons per day (gpd) of capacity at the Orleans WWTF for anticipated future development in the Town’s downtown Central District. Construction of Phase 1 of the Core Program is expected to be completed in 2015 and will include the construction of the new Orleans WWTF (to operate at 50% design capacity) and approximately 15 miles of new sewers and 7 pump stations located primarily throughout the downtown area of Orleans. Phase 2 will include the construction of approximately 11 miles of additional gravity sewers and five separate cluster wastewater treatment systems each with a design capacity of 10,000 gpd to be located at the headwaters of the Paw Wah, Lonnie’s, Arey’s, Baker’s and Mill Ponds. As described in the EENF, these cluster systems will provide interim nitrogen and phosphorous removal in advance of the construction of the later Core Program sewer phases. The Town proposes to eventually convert and incorporate these cluster wastewater treatment systems to serve as pump stations for the Core Program municipal sewer system. The Phase 2 sewer construction work is expected to be completed in 2018. Construction of the remaining Core Program phases (Phases 3-6) is anticipated to be completed by 2030.

The Orleans WWTF will include a new septage receiving station to replace the existing Tri-Town Septage Treatment Facility and will be designed to receive, treat and dispose septage truck-transported from non-sewered areas in Orleans together with septage from the other Tri-Town District communities of Brewster and Eastham. The remaining sludge materials resulting from the Orleans WWTF’s treatment of wastewater and septage will be dewatered and trucked off-site for suitable reuse and disposal. The Draft CWMP also incorporates a number of non-structural elements designed to reduce nutrient loading including proposed programs for controlling the use of fertilizer products on lawns, gardens and agricultural areas, stormwater management and water conservation.

The Town's Draft CWMP has been designed to also accommodate potential additional future wastewater flows from the remaining unsewered areas of Orleans (Extended Program) and/or the neighboring towns of Eastham and Brewster (Regional Program). However, as described in the EENF, additional wastewater disposal sites or reuse options may be required to support these potential future sewer expansion programs. The Orleans Draft CWMP also incorporates an Adaptive Management Plan (AMP) that outlines a process for reporting the results of the Town's ongoing annual groundwater quality and marine habitat monitoring program to identify the need for any adjustments or mid-course corrections to the phased construction of the Core Program to achieve compliance with TMDLs for the coastal embayments surrounding Orleans.

State Permits and Jurisdiction

The project is undergoing review pursuant to Sections 11.03(5)(a)(3) and (5)(b)(1) of the MEPA regulations, because the project will likely involve the construction of sewer mains ten or more miles in length and the development of a new wastewater treatment facility with a capacity of more than 1,000,000 gallons per day. The project will require a Groundwater Discharge Permit, a Chapter 91 License, and a 401 Water Quality Certificate from MassDEP. The project must be reviewed by the Natural Heritage Endangered Species Program (NHESP) and the Massachusetts Historical Commission (MHC) because portions of the project occur within Priority Habitat and within or adjacent to recorded archaeological sites and archaeologically sensitive areas, respectively. It may require Federal Consistency Review with the Massachusetts Coastal Zone Management (MCZM) Office. It may also require a Construction Access Permit from the Massachusetts Highway Department. The project may need to obtain a Section 404 Permit from the U.S. Army Corps of Engineers. The project should comply with the National Pollutant Discharge Elimination System (NPDES) General Permit for stormwater discharges from a construction site. It will also require an Order of Conditions from the Orleans Conservation Commission and on appeal only, a Superseding Order of Conditions from MassDEP.

The Town anticipates applying for State Revolving Fund (SRF) loans for subsequent planning and construction of proposed sewer project. Therefore, MEPA jurisdiction is broad and extends to all aspects of the project that may cause Damage to the Environment, as defined in the MEPA regulations.

SCOPE

The Town should prepare the SEIR/Final CWMP in accordance with Section 11.07 of the MEPA regulations as modified by this Certificate. The SEIR should include a copy of this Certificate. The SEIR should also contain copies of the comments received. The Town should circulate the SEIR to those who commented on the EENF, and to any party required by regulation.

Project Description

The SEIR should include a detailed executive summary explaining what is being proposed under the Town's Core Program and potential future Expanded Program and Regional Program and why. It should identify significant environmental benefits and impacts, and measures that will be taken to avoid, minimize and mitigate adverse impacts. The SEIR should describe the proposed schedule for the remaining phases of project planning, design, environmental permitting and review, and construction. Detailed information should be provided for each area where construction of new sewers or cluster systems are proposed, including maps that show where sewer lines, cross-country easements, pumping stations, and other facilities will be located. The SEIR should provide the best information currently available for the six sewer construction phases proposed under the Core Program, and explain what additional information is proposed for later collection and analysis. The SEIR should discuss the state permitting process for this project and describe how it will meet applicable performance standards.

