

MEPA Analyst: *Nick ZAVOLAS*

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NPC

Notice of Project Change

The information requested on this form must be completed to begin MEPA Review of a NPC in accordance with the provisions of the Massachusetts Environmental Policy Act and its implementing regulations (see 301 CMR 11.10(1)).

Project Name: Bourne Integrated Solid Waste Management Facility		EOEA #: 11333	
Street: 201 MacArthur Boulevard			
Municipality: Town of Bourne		Watershed: Cape Cod	
Universal Transverse Mercator Coordinates: N 4,620,500 E 368,500		Latitude: 41° 43' Longitude: 70° 35'	
Status of project construction: approximately 40% complete			
Proponent: Town of Bourne, Department of Integrated Solid Waste Management			
Street: 24 Perry Avenue			
Municipality: Bourne		State: MA	Zip Code: 02532
Name of Contact Person From Whom Copies of this NPC May Be Obtained: Phil Goddard, Environmental Manager			
Firm/Agency: Town of Bourne		Street: 24 Perry Avenue	
Municipality: Buzzards Bay		State: MA	Zip Code: 02532
Phone: 508-759-0651	Fax: 508-759-0652	E-mail: pgoddard@townofbourne.com	

In 25 words or less, what is the project change? The project change involves producing electricity from the control of landfill gas collected from the Landfill.

See full project change description beginning on page 3.

Date of ENF filing or publication in the Environmental Monitor: October 7, 1997,

Was an EIR required? Yes No; if yes,
 was a Draft EIR filed? Yes (Date: 12/3/98) No
 was a Final EIR filed? Yes (Date: 10/15/99) No
 was a Single EIR filed? Yes No

Have other NPCs been filed? Yes (Date(s): June 23, 2003; April 17, 2007) No

If this is a NPC solely for lapse of time (see 301 CMR 11.10(2)) proceed directly to
"ATTACHMENTS & SIGNATURES" on page 4.

PERMITS / FINANCIAL ASSISTANCE / LAND TRANSFER

List or describe all new or modified state permits, financial assistance, or land transfers not previously reviewed: MEPA Notice of Project Change temporary tonnage increase; Phase 2A/3A- Minor Mod. for transfer operations; Phase 3, Stage 3 Corrective Action Design; Phase 2A/3A- Major Mod. for horizontal gas collection piping; MassHighway permit for work on Route 28; Phase 2A/3A- Minor Mod. for use of North Dorchester Bay clay; MassHighway- litter picking on Route 28; Phase 2A/3A – Minor Mod. for transfer operation; Administrative Consent Order-amendment number 9; Phase 2A/3A- Major Mod. for horizontal gas collection piping; Special Waste – Major, for water treatment plant residuals.

Are you requesting a finding that this project change is insignificant? (see 301 CMR 11.10(6))

Yes No; if yes, attach justification.

Are you requesting that a Scope in a previously issued Certificate be rescinded?

Yes No; if yes, attach the Certificate

Are you requesting a change to a Scope in a previously issued Certificate? Yes No; if yes, attach Certificate and describe the change you are requesting:

Summary of Project Size & Environmental Impacts	Previously reviewed	Net Change	Currently Proposed
LAND			
Total site acreage		No change	
Acres of land altered		No change	
Acres of impervious area		No change	
Square feet of bordering vegetated wetlands alteration		No change	
Square feet of other wetland alteration		No change	
Acres of non-water dependent use of tidelands or waterways		No change	
STRUCTURES			
Gross square footage		No change	
Number of housing units		No change	
Maximum height (in feet)		No change	
TRANSPORTATION			
Vehicle trips per day		No change	
Parking spaces		No change	
WATER/WASTEWATER			
Gallons/day (GPD) of water use		No change	
GPD water withdrawal		No change	
GPD wastewater generation/ treatment		No change	
Length of water/sewer mains (in miles)		No change	

Does the project change involve any new or modified:

1. conversion of public parkland or other Article 97 public natural resources to any purpose not in accordance with Article 97? Yes No

2. release of any conservation restriction, preservation restriction, agricultural preservation restriction, or watershed preservation restriction? Yes No

3. impacts on Estimated Habitat of Rare Species, Vernal Pools, Priority Sites of Rare Species, or Exemplary Natural Communities? Yes No

4. impact on any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

Yes No; if yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources? Yes No

5. impact upon an Area of Critical Environmental Concern? Yes No
If you answered 'Yes' to any of these 5 questions, explain below:

PROJECT CHANGE DESCRIPTION (attach additional pages as necessary). The project change description should include:

- (a) a brief description of the project as most recently reviewed
- (b) a description of material changes to the project as previously reviewed,
- (c) the significance of the proposed changes, with specific reference to the factors listed 301 CMR 11.10(6), and
- (d) measures that the project is taking to avoid damage to the environment or to minimize and mitigate unavoidable environmental impacts. If the change will involve modification of any previously issued Section 61 Finding, include a proposed modification of the Section 61 Finding (or it will be required in a Supplemental EIR).

