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May 29, 2009

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

PROJECT NAME : Sturbridge Comprehensive Wastewater Management
Plan
PROJECT MUNICIPALITY : Sturbridge
PROJECT WATERSHED : Quinebaug River
EOEA NUMBER : 14407
PROJECT PROPONENT : Town of Sturbridge, Department of Public Works
DATE NOTICED IN MONITOR : April 22, 2009

Pursuant to the Massachusetts Environmental Policy Act (M.G.L. c. 30, ss. 61-62I) and Sections 11.05 and 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that this project **requires** the preparation of Draft and Final Environmental Impact Reports.

Project Overview

Since 1988, the proponent has been implementing a Wastewater Master Plan for Sturbridge. The Wastewater Master Plan is comprised of approximately 41 miles of sewerage, nine pump stations, and a 0.75 million gallon per day (mgpd) wastewater treatment facility (WWTF). The proponent has now prepared this Expanded Environmental Notification Form (ENF)/Draft Comprehensive Wastewater Management Plan (CWMP) to address wastewater management issues in the Town of Sturbridge for the next 20 years (2027). The Expanded ENF/Draft CWMP filed for this project is a first step in a process that will evaluate existing conditions, identify wastewater needs, and propose solutions. The CWMP has been undertaken for the purposes of:

- 1) Evaluating and planning impacts from community growth on the Town's existing

- wastewater management systems over the next twenty years;
- 2) Expanding the WWTF to handle future flows and loads;
 - 3) Addressing more stringent National Pollutant Discharge Elimination System (NPDES) effluent limits in the current permit;
 - 4) Evaluating and quantifying Infiltration/Inflow (I/I) conditions within the existing system;
 - 5) Evaluating the feasibility of on-site sewage disposal options for future growth areas and existing unsewered areas with failing systems;
 - 6) Evaluating alternatives to traditional surface water disposal methods, including groundwater disposal and water reuse, with the intent of minimizing any increased discharge to the Quinebaug River; and
 - 7) Reviewing the long-term effectiveness of regional disposal options, including the existing Intermunicipal Agreement (IMA) with the Town of Southbridge.

The currently proposed CWMP includes implementing an I/I control and mitigation plan, expanding the centralized WWTF, expanding the centralized wastewater treatment system area, and maintaining its existing IMA with the Town of Southbridge to continue discharging potential gravity wastewater flows from the Fiske Hill area of Sturbridge to the Southbridge WWTF.

The proponent has assessed the condition of the current wastewater infrastructure in the Town of Sturbridge, identified potential alternatives to the current systems, and screened potential in-town and regional locations to evaluate their suitability for existing and new infrastructure. The proposed project consists of the expansion of the WWTF from 750,000 gpd to 1.3 mgpd by utilizing a BioMag treatment process (Preferred Alternative). A portion of the Town's existing sewer system drains to the Southbridge WWTF (approximately 30,000 gpd). Over the next twenty years, the proponent has estimated that this area of Town is estimated to generate approximately 50,000 gpd. The project also includes the installation of approximately 99,400 linear feet/18.8 miles of new sewer pipe within existing streets, the construction of about four new wastewater pumping stations, the installation of grinder pumps on private property, and clean-up and paving activities to complete the project. The 18.8 miles of new sewers includes 3.11 miles of force mains, 5.47 miles of low pressure sewers, and 10.25 miles of gravity sewers. The proponent is proposing to construct the project in two phases. The proposed Phase 1 includes the expansion of WWTF and an I/I monitoring and removal plan. Phase 2 would include the extension of the sewer system to additional significant need areas in the vicinity of the existing sewer system (Study Areas 3, 6, 7, 8, 10, 11, 12, 14, 16, 17, and 21) once capacity becomes available at the WWTF and funding is appropriated.

I note that the proponent previously requested a Phase 1 Waiver for the proposed upgrade of its WWTF. On May 8, 2009, the proponent withdrew its requested Phase I Waiver. The Phase I Waiver was to upgrade its WWTF in order to meet its National Pollutant Discharge Elimination System (NPDES) Permit requirements to remove phosphorous to 0.2 mg/l by December 2010 and replace aging and obsolete facility equipment. Upon review of the Phase I Waiver request with the Department of Environmental Protection (MassDEP), the MEPA Office and MassDEP

have determined that this work can be completed as a “Replacement Project” under the regulations based on the information provided by the Town.

State Permits and Jurisdiction

The project requires a mandatory EIR pursuant to Section 11.03(5)(a)(3) of the MEPA regulations (301 CMR 11.00) because it involves the construction of one or more new sewer mains of ten or miles in length. The project will require a Sewer Extension Permit, a Treatment Works Plan Approval (BRP WP 68), and a 401 Water Quality Certificate from MassDEP. It will require review by the Natural Heritage Endangered Species Program (NHESP) to determine if portions of the project occur within Priority Habitat. The project 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 Orders of Conditions from the Sturbridge Conservation Commission, which may treat it as a “limited project” under the Wetlands Protection Act.