Needs Analysis

A Needs Analysis was conducted to determine the nutrient loads generated by existing and future development and their respective septic systems in the Town of Orleans and the types of wastewater treatment and disposal alternatives that would be required to meet published and expected TMDLs for the coastal embayments and freshwater ponds in Orleans. In developing the Draft CWMP, the Town reviewed the total number of parcels located within each of the three watersheds for the marine embayments surrounding Orleans and freshwater pond watersheds, and estimated the water use, wastewater flows and nutrient loading to be generated in the 2030 project design year. Existing and future development parcels were evaluated to determine the need for sewer to address the water quality requirements and TMDLs of the Town's marine and freshwater water resources. Both MassDEP and I generally concur with the findings of the Needs Analysis.

Alternatives Analysis

The EENF includes an evaluation of decentralized, community, and regional wastewater treatment and disposal alternatives to address the Town's identified wastewater treatment needs. The Town's Draft CWMP describes a Core Program of sewerage that involves the phased construction of a centralized wastewater collection, treatment and disposal system to serve approximately 53% of the Town's existing developed properties.

The SEIR should include a detailed description of the Town's preferred site layout for the proposed Orleans WWTF that would maximize the reuse of the existing septage facility infrastructure and avoid fragmentation of undisturbed areas within the site and a 'take' of the Eastern Box Turtle. The SEIR should consider incorporating the sewerage of the Cedar Pond watershed area as part of the Town's Phase 1 Core Program construction activities. The SEIR should include a discussion of additional wastewater disposal or reuse alternatives that may be required to support the Extended or Regional Programs.

Wastewater Treatment and Water Quality

Orleans Wastewater Treatment Facility

As described in the EENF, the Town conducted a review of hydrogeological studies, hydraulic load testing and other groundwater modeling analyses pertaining to the 26-acre existing Tri-Town District Septage Treatment Facility site (Tri-Town site). The Tri-Town site is located within the Namskaket Marsh embayment that has been found to have excess capacity to accept additional nitrogen loading. According to the information provided in the EENF, the majority of the treated wastewater recharged at the Tri-Town site will mix with groundwater and recharge Namskaket Marsh. The Town has concluded that the on-site disposal and groundwater recharge of treated effluent from the Orleans WWTF will not impact local groundwater and surface water resources including existing water table mound height and nutrient loading to the Namskaket Marsh embayment. As currently designed, the Orleans WWTF will employ a 4-stage Bardenpho nitrogen removal process that will provide treatment levels capable of achieving nitrogen effluent concentrations of 3-5 parts per million (ppm) with a designed capacity to treat and dispose up to 0.64 MGD. The Draft CWMP includes a commitment to monitor groundwater resources around the periphery and down gradient of the Orleans WWTF site to identify the impacts on groundwater resources and embayments surrounding the Town of Orleans. This monitoring program is expected to be incorporated into a MassDEP groundwater discharge permit for the Orleans WWTF.

The SEIR should provide a detailed description of the Town's proposed groundwater quality monitoring plan for the Tri-Town site. The SEIR should evaluate the Tri-Town site's capacity to treat the additional estimated wastewater flows to be generated under the potential future Expanded and the Regional wastewater treatment alternatives.

Marine Embayments

The Town has continued to participate in the Massachusetts Estuaries Project (MEP) to conduct water quality sampling and identify nutrient loading problems for the Town's coastal embayments. MEP was created by MassDEP, and the University of Massachusetts School of marine Science and Technology (UMass S Mast) to define the nitrogen limits of coastal estuaries in southeastern Massachusetts. The Technical Reports produced by the MEP are used by MassDEP and the US Environmental Protection Agency (EPA) to establish Total Maximum Daily Loads (TMDLs) for nitrogen loading to these coastal embayments and their tributaries. According to the comments received from MassDEP, CCC and others, the estimated nitrogen loading reductions resulting from the Town's proposed phased Core Program for municipal sewer construction are consistent with published or expected TMDLs for the watersheds and embayments surrounding the Town of Orleans.