(a) A brief description of the project as most recently reviewed

The project as most recently reviewed and certified under MEPA includes a phased development of a regional integrated waste management facility within the existing 74-acre site assigned Bourne Landfill, located off MacArthur Boulevard (Route 28 North) in the Town of Bourne. The project includes a landfill, transfer station, and residential recycling center (together "the Project"). The Project is owned and operated by the Town of Bourne (the Proponent). The Project is permitted to accept up to 825 tons per day of waste for disposal, reuse, composting and recycling. The landfill portion of the Project is permitted to accept MSW, processed construction and demolition debris, municipal combustion ash and difficult to manage wastes. The landfill incorporates active collection of landfill gas through a series of horizontal and vertical extraction wells and production system and control of landfill gas through a flare, which elements have been previously reviewed and approved through the MEPA process.

(b) A description of material changes to the project as previously reviewed

Proponent proposes a project change that is limited to beneficial recovery of energy from the control of landfill gas. Specifically, the Proponent proposes to install internal combustion engine-generator sets, turbines or other energy recovery technology to generate up to 4.3 MW electricity (the Generating Facility) from the combustion of landfill gas (LFG), as well as the potential for installation of additional heat recovery equipment (together herein the Project Change). The Generating Facility will be installed on the property of the Landfill in Bourne, Massachusetts.

The Town of Bourne already has an existing LFG collection system and flare to collect and control LFG. Bourne will install the Generating Facility as an integral part of the system as an additional control measure. The Generating Facility will be placed on less than 0.5 acres owned by the Town of Bourne. The Generating Facility Site is bordered to the north by an existing garage and leachate storage tank, west by the Landfill, to the east by military base, and south by the 25-acre parcel of land that the Applicant is developing. The Generating Facility Site is a cleared, graded, and flat area (see attached Site Plan).

The Proponent will continue to expand and operate the LFG collection system to collect LFG from new areas of waste of the expanding Landfill. The Proponent will install and operate the Generating Facility to serve as the primary pollution control device for destroying LFG. In addition, the Proponent will utilize the Flare as a back-up pollution control device for destroying LFG in the event that the Generating Facility cannot accept the LFG for any reasons (such as shutdown for maintenance or repairs). The Flare will serve as a secondary or back-up pollution control device for destroying LFG in the event that the Generating Facility cannot accept the LFG for any reasons. The Generating Facility will be part of a long-term solution to collect, destroy and, to recover energy from LFG that is being generated at the Landfill. The Generating Facility would be installed at a lower capacity level initially and be expanded as the LFG quantities increase to their projected maximum in 2018. By 2018, the Proponent projects sufficient LFG to operate the Generating Facility at the full proposed generating capacity of 4.3 MW. Currently, sufficient quantities of LFG are available to operate the Generating Facility at approximately 2.0 MW or less than 50-percent of its maximum capacity. Therefore, the Generating Facility will most likely be constructed in phases to match the available quantities of LFG.

The Project Change is consistent with the commitment made by the Town of Bourne in the course of the MEPA process for the Landfill at the original time of its development (as described in more detail herein) to mitigate potential impacts of LFG emissions by collecting and combusting LFG. Furthermore the Generating Facility component of the Project would control LFG emissions at the Landfill in order to reduce potential adverse impacts on the environment and on the public health and safety. The Generating Facility will use engines or equivalent technology with advanced pollution control technology to destroy the methane and non-methane organic compounds (NMOCs) in the LFG, thereby reducing the impact of LFG emissions on ambient air quality and global warming. Finally, by combusting the LFG in Engines, the

Generating Facility would recover energy from what would otherwise be a lost resource. In this role, the Generating Facility would offset air pollutant emissions from the generation of an equivalent amount of electricity from alternative conventional facilities. Recovery of energy from LFG is encouraged by programs sponsored by the United States Environmental Protection Agency (the USEPA) and the United States Department of Energy (the USDOE), which make these projects eligible for credit for offsetting air emissions and reducing other environmental impacts. Therefore, the Generating Facility may be able to obtain substantial credits for reducing carbon dioxide emissions under the USEPA Climate Leaders Program and the USDOE Climate Challenge Program. In addition, the Project Change may be able to create credits for reducing carbon dioxide emissions under the Regional Greenhouse Gas Initiative (RGGI) program being integrated into the MDEP regulations. Note that while the flare created direct emission reductions of methane, the Generating Facility would create both direct and indirect emission reductions of methane, a greenhouse gas that is 21 times the equivalent by weight of carbon dioxide. Currently the landfill gas collection system and flare result in reducing greenhouse gas emissions by 70,000 to 80,000 tons per year of CO₂ equivalents below its baseline through direct emissions reductions. Once completing installed and operating, the Project Change has the potential to reduce greenhouse gas emissions directly by 150,000 to 170,000 tons per year of CO₂ equivalents plus indirect emission reductions below baseline emissions. Therefore, this Project Change would be a source of substantial Offsets, as that term is defined in the MEPA Greenhouse Gas Emissions Policy and Protocol, for other projects in Massachusetts to meet their obligations under MEPA if Offsets are required by their project.