The project has received funding from the State Revolving Fund (SRF) program for the Draft CWMP. The proponent anticipates applying for SRF loans for subsequent planning and construction of portions of the 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

General

The proponent should prepare the Draft Environmental Impact Report (DEIR)/CWMP in accordance with the guidelines contained in Section 11.07 of the MEPA regulations, as modified by this scope.

Project Description

The DEIR should include an executive summary explaining what is being proposed and why. It should identify significant environmental benefits and impacts, and measures that will be taken to avoid, minimize and mitigate adverse impacts. The DEIR 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. Detailed 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. The DEIR should provide the best information currently available for each proposed

phase of the project, and should explain what additional information is proposed for later collection and analysis.

The DEIR should discuss the state permitting process for this project and describe how it will meet all applicable performance standards.

Needs Assessment

A needs assessment was conducted in order to determine the types of wastewater disposal that would be most appropriate for areas that are currently unsewered. The Draft CWMP reviewed the lot size constraints, soil constraints, groundwater constraints, and water resource areas for 37 study areas to determine the wastewater needs. Each developed lot was rated by a point system to determine its sewer needs. The Draft CWMP identified the significant or high needs wastewater areas. Both MassDEP and I generally concur with the findings of the Needs Analysis. The Draft CWMP recommended that the proponent investigate Innovative/Alternatives (I/A) Wastewater Systems with disposal to the groundwater in study areas 2, 29, 33, and 35. It recommended four areas, study areas 23, 27, 32, and 34 for satellite treatment wastewater facilities. The Draft CWMP determined that eleven areas, study areas 3, 6, 7, 8, 10, 11, 12, 14, 16, 17, and 21 be considered for addition to the centralized wastewater system.

The DEIR should identify the basis for the sewerage recommendations in each of the areas proposed. Additional maps and a narrative for each area should be included in the DEIR. Any changes to the proposed CWMP described in the Expanded ENF should be highlighted and explained.

In addition, the DEIR should present a detailed analysis that takes into account measures that have the potential for reducing wastewater volumes, including water conservation and infiltration and inflow (I/I) removal, and adjust the needs analysis accordingly. The DEIR should include detailed responses to the comments received for this project from MassDEP pertaining to the proponent's needs assessment, the potential future sewer demand for the Town of Sturbridge, and the use of zoning overlay districts and specific sewer connection policies as a means for controlling the potential secondary growth impacts that may be induced by public sewers.

Water Consumption

The per capita water usage in Sturbridge is approximately 75 gallons per capita per day (gpcd). The standard for residential water use, Standard 5.2 of MassDEP's Water Conservation Standards, is to "meet or demonstrate steady progress toward meeting residential water use of 65 gpcd including both indoor and outdoor use as soon as practicable, especially in those communities in a basin with a higher level of stress." The DEIR should therefore include a description of how the proponent proposes to reduce water usage by Town residents to meet that standard. I strongly encourage the Town to undertake a comprehensive analysis of potential water

conservation and demand reduction measures to encourage and achieve a reduced level of per capita water consumption, which has a multitude of environmental benefits, including positive impacts on water resources and reductions in greenhouse gas emissions.

Alternatives Analysis

The Draft CWMP reviewed decentralized, community, and regional wastewater alternatives to address the identified wastewater needs. The Expanded ENF identified that the proponent's Preferred Alternative is a BioMag wastewater treatment system for its WWTF expansion. The BioMag system will need to be supplemented with a polishing treatment process that might consist of a CoMag process or filtration equipment. These are the preferred technologies for the expansion of the WWTF. According to the Expanded ENF, between January and April of 2008, the proponent operated a full-scale pilot test of the BioMag wastewater system at its WWTF. The DEIR/CWMP should incorporate the proponent's evaluation of the BioMag system into its alternatives analysis. The Preferred Alternative also includes measures to reduce I/I, to improve maintenance and repairs to the existing wastewater system, to expand the centralized wastewater system to significant needs areas as capacity allows at the WWTF, and to develop satellite wastewater systems for areas distant from the centralized wastewater system.

The DEIR should evaluate and screen all potential alternatives and combinations of alternatives that can address the needs and problems identified in the Draft CWMP. The alternatives analysis should specifically document the need for each disposal measure by geographic area and land use type, including a reasonable projection of growth through the design year. The alternatives to be considered should include the full range of options available under Title 5 (conventional and innovative/alternative systems, both for individual properties and for shared and communal facilities to serve multiple properties) and consideration should be given to maintaining discharges in the sub-basins in which they are now occurring, where possible.