The SEIR should incorporate the findings of the MEP Technical Reports and/or TMDLs established for the Northside Cape Cod Bay and the Nauset Marsh/Town Cove embayments. The Town should use the Linked Water Quality Model to confirm the Core Program's ability to provide the necessary reductions in nitrogen loading to embayments surrounding the Town of Orleans in compliance with published or expected TMDLs. The SEIR should evaluate the benefit of expanding the Phase 1 sewer construction area to include properties located in the Cedar Pond watershed.

Freshwater Ponds

The Draft CWMP/EENF includes an evaluation of the impacts of phosphorous groundwater loading from residential land use on the water quality of large freshwater ponds and lakes located in Orleans. Using water quality monitoring results collected as part of the Cape Cod Ponds and Lakes Stewardship (PALS), the Town has identified the need to sewer properties located around Bolands, Baker, Ice House, Shoal and Cedar Ponds, and Crystal and Pilgram Lake. As described elsewhere in this Certificate, Phase 2 of the Town's Core sewerage program includes the construction of five separate cluster wastewater treatment systems that will each serve 40-50 existing developed properties located in areas upgradient of a number of impaired freshwater ponds in Orleans including the Paw Wah, Lonnie's, Arey's, Baker's and Mill Ponds.

According to the Town, the construction and operation of these cluster systems in advance of later phases of the proposed municipal sewer system will significantly reduce phosphorous to groundwater and phosphorous loading to these ponds.

The SEIR should provide a detailed discussion of the proposed cluster wastewater treatment systems including proposed sites for locating cluster wastewater treatment systems locations, areas to be served, system design capacity and treatment efficiency. This section of the SEIR should include an analysis of the benefits of cluster systems to provide nitrogen removal from the Pleasant Bay tributaries. The Town should consider cluster treatment systems with treatment efficiencies and nitrogen removal rates of 5 parts per million (ppm). The Town should also re-evaluate the merit of the proposed cluster wastewater treatment systems for Bakers Pond and Cedar Pond and consider incorporating the sewerage of the Cedar Pond watershed area as part of the Town's Phase 1 Core Program construction activities.

Adaptive Management Plan

The Draft CWMP includes an Adaptive Management Plan (AMP) that will report to MassDEP the results of the Town's annual ground water monitoring of the Tri-Town site and monitoring of water quality and eel grass coverage in Orleans' coastal embayments to document the reductions in watershed nitrogen loads achieved from the Town's phased sewer construction program. 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 Core Program.

The SEIR should provide a detailed description of the Town's proposed AMP and its water quality monitoring program for the Tri-Town site and the coastal embayments surrounding the Town of Orleans. I encourage the Town to consult with the Pleasant Bay Resource Management Alliance in designing the Town's water quality monitoring program. The SEIR should also include a discussion of the Town's commitment to continue its freshwater pond assessment and restoration activities. I ask that the Town expand the distribution of its annual water quality monitoring report to also include the CCC and the Pleasant Bay Resource Management Alliance.

Wetlands

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

The SEIR should analyze both direct and indirect impacts on wetlands and water bodies resulting from the project, and quantify the amount of direct wetland impact. The analysis should also discuss the consistency of any proposed drainage and stormwater management systems that are included in the project with the MassDEP Stormwater Management regulations and the Wetlands Protection Act performance standards. Proposed activities, including construction mitigation, erosion and sedimentation control, phased construction, and drainage discharges or overland flow into wetland areas, should be evaluated.

The SEIR should identify all parcels that are currently deemed unbuildable within the 100-year flood plain that would potentially become buildable as a result of a sewer installation. The SEIR should provide detailed plans, at a suitable scale, illustrating the proposed project's impacts to wetland resource areas. The SEIR should examine alternatives that avoid impacts to wetland resource areas, their associated buffer zones, riverfront protection areas and 100-year flood plain areas. Where it has been demonstrated that impacts are unavoidable, the SEIR should demonstrate that the impacts have been minimized, and that the project will be accomplished in a manner that is consistent with the Performance Standards of the Wetlands Regulations (310 CMR 10.00). The Town will need to provide wetlands replication at a ratio of at least 1:1 for any unavoidable impacts to wetlands. For any amount of required wetlands replication, a detailed wetlands replication plan should be provided in the SEIR that, at a minimum, includes: replication location(s), elevations, typical cross sections, groundwater elevations, the hydrology of areas to be altered and replicated, list of wetlands plant species of areas to be altered and the proposed wetland replication species, planned construction sequence, and a discussion of the required performance standards and monitoring.