Lastly, development of landfill gas to energy projects at landfills is specifically encouraged by the MDEP through its interagency Memorandum of Understanding with the USEPA Landfill Methane Outreach Program, and its policy titled Policy Relating to the Permitting of Landfill Gas-to-Energy Projects (COM-96.001). The MDEP policy specifically states

“Given that the Department, by entering into an interagency Memorandum of Understanding to promote LFG-to-energy project in Massachusetts, has determined that these projects are environmentally beneficial overall, there is a need to establish policy that removes the traditional hurdles to the permitting of such projects, but provides sufficient public health safeguards.”

Note that the Project Change complies with the MDEP policy, emission levels and control technology requirements, and ambient air quality standards. This compliance demonstration has been shown in a comprehensive plan approval application that has been submitted to MDEP for their review and approval, which review has been substantially completed.

- (c) The significance of the proposed changes, with specific reference to the factors listed 301 CMR 11.10(6)
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The Project Change will not significantly increase potential environmental consequences when considering all the criteria listed in 301 CMR 11.10(6)(a) through (g) as described below.

- a) Expansion of Project. None. No change in physical dimensions of the Project will result from the Project Change. The Project Change will be an infrastructure addition within the existing boundaries of the Project.
- b) Generation of further impacts. Other Potential Impacts of the Project

The entire site of the Project Change was addressed as part of the MEPA review process for the Project. The Project Change will be located on disturbed land. Existing roads will provide access to and around the site. All environmental baseline, impacts and mitigation have been reviewed as part of the MEPA process for this site area. A summary of the findings for each of the environmental criteria during the MEPA review process for the Landfill (and subsequently for obtaining the Solid Waste Facility Permit from MDEP), as well as the findings for the Project Change, is provided below.

- **Rare Species.** The Site involves previously disturbed land that does not contain a habitat of rare species, vernal pools, priority sites of rare species or exemplary natural communities, and therefore, no alteration of designated significant habitat or taking of an endangered or threatened species will occur.
- **Historical/archaeological resources.** The Landfill does not include any structure, site or district listed in the State Register of Historic Places or inventory of historic and archaeological assets of the Commonwealth. Therefore, the Project will not destroy or alter or have any impacts on any historical or archaeological resource.
- **Areas of Critical Environmental Concern.** The proposed change will have no impact on the nearby Back River ACEC.

Land. The development of the Landfill involved the alteration of more area than is required to exceed the MEPA criteria for land. However, the Project Change does not meet or exceed any review thresholds related to land. The footprint of the building and ancillaries will be approximately 8,000 square feet within an area of less than ½ of an acre of land that may be altered. The Project will not involve the conversion of public parkland or other Article 97 public natural resources to any purpose not in accordance with Article 97.

Wetlands. The Project Change will not alter any wetlands, waterways or tidelands, and the work performed to construct the Project Change will not be within a 100-foot buffer zone of bordering vegetative wetlands.

- **Water.** Water use by the Project Change will be primarily for employee sanitary facilities and general facility maintenance, and will be supplied through the existing Town water service to the site. Typically, one operator will staff the Project Change during the weekday. The Project Change will not exceed any MEPA thresholds regarding water use.
- **Wastewater.** The wastewater from the Landfill is limited to leachate, employee sanitary

facilities and general facility maintenance. Under the existing permits and through the existing site facilities, the Project Change will discharge its wastewater associated with its sanitary facilities and general facility maintenance directly to an existing septic system. Any condensate collected shall be directed to the landfill leachate system. No permit modifications will be required, and no MEPA thresholds will be exceeded.

- Transportation. The Project Change will create an insignificant quantity of traffic.
- Energy. The Project Change does not meet the size thresholds for MEPA review under energy.
- Air. The primary impacts to air quality were from emissions of LFG. The Proponent made commitments to LFG collection and control in order to mitigate the air quality impacts. The Project Change will serve as the primary pollution control device for destroying emissions of LFG to the environment. The secondary air emissions from the destruction of emissions of LFG will be subject to the requirements of permits issued separately by the MDEP Air Division (see above). The Proponent has applied for a Comprehensive Plan Approval and the MDEP Southeast Region Air Division has substantially completed its review. The Proponent's application demonstrates compliance with the MDEP policy for landfill gas-to-energy, emission levels and control technology requirements, and ambient air quality standards, which review has been substantially completed by MDEP Southeast Regional Air Division.