An appropriate set of screening criteria should be developed and applied. These criteria should address the areas of cost (both to individuals and the community), technical feasibility, environmental and public health protection (including maintenance of water balance in the drainage sub-basins), institutional and management issues, and other relevant concerns. It is important that this screening be carefully conducted and that the alternatives are evaluated in a balanced and comparable manner. The DEIR should also include an analysis of alternatives and a recommendation for ownership and management of the wastewater treatment and disposal system. Such an analysis must include consideration of legal, technical, and financial factors, and demonstrate the feasibility of the proposed system.

The DEIR should include more detailed hydrogeological data and modeling for the sites selected for further analysis for a ground water discharge and I/A systems. The proponent should consult with MassDEP and submit detailed hydrogeological work for review and approval by MassDEP prior to any field work and modeling being carried out. It should also consult with

MassDEP regarding the alternatives being considered for in-town groundwater disposal. The DEIR must conduct a detailed analysis to determine whether, or to what extent, wastewater disposal can be carried out at sites within Water Protection Zones. It should identify environmental resources and resource areas such as wetlands, drinking water supplies, fisheries, water bodies, sensitive habitats, parklands, recreational resources, and historic and archaeological interests (including conservation lands) on a plan of reasonable scale. This information is needed so that the potential impacts of proposed facilities on these resources can be evaluated, and the alternatives can be compared in that regard, prior to formal decisions regarding the type, design and location of any proposed wastewater treatment facilities. This identification of resources should include any facilities that are required to convey sewage beyond the Town boundaries. The proponent should also identify the reasons for failing septic systems (under-sized, inadequately maintained, at the end of their design life, poorly sited, etc) in the Town. It should investigate advanced treatment systems that may be available.

The DEIR should consider alternatives to locating sewers and infrastructure within flood zones. The proponent should identify any measures it will propose to protect infrastructure from flooding and erosion. MassDEP has requested that the proponent explore in more depth the feasibility of the disposal of wastewater to the ground in lieu of seeking a modification to the WWTF's NPDES permit for more flow. The proponent must demonstrate that an adequate location for groundwater disposal does not exist within the Town. The DEIR should evaluate groundwater discharge alternatives.

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 DEIR 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. It should examine what regulatory or physical constraints would remain on home expansions after sewers are provided, and whether such expansions might have unanticipated impacts on estimated wastewater flows and water use. I encourage the proponent to consult with MassDEP in developing a growth management strategy.

The CWMP should include provisions to control development and redevelopment of properties in the wetlands and floodplains. The proponent should incorporate the recently

adopted provisions of the Wetlands Protection Act and the State Building Code that apply to these situations.

Projected Wastewater Flows and Sewer System Capacities

The DEIR should contain a detailed analysis of Sturbridge's existing wastewater flows. It should contain an analysis of the Town's wastewater transmission and conveyance capacities for its existing wastewater flows, and for the proposed project's projected design year flows. The analysis should identify the transmission and conveyance capacities from proposed alternative Wastewater Treatment Facilities. The DEIR should identify any/all formal inter-municipal agreements or memoranda of understanding and infrastructure capacity upgrades, proposed and/or currently underway, to support the transmission and treatment capacity analyses in the DEIR. The DEIR must include a full analysis of the methods needed to control future sewer connections and extensions to the system in order to minimize Growth Management issues. The DEIR should also include a copy of any executed or proposed agreements with the Town of Southbridge for wastewater treatment.

The DEIR should also include a discussion of the status of its National Pollutant Discharge Elimination System Permit (NPDES Permit) for wastewater and what impacts the proposed sewer expansion plan and wastewater flows will have on this NPDES Permit. Any commitments to the Inflow/Infiltration (I/I) removal program and water conservation plan must be included in the proposed Section 61 findings for MassDEP. The DEIR should identify the existing wastewater flows, projected flows, the design capacity, and current and future NPDES permit limits for the WWTF. It should identify when the existing NPDES permit for the WWTF will expire. The DEIR should identify any potential new NPDES permit requirements. It should identify the schedule for any proposed WWTF plant upgrades that may be required to meet the NPDES permit limits. The new NPDES permit limits will establish a Total Maximum Daily Load (TMDL) to meet water quality standards. The DEIR should describe how increasing Sturbridge's wastewater to the WWTF would be structurally accommodated by the wastewater system under its current and/or any revised NPDES permit (as applicable).

Wetlands

The DEIR should provide detailed plans, at a suitable scale, illustrating the proposed project's impacts to wetland resource areas. It 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 DEIR 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 proponent 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 DEIR which, at a minimum, includes: replication location(s), elevations, typical cross sections, test pits or soil boring logs, 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.

The DEIR 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 DEIR should identify all parcels that are currently deemed unbuildable within the 100-year flood plain which would potentially become buildable as a result of a sewer installation.