Rare Species

As described in the EENF, the existing Tri-Town Septage Treatment Facility site is located within Priority Habitat for the Eastern Box Turtle (*Terrapene carolina*), the Diamond-backed Terrapin (*Malaclemys terrapin*), Salt Reedgrass (*Spartina cynosuroides*) and Mitchell's Sedge (*Carex mitchelliana*). The EENF includes an evaluation of four alternative site layouts (Alternatives A-D) for the new WWTF facility. According to NHESP's comments on the EENF, the construction of the Orleans WWTF will occur within mapped habitat for the Eastern Box Turtle (*Terrapene carolina*). NHESP has recommended that the Town identify a site layout alternative that will maximize the reuse of existing disturbed areas and avoid fragmentation of undisturbed areas within the proposed Orleans WWTF site to avoid a 'take' of the Eastern Box Turtle, and I have included this requirement in the Scope for an alternatives analysis provided above.

The SEIR should include a detailed description of the Town's preferred site layout alternative for the Orleans WWTF. If NHESP should subsequently find that the project will require a Conservation Permit pursuant to the Massachusetts Endangered Species Act (MESA), the SEIR should analyze the impacts to Eastern Box Turtle and evaluate avoidance/mitigation strategies. I ask that the Town continue to work closely with NHESP and consult with the Orleans Conservation Commission during the preparation of this section of the SEIR and the final project design to 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 Orleans WWTF site. The SEIR should report on the results of the Town's consultations with NHESP.

Historical/Archeological Resources

The Town should provide the MHC with a US Geological Survey topographical map that locates the Town's phased project area 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. In comments submitted on the EENF, the Massachusetts Historical Commission (MHC) indicated that a number of proposed pump stations are located within and/or adjacent to recorded archeological sites and archaeologically sensitive areas. The Town to coordinate with MHC to ensure review of any potential historic impacts from the project and the SEIR 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 SEIR should include a discussion of mitigation measures that the Town will undertake to address the adverse effect.

Greenhouse Gas Emissions (GHG) and Sustainable Development

The project requires an EIR and therefore is subject to the requirements of the MEPA Greenhouse Gas Emissions Policy and Protocol ("the Policy"):
<http://www.mass.gov/envir/mepa/downloads/GHGPolicyRev1108.pdf> . The policy requires project proponents to quantify the direct and indirect CO₂ emissions from the proposed project, including CO₂ emissions associated with the buildings & plant operations, and to compare those emissions to the project baseline, which includes no-build conditions as well as an assessment of the emissions associated with the current effective building code ("base case"). In connection with this requirement, the MEPA Office and the Department of Energy Resources (DOER) routinely schedule pre-filing meetings to provide technical assistance to proponents in the development of GHG analyses. I strongly encourage the Town to request a pre-filing meeting as it prepares the SEIR.

The policy requires proponents to use energy modeling software to quantify projected energy usage from stationary sources and energy consumption. The policy allows the proponent to select a model but, DEP and DOER recommend using EQUEST for stationary source modeling for buildings and building systems.

The SEIR should include the modeling printout for the base case and for the preferred alternative case. The SEIR should also present an evaluation of the feasibility of each of the mitigation measures outlined below, as well as the GHG emissions reduction potential associated with each measure. The SEIR should explain, in reasonable detail, any measure not selected- either because it is not applicable to the project or is considered technically or financially infeasible- that would result in a significant reduction of GHG.

Building Design

DOER has identified several building design measures worthy of consideration in the SEIR, and adoption into the project, where feasible.

- Building Orientation- The SEIR needs to clearly describe how the buildings will be oriented, why, and the expected impacts on energy usage including solar gain, day-lighting and effect on proposed and future solar energy collection systems;
- Duct Insulation- Duct insulation is the baseline required by code. To enhance efficiency, the SEIR should note, and construction should reflect, that all ducts will be sealed with mastic, tested and then insulated, since duct leakage can be a major factor in energy losses;
- Roof and Wall Insulation- The SEIR should evaluate using the highest R-value insulation possible. In general, providing the best building envelope possible provides the greatest gains in energy savings for building operations and insulation is generally very cost effective;
- High-Albedo Roofing Materials – The SEIR should fully consider these roofing materials, which are highly reflective and reduce cooling requirements for buildings. For roofing, USGBC provides LEED credit for low-slope roofs with a minimum SRI of 78 and for steep-slope roofs with a minimum SRI of 29. To qualify for an Energy Star label, Low Slope roofs must have an initial solar reflectance of at least 0.65. After 3 years, the solar reflectance must be at least 0.50. Steep Slope roofs must have an initial solar reflectance of at least 0.25, and at least 0.15 after 3 years. In addition, the performance of solar PV systems is improved when mounted on high albedo roofs; and,

- On-site renewable energy – At a minimum, buildings should be oriented and roofs should be constructed to support the added weight of a solar photovoltaic (PV) system for potential installation during project construction or at a future date. It should be noted that a rooftop PV system operates even more efficiently, due to added reflectivity, when installed on a high-albedo roof.