The benefits to air quality from the Project Change include the continued control of the non-methane organic compounds and methane contained in the landfill gas; and overall improvement to air emissions by reducing the quantity of NO_x and SO₂ emitted to the regional air shed when accounting for the direct and indirect emission reductions of the Project Change as shown in the table below. Furthermore, the Project Change has the potential to reduce greenhouse gas emissions directly by 150,000 to 170,000 tons per year of CO₂ equivalents plus indirect emission reductions once the Project Change fully installed and operating at full capacity. These air quality benefits are the basis for the policy the MDEP promulgated to encourage the implementation of LFG-to-energy projects at landfills while establishing control limitations to protect the public health, which the Project Change is proposed to be in compliance.

Units are in tons per year	Estimated potential emissions from Generating Facility	Direct emissions reduction from avoided flaring	Indirect emissions reductions from avoided generation*	Estimated potential net emissions from Generating Facility
Primary Pollutants				
Non-methane organic compounds, NMOC (as hexane)	18.3	9.5	2.0	6.8
Volatile organic compounds (VOCs)	18.3	7.5	Unknown	10.8
Secondary Pollutants				
Nitrogen oxides, NOx (as NO2)	36.6	13.1	28.3	(4.7)
Carbon monoxide, CO	183.0	64.7	26.0	92.3
Particulates, (PM-10)	12.2	11.0	Unknown	1.2
Sulfur dioxide, SO2	15.6	15.6	113.0	(113.0)
* Assumes avoiding 4.3 MW of generation from the Mirant Canal Generating Plant.				

The results of air dispersion modeling of the estimated potential emissions from the Generating Facility under worst-case conditions demonstrate, which is included in the application for Plan Approval to MDEP, that the Project Change complies with the Massachusetts and National Ambient Air Quality Standards.

Solid and hazardous waste. The mitigation of impacts from solid waste disposal at the Landfill was adequately addressed. The Project Change is an appurtenance to the Landfill operations, which appurtenance was identified during MEPA to ultimately control the LFG emissions that occurred from biological decomposition of solid waste in the Landfill. The Project Change construction and operation will be subject to the requirements of permit issued by the MDEP Air Division.

The Project Change represents implementation of a mitigation measure for potential air quality impacts that was committed to by the Proponent during the MEPA process for the Landfill and is essential to the long-term control of emissions of LFG from the Landfill. The Project Change will be required to obtain and meet requirements under MDEP permits issued by the Air Division. As discussed above, the Project Change will not trigger any MEPA thresholds, nor will it significantly increase environmental consequences. In fact, the Project Change will provide net benefits to the environment through the reliable control of emissions of LFG and recovery of energy from an otherwise lost energy resource.

c) *Change in expected date for commencement of the Project....* There is no change, as this project has not specifically been proposed previously.

d) Change of the Project site... There is no change to the site location.

e.) New application for a Permit... The proposed change will be addressed by the Massachusetts Department of Environmental Protection and our application for a Comprehensive Plan Approval.

f) For a Project with net benefits... Please refer to the previously described benefits in sections b and c.

g) For a Project involving a lapse of time... N/A.

(d) measures that the project is taking to avoid damage to the environment or to minimize and mitigate unavoidable environmental impacts. If the change will involve modification of any previously issued Section 61 Finding, include a proposed modification of the Section 61 Finding (or it will be required in a Supplemental EIR).


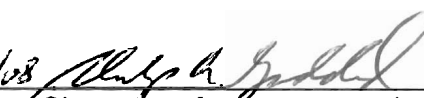
None. Previous Section 61 findings will not need to be modified. No new measures resulting from the Project Change are required to avoid damage to the environment or to minimize and mitigate unavoidable environmental impacts.

ATTACHMENTS & SIGNATURES

Attachments:

1. Secretary's most recent Certificate on this project
2. Plan showing most recent previously-reviewed proposed build condition
3. Plan showing currently proposed build condition
4. Original U.S.G.S. map or good quality color copy (8-1/2 x 11 inches or larger) indicating the project location and boundaries
5. List of all agencies and persons to whom the proponent circulated the NPC, in accordance with 301 CMR 11.10(7)

Signatures:

<p>12/5/08 </p> <hr/> <p>Date Signature of Responsible Officer or Proponent</p>	<p>12/5/08 </p> <hr/> <p>Date Signature of person preparing NPC (if different from above)</p>
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<p>Brent T. Goins</p> <hr/> <p>Name (print or type)</p>	<p>Philip A. Goddard</p> <hr/> <p>Name (print or type)</p>
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<p>Town of Bourne, ISWM Department</p> <hr/> <p>Firm/Agency</p>	<p>Town of Bourne, ISWM Department</p> <hr/> <p>Firm/Agency</p>
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