Historical/Archeological Resources

The proponent should provide the Massachusetts Historical Commission (MHC) with a US Geological Survey topographical map that clearly locates the project area and scaled project plans showing existing and proposed conditions. These plans should be submitted to MHC as early as possible, and I encourage the proponent to coordinate with MHC to ensure review of any potential historic impacts from the project. The DEIR should provide an update on the status of these discussions.

Rare Species

The Division of Fisheries & Wildlife's Natural Heritage & Endangered Species Program (NHESP), has requested that the proponent consult with NHESP to discuss any rare species concerns pursuant to the Massachusetts Endangered Species Act (MESA) as specific plans are developed. The DEIR should report on the results of this consultation with NHESP. If the NHESP should subsequently find that the project will require a Conservation Permit pursuant to the MESA, I will require the proponent to explain the impacts and evaluate avoidance/mitigation strategies. I strongly encourage the proponent to submit project plans for NHESP's review for any proposed work within rare species habitat located within the project area as early as possible.

Construction Impacts

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

Greenhouse Gas Emissions (GHG) and Sustainable Development

The project requires an EIR and will receive financial assistance from the Commonwealth and therefore is subject to the requirements of the EEA/MEPA Greenhouse Gas Emissions (GHG) Policy and Protocol. Consistent with the objectives established in the Policy (which is available on the MEPA website at

<http://www.mass.gov/envir/mepa/pdffiles/misc/GHG%20Policy%20FINAL.pdf>), the DEIR should quantify GHG emissions associated with each of the proposed project alternatives and proposed mitigation measures. In connection with this requirement, EEA routinely schedules pre-filing meetings to provide technical assistance to proponents in the development of GHG analyses, and I strongly encourage the Town to request a pre-filing meeting with EEA as it prepares the DEIR.

A project at this early stage of development provides a multitude of opportunities for considering and comparing alternatives, facilities, and equipment that reduce energy consumption and substitute renewable energy sources for fossil fuel sources. In the DEIR, the proponent should consider the impacts of greenhouse gas emissions in the evaluation criteria of alternatives, and propose measures to mitigate the GHG emissions associated with the alternative methods of treating wastewater. The DEIR should include a GHG Emissions section which will establish a Base Case, a Preferred Alternative Case and a Preferred Alternative with Greater GHG Mitigation Case along with providing the other information as contained in and required by the Policy. Mitigation measures for wastewater may include: more energy efficient designs of facilities, treatment technology and equipment; infiltration and inflow (I/I) removal from sewer mains; and water conservation measures.

The Town should explore the use of renewable and energy-efficient equipment when designing new or upgraded wastewater treatment facilities, pump stations and other components of the Town's comprehensive wastewater management system. The Department of Energy Resources (DOER) and I request that following mitigation measures be evaluated in the DEIR:

- Specification of 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;
- Specification of high efficiency models for new and replacement pumps, blowers, agitators, or other rotating equipment;
- Consideration of Variable Frequency Drives (VFDs) for all motors larger than ten HP;
- 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;
- 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;

- 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;
- A 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
- Identification of 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. The costs of some improvements are eligible for funding through the SRF and other programs. I encourage the proponent to consult with MassDEP regarding this demonstration project as it prepares the analysis required under this section.

Costs

The DEIR should provide the revised costs for its BioMag and CoMag treatment technologies within the total cost and the cost to users' analysis. It should present more detailed estimates of the construction costs and capital and operating cost for each of the Town's proposed alternatives and how they will be financed. MassDEP has requested the estimated cost per user be included in the DEIR.

Mitigation Measures/Section 61 Findings

The DEIR should include a summary of all mitigation measures to which the proponent has committed that includes a schedule, estimated costs, and persons/agencies responsible for implementing the mitigation. It should also include proposed Section 61 Findings for use by state permitting agencies.

Response to Comments

In order to ensure that the issues raised by commenters are addressed, the EIR should include a response to comments. This directive is not intended to and shall not be construed to enlarge the scope of the DEIR beyond what has been expressly identified in the Certificate. The DEIR should include a copy of this Certificate and of each comment received.

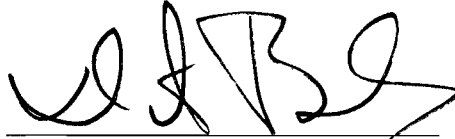
Circulation

The DEIR 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 Sturbridge and

Southbridge officials. A copy of the DEIR should be made available for public review at the Sturbridge and Southbridge Public Libraries.

May 29, 2009

Date



Ian Bowles

Comments received:

Tighe & Bond, 4/21/09

Tighe & Bond, 4/21/09

Tighe & Bond, 5/8/09

Massachusetts Department of Environmental Protection/Central Regional Office, 5/21/09

MassWildlife/Natural Heritage Endangered Species Program, 5/22/09

Massachusetts Department of Environmental Protection/Central Regional Office, 5/26/09

Tighe & Bond, 5/28/09

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