Considering the support of subsidies through the Commonwealth Solar and RPS programs, the SEIR should include a life-cycle cost analysis should be done to evaluate the installation of a PV system during project construction under two scenarios: 1) construction, ownership and operation of a PV system by the building owner; or 2) construction, ownership, and operation of a PV system by a third party that will then enter into a long-term power purchase agreement with the building owner for the electricity produced by the system. If neither of these scenarios is economically feasible at this time, the Town should continue to consider the opportunity for installing PV at a future date and state its willingness to host a third-party owned PV array under a favorable power purchase agreement. The following website provides information on the Commonwealth Solar program and tools for performing basic life cycle cost analyses:
http://www.masstech.org/renewableenergy/commonwealth_solar/index.html#

Equipment Design

The Town should explore and present modeling results in this section of the SEIR related to the use of renewable and energy efficient equipment listed below when designing new or upgraded wastewater treatment facilities, pump stations and other components of the Town's comprehensive wastewater management system.

- The SEIR should specify premium class rated motors for any new or replacement pumps, fans, or other drives larger than 1 horsepower (HP), as well as any scheduled to be upgraded;
- The SEIR should specify the use of high efficiency models for new and replacement pumps, blowers, agitators, or other rotating equipment;
- The SEIR should consider Variable Frequency Drives (VFDs) for all motors larger than ten HP;
- The SEIR should include an analysis to determine the combination of pumps (both size

and type), controls and piping which will result in a system configuration which will operate at the highest average efficiency;

- The SEIR should fully consider the inclusion of renewable energy systems, such as photovoltaic panels, which could be ground mounted, to reduce the indirect CO₂ emissions due to the fossil fuel generated electricity which would otherwise be used;
- The SEIR should evaluate sizing, routing, and material selection for the extension of pumped sewer lines which will result in reducing the average pumping power required for the transfer of the sewer flow;
- The SEIR should include a detailed discussion of the design principles and measures which will result in reduced indirect GHG emissions that will be implemented should any of the satellite stations be constructed; and,
- The SEIR should include a description of the maintenance and replacement policies, activities and schedules related to equipment included in existing system pumping stations which will eventually bring them to a comparable standard of efficiency.

I note that MassDEP, in coordination with other state and local agencies has initiated a demonstration project to retrofit existing wastewater treatment plants and water treatment plants with energy efficient technology, <http://www.mass.gov/dep/water/wastewater/empilot.htm>. The costs of some of these improvements are eligible for funding through the SRF and other programs. I encourage the Town to consult with MassDEP regarding this demonstration project as it prepares the analysis required under this section.

Construction Impacts

Construction period impacts and mitigation measures should be described in the SEIR, 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.

Sewering and Growth Management

The EENF/Draft CWMP includes a discussion of potential land use control mechanisms to limit unwanted secondary growth related to the construction of the Town's Core sewerage project. The Town is proposing to implement a "checkerboard" sewer connection bylaw that will enable the Town to select specific lots that will be connected to the municipal sewer system and lots that do not need sewerage and therefore will not be allowed to connect to the new sewer system. The Town is also proposing to implement a 'flow-neutral' nutrient control regulation, to be administered through the Orleans Board of Health, which would limit the redevelopment of existing properties by restricting the amount of additional wastewater flow/nitrogen load from the redeveloped property to the amount of wastewater flow the property is currently allowed under Title 5 and local zoning.

The SEIR should identify parcels located within the proposed sewer service areas and compare the potential secondary growth impacts, water use and increased wastewater flows that may be induced by public sewers and expected reductions of water use and wastewater flows with the Town's proposed growth management policies, regulations and bylaws. The SEIR should include copies of any new by-laws or regulations proposed by the Town for controlling new future development requesting municipal sewer service and located in areas outside of the proposed new sewer areas. The Town should consider adopting and implementing any proposed growth by-laws, regulations, and policies prior to the construction of any new sewers.

Costs to Homeowners

As described in the EENF/Draft CWMP, the Core Program will be constructed in six phases over 15-20 years and will cost an estimated \$150,000,000. The estimated operation and maintenance costs for the proposed Core Program total approximately \$1.4 million dollars. The Town proposes to recover 80% of the project debt service through user and non-user property taxation and 20% through betterment assessments to be paid by users of the sewer system. The EENF provides estimates for the average (capital and O&M) for households connected to the sewer system (\$2,592.00) and households not connected to the sewer service area (\$2,544.00).

The SEIR should include estimates for the costs of land acquisition associated with the proposed cluster treatment plants and corresponding groundwater disposal sites. The SEIR should document any assumptions concerning the probable cost of acquiring parcels for wastewater purposes. The Town should consult with MassDEP during the preparation of this section of the SEIR.

Future Sewer Expansion

The Town's Core Program has been designed to accommodate potential future expansion to serve the remaining unsewered areas of Orleans under the Expanded Program and/or additional wastewater flows from the neighboring towns of Eastham and Brewster under the Regional Program.

Expanded Program

The Expanded Program would provide town-wide sewers in Orleans and would cost an additional \$95 million dollars. However, as described in the EENF and noted elsewhere in this Certificate, additional wastewater disposal sites or reuse options may be required to support the treatment and disposal of additional wastewater flows anticipated under the Expanded Program or the Regional Program described below. The SEIR should evaluate the Tri-Town site's capacity to treat the additional estimated wastewater flows to be generated under the Expanded and the Regional wastewater treatment alternatives.

Regional Program

I commend the Town for undertaking the Regional Economies of Scale study of potential regional approaches to address the wastewater treatment and disposal needs for the Towns of Orleans, Eastham and Brewster, and the regional issues pertaining to nutrient loading, wastewater treatment and disposal affecting the Nauset Marsh/Town Cove and Pleasant Bay coastal embayments. I ask the Town of Orleans, together with the Towns of Eastham to the north and Brewster to the south to work together with MassDEP, the Cape Cod Commission and others to continue the discussion of possible opportunities to integrate the Town of Orleans' wastewater treatment planning efforts with the planning efforts being undertaken by the Towns of Eastham and Brewster. In a separate section of the SEIR, the Town should include an update of the Regional Economies of Scale study to identify regional strategies for reducing the nutrient loading to coastal embayments and freshwater ponds in Orleans, Eastham and Brewster.

Public Participation

I note that the State's Revolving Fund (SRF) regulations require the proponent to conduct a minimum of one public meeting and one public hearing for this project. The SEIR should include a discussion of the Town's public participation program activities completed and proposed to date.

Mitigation/Section 61

The SEIR should include a separate chapter on mitigation measures. This chapter on mitigation should include Draft Section 61 Findings for all state agency actions. The Draft Section 61 Findings should contain a clear commitment to mitigation, an estimate of the individual costs of the proposed mitigation and the identification of the parties responsible for implementing the mitigation. A schedule for the implementation of mitigation should also be included. I ask the Town to continue to work closely with CCC, MassDEP, and the Pleasant Bay Resource Management Alliance to design and implement a sustainable Comprehensive Wastewater Facilities Plan and mitigation plan for the Town of Orleans that will help to offset the proposed project's municipal sewerage impacts.


Comments

The SEIR/Final CWMP should respond to the comments received. I recommend that the Town use either an indexed response to comments format, or else direct narrative response. The SEIR should present any additional narrative or quantitative analysis necessary to respond fully to the comments received. This directive is not intended to, and shall not be construed to, enlarge the scope of the SEIR beyond what has been expressly identified in this Certificate.

Circulation

The Final SEIR/Final CWMP should be circulated in compliance with Section 11.16 of the MEPA regulations and copies should also be sent to the list of "comments received" below and to town officials from the Towns of Orleans, Eastham and Brewster. A copy of the SEIR should be made available for public review at the Orleans, Eastham and Brewster Public Libraries.

July 10, 2009
DATE



Ian A. Bowles, Secretary

Comments received: (continued on next page)

05/18/09 Massachusetts Historical Commission (MHC)

Comments received: (continued)

06/10/09 Cape Cod Commission (CCC)
05/21/09 Division of Marine Resources
06/08/09 Pleasant bay Resource Management Alliance
06/18/09 Town of Orleans
06/24/09 Natural Heritage & Endangered Species Program (NHESP)
06/29/09 Department of Conservation and Recreation (DCR)
06/30/09 MA Department of Environmental Protection (MassDEP) – SERO
07/01/09 Mary Hartley

EENF #14414
IAB/NCZ/ncz